MPP5 Fire Prevention and Mitigation Plan

Plastic Recycling Facility

Environmental Permit

PERMIT NUMBER EPR/HP3938RN

Fenestration Recycling Company Ltd

(t/a The National Window Recycling Company)

Neath Abbey Wharf

Skewen

Neath

SA10 6BL

Document Revisions

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1 INTRODUCTION

1.1 Background

Fires involving combustible materials can cause significant harm to people and the environment as a result of:

- combustion products: even those from non-toxic materials release airborne pollutants which can cause both short and long term effects on human health and the environment;
- fire water run-off: this can transport pollutants into drainage systems, rivers and lakes, groundwater and soil, threatening water supplies, public health, wildlife and recreational use;
- thermal radiation: which harms people and the environment and can lead to fire spread;
- hazardous waste: which can be created by the fire and has important ramifications for fire fighting
- explosions and projectiles: which can harm people and spread the fire to unaffected areas
- Harm to people and property: fire can threaten life and cause property damage

The impact of a fire may be both immediate and long lasting and can present a significant burden for the Fire and Rescue Services, other agencies and the public – including the risk of death, and harm to public health.

As a polluter the company responsible for the fire is likely to be required to pay the cost of any subsequent clean-up. This can be expensive, as in many cases the solid remains of combustion products and partially burnt material is classified as hazardous waste. There may be other costs associated with responders' incident response and/or fines or costs through the criminal and/or civil courts.

Other indirect effects on a business can result from a fire; its reputation may suffer and insurance costs are likely to rise.

1.2 Purpose of this Fire Management Plan

This Fire Prevention Plan (FPMP) outlines the methods by which Fenestration Recycling Company Ltd will systematically assess, prevent and act to control fire within combustible materials (plastics or other combustible wastes) stored and treated at the Neath Abbey Wharf, Neath Abbey, Neath Port Talbot, SA10 6BL.

This EMS Plan was prepared to support the submission of an application to Natural Resources Wales for a normal variation (to permit EPR/HP3938RN/T001) to change the waste operations from those of a Waste Transfer Station (A11) to physical treatment of waste (A16), to increase the area of the permitted site, to change EWC codes permitted onsite and to increase the tonnage limits for storing waste on-site. The permit was also consolidated to a modern permit template and conditions.

The site only accepts and treats uPVC window and door frames (and similar materials). Moving forward the company intends to expand the range of rigid plastics that it accepts and processes for recovery.

The permitted operations may be observed as:

- Receipt, inspection and unloading of waste from transporter vehicles and transfer to storage using on-site plant;
- Manual sorting and segregation;
- Cutting and crushing (hammer milling and granulation) of waste to reduce its size;
- Screening and automated sorting of waste to separate different fractions;
- Bagging, baling or bulking of waste to facilitate transport;

- Loading and transfer of bagged, baled or loose metals onto articulated or hooklift vehicles for dispatch to recycling facilities for recovery; and
- Loading and transfer of small volumes of residual waste onto hooklift vehicles for dispatch to recycling facilities for recovery or disposal.

The site has an annual throughput of 24,999 tonnes per annum.

This Fire Prevention Plan (FPMP) forms part of a suite of Management Pans that have been prepared to enable the operation of the facility to be undertaken in a manner that minimises any risk of environmental harm.

The fire management plan is a working document with the specific aim of ensuring that:

- Fire prevention is a day to day activity delivered through good operational practices, including physical and management control measures; and
- All appropriate measures are taken to prevent fire but, in the event of a fire occurring, plans are in place and are effective in minimising environmental risks.

This FPMP has been produced in accordance with Fire Prevention and Mitigation Plan Guidance – Waste (Version 1, May 2016). It addresses the impacts of fire outbreak, monitoring procedures and the control measures employed to mitigate any risk and considers:

- Feedstock Inventory;
- Storage Conditions and Process Management;
- Prevention Techniques;
- Fire Procedures;
- Combustion Products, Minimisation and Control;
- Safe Access; and
- Site Plans.

Within this FPMP, text highlighted in **Bold Blue** refers to documents that form part of the EMS.

2 SITE LOCATION AND OPERATIONS

2.1 Site Location

The facility is located in the approximate centre of industrial development at Neath Abbey Wharf, approximately 2.5km west of Neath town centre (OS Grid Reference SS 72767 96345). The location of the site is shown on Drawing 10937-000-A in **MPP7**.

The site is located in an area that has been developed extensively for wharf-side commercial and industrial use. Asphalt manufacture and virgin aggregate supply, and recycled aggregate processing and a Waste Transfer Station/MRF also producing RDF represent the site's immediate neighbours. The closest occupied building (at the Waste Management facility) is located around 95m from the site boundary.

2.2 Site Access

Access to the site is via a private asphalt surfaced road (maintained by the landlord), which connects via an unnamed road with the A465 Heads of the Valleys Road at the Neath Abbey Business Park approximately 700m north east of junction 43 of the M4.

The Grid reference of the site access is SS 72817 96421.

2.3 Site Ownership

The site has been secured by Fenestration Recycling Ltd on the basis of a Nine (9) year lease taken out in September 2011 with the freehold owners, The Steel Supply Co. (Southern) Ltd.

There is potential for impact from fires at adjacent sites and these impacts are reviewed in more detail in this plan.

2.4 Site Layout

The permitted area is shown in Drawing 10937-000-B in **MPP7**.

The site occupies an area of ~0.7 hectares (~1.7 acres) and comprises two open yard areas separated by a railway embankment. The rectangular northern part of the site has an approximate area of 0.41ha and the southern roughly triangular area, 0.29ha. The site is bounded on the western side by a railway embankment and to the east by the Tennant Canal. A block plan for the site is shown in Drawing 10937-000-C in **MPP7**. The layout (describing the site in an approximate north east to south west direction) comprises the following primary areas:

- Northern Area
    - The site entrance with separate access for HGV and staff/visitor vehicles;
    - A weighbridge, weighbridge office, administrative offices and staff welfare facility (including kitchen and toilet facilities), staff and visitor parking;
    - A processing area with buildings/enclosures containing fixed plant (hammer mill, metal sorting);
    - Areas for reception, inspection and storage of accepted wastes awaiting processing;
    - Areas for manual sorting, segregation, screening and storage of sorted wastes;
    - Areas for storage of non-hazardous residual waste;
    - Designated storage areas for plant and vehicles; and
    - An area for the storage of quarantined wastes.
- Southern Area:

- External storage areas for recyclates awaiting dispatch;
- Areas for storage of non-hazardous residual waste;
- A building for processing (granulation and automated sorting) of wastes;
- A temporary/mobile office building; and
- A bunded storage area for fuels and caged storage of gas.

2.5 Waste Management Operations

The following operations will be undertaken at the site:

- Receipt, inspection and unloading of plastic waste from transporter vehicles and transfer to storage using on-site plant;
- Manual sorting and segregation;
- Cutting and crushing (hammer milling and granulation) of waste to reduce its size;
- Screening and automated sorting of waste to separate different fractions;
- Bagging, baling or bulking of waste to facilitate transport;
- Loading and transfer of bagged, baled or loose metals onto articulated or hooklift vehicles for dispatch to recycling facilities for recovery; and
- Loading and transfer of small volumes of residual waste onto hooklift vehicles for dispatch to recycling facilities for recovery or disposal.

2.6 Waste Inventory

In order to understand the fire risk of the different waste streams that enter these processes, a feedstock inventory has been provided for the various waste types. Table 1 below provides an assessment of each waste type by source of material, identifying the typical and abnormal compositions of those waste types and providing an overall combustion potential of that feedstock based upon the likelihood of abnormal compositions being encountered at site.

Waste Type	Waste Source	Typical Composition	Abnormal Composition	Likelihood	Combustion Potential
Source-Segregated uPVC	Commercial and Industrial or Construction and Demolition (limited Municipal)	Uncontaminated uPVC windows/doors stockpiled awaiting processing	Loads may contain contrary materials, typically glass and metal.	Medium	Low uPVC does not pose a risk of self-ignition. Self-ignition temperature: 454ºC. Risks are limited to external ignition - Flash ignition temperature: uPVC 391ºC, EPDM rubber seals >300º. uPVC is slow to ignite and its chlorine content acts as a fire retardant[1]. Will only burn if exposed to a continuous external

[1] Source: British Plastics Federation http://www.bpf.co.uk/Topics/Fire_Safety.aspx

					heat source. Low volume of EPDM in waste compared with uPVC. Combustion products: uPVC - HCl as well as C, CO, CO_2 and H_2O and $C_xH_yCl_z$ compounds. EPDM: C, CO, HCl and $C_xH_yCl_z$ compounds.
Source-Segregated or Mixed Rigid Plastic Wastes	Commercial and Industrial or Construction and Demolition (limited Municipal)	Uncontaminated plastic waste stockpiled awaiting processing (HDPE, PP, ABS, PC, etc.)	Loads may contain contrary materials, typically glass and metal.	Medium	Medium - Wastes do not pose a risk of self-ignition. Self-ignition temperatures: typically 350ºC to 600ºC. Risks are limited to external ignition. Flash ignition temperature: typically 320ºC to 500ºC. PE, PP, ABS, Nylon – easier to ignite (compared to uPVC) and not self-extinguishing.
Quarantined Wastes	Commercial and Industrial or Construction and Demolition	Hazardous and non-hazardous fractions removed from incoming loads (biodegradable, gas bottles, WEEE, etc.)	Large volumes of flammable wastes.	Medium	Low – properly handled and stored wastes are unlikely to be at risk of self-ignition. For wastes of normal composition, stored for appropriate durations, risks are largely limited to external ignition.
uPVC (Recyclate)	Commercial and Industrial or Construction and Demolition	Granulated uPVC (Bagged)	Loads may contain contrary materials following sorting and processing.	Low	Low - As Source-Segregated uPVC above.
Ferrous and Non-Ferrous Scrap (Recyclate)	Commercial and Industrial or Construction and Demolition	Loose material in stockpiles	Loads may contain contrary materials following sorting and processing.	Low	Low - Wastes of normal composition would not pose a fire risk. Some metals and metal powders burn ferociously when ignited (none-present in normal loads).

EPDM Rubber (Recyclate)	Commercial and Industrial or Construction and Demolition	Granulated (Bagged), baled or loose material in stockpiles	Loads may contain contrary materials following sorting and processing.	Low	Low Risks are limited to external ignition - Flash ignition temperature: EPDM >300º. Not self-extinguishing. Combustion products: EPDM: C, CO, HCl and $C_xH_yCl_z$ compounds.
Rigid Plastics (Recyclate)	Commercial and Industrial or Construction and Demolition	Granulated (Bagged), baled or loose material in stockpiles	Loads may contain contrary materials following sorting and processing.	Low	Medium – As Source-Segregated or Mixed Rigid Plastic Wastes.
Pre-Sort Waste Fraction Awaiting Further Processing to Recover Recyclates	Commercial and Industrial or Construction and Demolition	Non-hazardous mixed fraction from pre-sorting operation (contains inert and non-hazardous fines, rubber, plastics, wood, metal, paper, cardboard, etc.).	Loads may contain contrary materials e.g. organic wastes	Low	Low – properly processed, handled and stored wastes are unlikely to be at risk of self-ignition. For wastes of normal composition, stored for appropriate durations, risks are largely limited to external ignition.
Process Fines	Fines from granulation of plastics or, screening of pre-sort waste fraction	Non-hazardous mixed fraction from mechanical processing (contains inert and non-hazardous fines, rubber, plastics, wood, metal, paper, cardboard, etc.).	Loads may contain contrary materials e.g. organic wastes	Low	Low – properly handled and stored wastes are unlikely to be at risk of self-ignition. For wastes of normal composition, stored for appropriate durations, risks are largely limited to external ignition.
Residual Waste	Post-sort residue or office/ canteen waste	Residual, non-recyclable fraction of mixed waste.	Stockpiles may contain organic fractions.	Low	Low – properly processed, handled and stored wastes are unlikely to be at risk of self-ignition. For wastes of normal composition, stored for appropriate durations, risks are largely limited to external ignition.

Table 1. Assessment of Combustion Potential from Feedstock Inventory

The facility will have the following maximum tonnages on-site at any one time and storage times for waste as follows:

Material	Tonnes	Storage Time
Incoming Unprocessed Wastes (source segregated uPVC and sources segregated/mixed rigid plastics)	100 Tonnes	48 hours
Quarantined Wastes	10 Tonnes	1 month
Processed Recyclates (uPVC granulate, Ferrous and Non-Ferrous Scrap, EPDM Rubber, Rigid Plastics)	500 Tonnes	3 months
Pre-Sort Waste Fraction Awaiting Further Processing to Recover Recyclates	500 Tonnes	6 months
Process Fines	100 Tonnes	3 months
Residual Waste	200 Tonnes	6 months

Table 2. Storage amounts and durations

2.7 Other Materials

Fire Prevention and Mitigation Plan Guidance – Waste (Version 1, May 2016) does not apply to the following wastes:

- Flammable (flashpoint of 60ºc or lower)
- Combustible liquids or gases
- Hazardous Waste
- Dangerous Substances stored under the Control of Major Accident Hazards Regulations

This FPMP has however considered these materials below due to their potential to cause fire at the facility.

Storage of large quantities of flammable liquids, combustible liquids or gases, hazardous waste or dangerous substances does not take place within the facility. Plant and vehicles on-site hold small quantities of fuel in tanks. Reserves of fuel are stored by the company in bunded tanks.

There may be incidental quantities of these materials as contamination on incoming waste, but at concentrations that are unlikely to cause significant harm. Routine sampling for the presence of these materials is not carried out.

3 CAUSES OF FIRES, PREVENTATIVE MEASURES AND POTENTIAL IMPACTS

3.1 Fire Prevention

For a fire to start it is necessary to have fuel, a source of ignition (heat) and oxygen. If any one of the components of the fire triangle is missing, a fire cannot start. Taking measures to avoid the three coming together will reduce the chances of a fire occurring.

3.2 Causes of Fires

The following potential causes of fires have been identified from a risk assessment of the site.

3.2.1 Arson or Vandalism

The risk of fire from Arson or Vandalism has been assessed as medium. The following mitigation measures will be implemented to reduce the risk to low:

- Provision of a secure 2.4m metre high fencing system around the entire perimeter of the site.
- Daily/Weekly Inspection programme to ensure no breaches in the external fencing.
- CCTV installed to monitor site out of hours by a 3rd party security company.

In addition, the following general mitigation measures will be will be implemented.

- All wastes will be kept within the storage area or locked buildings in accordance with section 6 of this Fire Prevention Plan.
- A Fire Marshall will carry out end of shift inspections to ensure no heat or smoke is present within the storage areas.
- Fire water containment equipment will be available on-site to control run-off in the event of a fire.
- Staff will be trained in fire prevention/management and emergency procedures will be in place to deal with any fire on-site.

3.2.2 Discarded Smoking Materials

The risk of fire from smoking materials has been assessed as medium. The following mitigation measures will be implemented to reduce the risk to low:

- The site operates a strict no smoking policy, with the only permitted smoking outside of the main entrance gates off-site.
- Cigarette disposal bins to be provided in smoking area outside of the main entrance gates to ensure all discarded smoking materials are kept off-site.
- General mitigation measures as detailed in 3.2.1.

3.2.3 Hot Exhausts

Plant and equipment with exhausts are largely moving and handling equipment (telehandlers, loading shovels, etc.). The risk of fire from hot exhausts has been assessed as medium. The following mitigation measures will be implemented to reduce the risk to low:

- Where possible all loading of plant or equipment will take place away from the exhaust system, this is to reduce the amount of combustible material that can be dropped in the area of the exhaust system.
- All exhaust systems are to be checked and cleared of any waste at the end of each shift.
- Vehicles should be parked such that the waste is a distance of at least 6 metres from the exhaust outlets.

- All exhaust systems will be checked daily as part of the Driver's Inspection routine to ensure they are functioning correctly.
- General mitigation measures as detailed in 3.2.1.

3.2.4 Plant or Equipment Failure

Plant and equipment on-site comprises moving and handling equipment (telehandlers, cranes, etc.), processing equipment (in direct contact with waste during normal operation) and lighting equipment.

Temporary plant is infrequently brought to site so only risk when this is present and no more elevated than on-site plant.

The following mitigation measures will be implemented to reduce the risk to low:

- All plant and equipment to be serviced and maintained as per the manufacturers' requirements to ensure reliability and to reduce the possibility of failure. This includes the maintenance of any fire extinguishers fitted to plant and equipment.
- Daily maintenance inspections are to be carried out by trained plant operatives with any and all defects being reported by no later than the end of the working day. Should the daily inspection locate a serious defect the plant or equipment will not be put in to service and will be quarantined in the plant parking area until the defect has been rectified.
- All plant to be located/parked at the end of shift a minimum of 6 metres from any waste stockpiles. Where the plant is static or cannot be moved readily then the plant must be cleaned down to ensure no potential combustible waste in and around the item of plant or equipment.
- Provisions are in place to secure back-up plant and equipment to ensure failed plant or equipment can be replaced within a reasonable timescale. This will allow the operations to continue safely and without increasing the risk of fire.
- General mitigation measures as detailed in 3.2.1.

3.2.5 Electrical Faults

The risk of fire from electrical faults has been assessed as medium. The following mitigation measures will be implemented to reduce the risk to low:

- All electrical cables will be tested and isolated prior to the start of operations.
- The use of mobile power tools and power supplies will be limited to essential maintenance only.
- All electrical equipment will be PAT tested where required to ensure they are compliant and safe to use.
- Firefighting equipment suitable for electrical fires will be available on site at all times.
- All electrical equipment will be inspected on a daily basis for the build-up of dust that could cause sparking between electrodes and lead to a fire, or explosion. Equipment will be cleaned as required to remove dust build-up.
- Extraction equipment will be inspected on a daily basis to ensure it is working effectively and maintained (filters cleaned, preventative maintenance, etc.) in accordance with a written schedule of maintenance.
- The internal compartments/components of electrical equipment will be inspected on at least a monthly basis and cleaned as required to ensure that dust is not allowed to accumulate leading to short-circuiting or sparking between electrodes and lead to a fire, or explosion.
- General mitigation measures as detailed in 3.2.1.

3.2.6 Neighbouring Site Activities

Adjacent sites are a waste management and aggregates processing facility. Sites separated by >50m and the Tenant Canal. Activities may cause fire risk – fuels potentially explosive, combustible wastes stored on Waste Management facility (paper/cardboard, RDF, plastics, textiles, etc.), other wastes non-combustible, plant located some distance from waste storage areas. Proper site management will minimise risk.

Fire risks are limited to wind-blown hot/burning particles from a significant fire event at the Waste management Facility. In the event of such a fire the following steps will be taken:

- Staff to remain vigilant for smoke from neighbouring sites and alert Fire Marshall if fire suspected at neighbouring sites.
- Fire Marshall will advise staff to maintain increased vigilance for secondary fires; and
- Firefighting equipment will be mobilised to specific areas if any elevated risk is identified.

3.2.7 Naked Lights

Refer to section 3.2.2 for information relating to Discarded Smoking Materials and section 3.2.10 for Hot Works.

No other naked flame sources (e.g. gas boilers or other equipment) are present on-site.

The only other potentially elevated temperature source identified for consideration is electric lighting for which the following measures will be taken:

- Electric light bulbs will be shielded;
- Conventional industrial lighting will be replaced by LED lighting at the end of its useful life;
- The Site Manager will conduct a monthly H&S walkover to check the condition of light shields.

3.2.8 Reactions between Incompatible Materials

As the materials handled at the facility are predominantly from Construction and Demolition and Commercial and Industrial sources (not production wastes). Generally accepted materials are unreactive (uPVC, EPDM and rigid plastics). The risk of reactions between incompatible materials has been identified as Low. Whilst acceptable without further mitigation, the following measures will be implemented to reduce the risk to negligible:

- Robust waste acceptance and inspection procedures.
- Should any material be discovered that is likely to cause a reaction with other wastes this would be removed from any potential combustible materials and placed in quarantine.
- General mitigation measures as detailed in 3.2.1.

3.2.9 Hot Loads Deposited at Site

Considering the wastes received on-site:

- No ash or thermal by-products are accepted on-site.
- uPVC is slow to ignite and its chlorine content acts as a fire retardant. PE, PP, ABS, Nylon are easier to ignite (compared to uPVC) and not self-extinguishing, although the volumes accepted, processed and stored onsite smaller.

As a consequence, the risk of fire from Hot Loads being deposited at site has been assessed as low. Whilst acceptable without further mitigation, the following measures will be implemented:

- Firefighting equipment including fire extinguishers and inert materials to smother a fire will be available at all times for the management of hot loads.
- The Weighbridge operator is to carry out an inspection to ensure no heat or smoke is present within the load. A secondary inspection should be made on tipping.
- If the load is hot, the Site Manager must establish why it is hot, and whether any special precautions need to be taken.
- The load must be directed to the Emergency/Quarantine Area where it can be extinguished.
- If a load is to be tipped in order to extinguish the fire this must only done within the Emergency/Quarantine Area and as directed by the Site Manager (or responsible person). This site is unable to comply with NRW's guidance for the Emergency/Quarantine Area to be concrete surfaced and to have a 10m clear perimeter around it (the identified area has an 8m perimeter and is asphalt surfaced). Wherever possible (and safe to do so) extinguishing the load (by quenching or smothering) within the container in which it arrives is the preferred option.
- If drivers or site operators have any doubts about the suitability of the Emergency/Quarantine Area, they should raise them before offloading the vehicle.
- Manage/quench the load to reduce heat if excessively hot.
- Emergency services must be called immediately should the site staff be unable to manage the hot load.
- A site Fire Marshall should be present during all hot load management to ensure full compliance with any instructions from the site management. The Fire Marshall will inspect the area after extinguishing of the hot loads to ensure no heat sources or fires are present. Regardless of the outcome of this inspection, the area where the hot load was tipped will be dowsed with water to minimise the risk of secondary fires.
- A hot load **SHOULD NOT** be allowed to leave site.
- General mitigation measures as detailed in 3.2.1.

3.2.10 Hot Works

The risk of fire from Hot Works has been assessed as low. Whilst acceptable without further mitigation, the following measures will be implemented:

- Where possible all hot works must be carried out away from the waste processing operations or away from any stockpiles of waste that have the potential to cause fire.
- If hot works must be carried out near combustible materials then a minimum of 6 metres must be maintained at all times during the hot works.
- Fire risks from hot works to be covered in site induction;
- All hot works must be carried out under permit to work.
- A site Fire Marshall will be present during all hot works to ensure full compliance with any permit issued under hot works rules. The Fire Marshall will inspect the area after the completion of the hot works to ensure no heat sources or fires are present.
- The area of the hot works will be dowsed with water to minimise risk of fires.
- Firefighting equipment including fire extinguishers will be available at all times during hot works.

- General mitigation measures as detailed in 3.2.1.

3.2.11 Open Burning

The risk of fire from Open Burning has been assessed as negligible. Whilst acceptable without further mitigation, the following measures will be implemented:

- The burning of wastes of any kind is strictly prohibited on-site.
- Site rules and induction training to raise staff awareness.
- Disciplinary procedure to make specific reference to burning of waste – gross misconduct.
- General mitigation measures as detailed in 3.2.1.

3.2.12 Sparks from Loading Buckets

The risk of fire from sparks from loading buckets has been assessed as negligible. Whilst acceptable without further mitigation, the following measures will be implemented:

- The dragging/pushing of buckets along concrete surfaces should be kept to a minimum.
- The site yard brush should be used to maintain site cleanliness rather than scraping with a loading bucket.
- All loading buckets should be inspected daily as part of Driver's Inspection routine to ensure they are flat and level to avoid any uneven contact with possible surfaces that could lead to sparking.
- The use of rubber across the bottom edge of loading shovels would be ineffective as any strip would be damaged or removed during the handling of wastes. Alternative methods of spark reduction will be investigated should sparking become a noted problem during the operation of the equipment. All shovel operators will be instructed to monitor their buckets and report any sparks.
- General mitigation measures as detailed in 3.2.1.

3.2.13 Damaged or Exposed Electrical Cables

The risk of fire from damaged or exposed electrical cables has been assessed as negligible. Whilst acceptable without further mitigation, the following measures will be implemented:

- All electrical cables will be isolated before any works can begin.
- The use of mobile power tools and power supplies will be limited to essential maintenance only, this will reduce the possibility of damage to electrical equipment and cables.
- An annual inspection of all electrical systems will be carried out to ensure that all systems are sound and safe.
- Annual PAT testing will be carried out on all relevant equipment to ensure they are compliant and safe to use.
- Firefighting equipment suitable for electrical fires will be available in suitable locations around the site.
- General mitigation measures as detailed in 3.2.1.

3.2.14 Industrial Heaters

The site does not use industrial heating of any kind within areas used to store or treat waste.

3.2.15 Self-Ignition

Self-combustion in accepted materials is very unlikely due to nature of materials and temperatures required. The following mitigation measures will be implemented to reduce the risk to low:

- Robust waste acceptance procedures will ensure that waste received meets the site's waste acceptance criteria and does not represent any elevated self-ignition risk.
- Site Manager/Fire Marshall to carry out end of shift inspections to ensure no heat or smoke is present within the waste storage areas.
- General mitigation measures as detailed in 3.2.1.

3.3 Potential Impacts of Fire

3.3.1 Potential Impacts of Fire Incidents on Receptors

Fires involving combustible materials can cause significant harm to people and the environment as a result of:

- combustion products: even those from non-toxic materials release airborne pollutants which can cause both short and long term effects on human health and the environment;
- fire water run-off: this can transport pollutants into drainage systems, rivers and lakes, groundwater and soil, threatening water supplies, public health, wildlife and recreational use;
- thermal radiation: which harms people and the environment and can lead to fire spread;
- hazardous waste: which can be created by the fire and has important ramifications for fire fighting
- explosions and projectiles: which can harm people and spread the fire to unaffected areas
- Harm to people and property: fire can threaten life and cause property damage

The impact of a fire may be both immediate and long lasting and can present a significant burden for the Fire and Rescue Services, other agencies and the public – including the risk of death, and harm to public health.

3.3.2 Receptors

In considering the potential Impacts of Waste Fires we have reviewed the EA document "The Impact of Waste Fires", Howard Davidson, 27 November 2013 and also considered the location of local receptors including critical infrastructure such as schools, hospitals, residential areas, workplaces, protected habitats, rivers and coastal waters within a 1km radius of the site (Drawing 10937-000-F in **MPP7**). These are considered likely to be at greatest risk of impact in the event of a fire, predominantly as a result of smoke plumes or fire water run-off, but also from thermal radiation and hazardous residues.

The following receptors are located within 1km of the boundary of the site.

Receptor Reference	Type	Distance from Site Boundary	Direction
O1	Groundwater	0m	Independent
O2	Freight/Passenger Rail Line	0m	Passes Through Site
E1	Tenant Canal	2m	East
O3	Pumping Station	6m	North
O4	Freight Rail Line	18m	West
O5	A465 Dual Carriageway	69m	West
C1	Waste Transfer Station/MRF	95m	North East

C2	Asphalt Plant (Weighbridge Office)	100m	South East
C3	Petrol Station	116m	North West
C4	Fast Food Restaurant	117m	North West
R1	Residential Property	122m	South
E2	River Neath	141m	East
R2	Multiple Residential Properties (Pen-yr-Heol	152m – 1000m	North West
C5	Metal Recycling Facility	187m	South East
R3	Residential Property	197m	North
R4	Multiple Residential Properties (Pentreffynnon)	218m – 1000m	North
C6	Waste Transfer Station/ Green Waste Composting (Vacant)	315m	South
C8	Multiple Commercial/ Industrial Properties	595m	North
O6	M4 Motorway	622m	South West
C8	Multiple Commercial/ Industrial Properties	670m – 1000m	South West
R7	Residential Property	737m	South West
R5	Residential Property	715m	South West
R6	Residential Property	718m	South West
R8	Residential Property	801m	South West

Table 3. Receptors within 1km of the site boundary

3.3.3 Toxic Smoke Plumes – Air Quality Impacts

Air emissions from uncontrolled waste fires have shown to be more toxic than those from controlled combustion sources (i.e., waste to energy facilities, cement kilns, etc.). These emissions contain contaminants that may include: oxides of nitrogen or Sulphur (NO_x, SO_x), Carbon Monoxide (CO), volatile organic compounds (VOCs) and various metal compounds. In the case of plastic wastes such as uPVC, toxic and irritating compounds including HCl can be released. Depending on the length and degree of exposure, these emissions may cause irritation of the skin, eyes, mucous membranes and cause respiratory effects.

As the smoke plume is most likely to impact the local residents, local shops and local work places the quick management and control of a fire is an important factor in minimising impacts on receptors. This FPMP provides details and procedures for achieving this.

Wind direction and speed will play a significant role in the dispersion of smoke plumes, with rainfall also playing a lesser role by removing airborne particles. To manage the impacts of smoke once released from a fire it is essential that information regarding the direction of the smoke released is identified and that the plume is monitored to establish its extent and likely dispersion radius.

3.3.3.1 Wind Direction and Rainfall

The pathway by which plumes may impact upon receptor locations is a result of atmospheric dispersion. In general, high wind speeds lead to a plume being more rapidly dispersed and diluted due to turbulence, and low wind speeds inhibit dispersion.

A wind rose based on 10 years data for Mumbles Head observation station located approximately 6.5km to the south west of the site (at an elevation of 32m ASML) is presented in Figure 1 below. It is evident that winds from

the west to south west predominate in the area and winds from the south, north and east tend to be infrequent and characterised by light winds. Low wind speeds (<3.1m/s) occur for 18.8% of time each year.

Rainfall data obtained for the Mumbles Head observation station (1981 – 2010 averages) from the Meteorological Office website indicates that the average number of rainfall days per year is 147.9 (days with rainfall >1mm) i.e. occurring on approximately 40.5% of days throughout the year. Rainy days were more prevalent between October and January. The map showing annual average for days greater than 0.2mm shows that the site received an average of 180-200 days of rainfall each year between 1981 and 2010.On average the site receives 998.9mm of rainfall per annum.

3.3.3.2 Potential Impacts and Response Measures

Potential smoke impacts could be experienced by receptors located within 1km of the boundary of the site, with effects diminishing with distance. Receptors with 1km of the site are highlighted in Drawing 10937- 000- F in **MPP7**.

Based on the windrow presented in Figure 1 the prevailing wind direction shows a strong tendency to come from the west to south west. As a consequence, it is more likely that any fire effects will be experienced by receptors located to the east to north east of the site (albeit the wind direction may be in a different direction at the time of a fire).

The businesses most likely to be affected in the event of a fire are the inert waste recycling, C&D/C&I WTS and MRF, and RDF manufacturing facility (Receptor C1 - Derwen Recycling Ltd – an), the Asphalt Plant (Receptor C2 - Aggregate Industries Ltd), Metal Recycling Facility (Receptor C5 - Sims) and the currently vacant unit (C6). In the event of a fire, and depending on its scale and the prevailing wind direction, it is likely that the Emergency Service will close the access road to Neath Abbey Wharf, either at its junction with the Neath Abbey Industrial Estate or after the entrance to the Waste Transfer Station/MRF (Receptor C1). This will cause a loss of business to the Receptors affected by the closure. Measures to minimise the impact of fire on people present within this premises (and all premises within 500m of the site) has been considered as part of the fire emergency response. Specific response measures for nearby receptors are detailed in the Emergency Fire Response procedure presented in section 6 (and specifically Table 6).

There are no other permanent receptors to the east/north east of the site.

The pumping station to the north of the site is not permanently staffed and people are only infrequently present for maintenance operations. In the event of a fire the Operator would confirm whether the pumping station was occupied and advise anyone present to evacuate the site to a safe distance. Due to its proximity to the site, Welsh Water would be contacted at the earliest opportunity to make them aware of the fire such that they can liaise with the emergency services should precautionary or preventative measures be necessary to avoid environmental pollution from the pumping station. The pumping station is located at an elevation of 1.7m above the low point of the northern yard (the bunded south eastern boundary of the site) and 1.3m above the height of the access road separating the northern and southern yards. Assuming the site bunding is maintained as existing, fire water within the northern yard would escape across the access road to the southern yard before reaching a level where it would inundate the pumping station.

Visitors to the Tenant Canal are normally infrequent and for short-durations. In the event of a fire, the Operator, in consultation with the F&RS, would take steps to ensure visitors are stopped from using the tow path or canal until safe to do so (the canal waters are rarely trafficked). This would be through the erection of a barrier on the towpath in either direction of the site and/or a member of staff being present to provide information.

Were it not suitably contained, fire water could escape the site and lead to contamination of the canal. Measures to contain fire water are detailed in section 8.

Depending on the wind direction and the need for the closure of the A465 the Petrol Station (Receptor C3) and Fast Food Restaurant (Receptor C4) may suffer a loss of business.

Users of nearby roads may be affected if the Emergency Services consider it necessary to close roads, or there is travel disruption caused by slowing traffic, rerouting of HGVs destined for local businesses, etc. This may result in minor impacts on businesses and individuals outside of the local area.

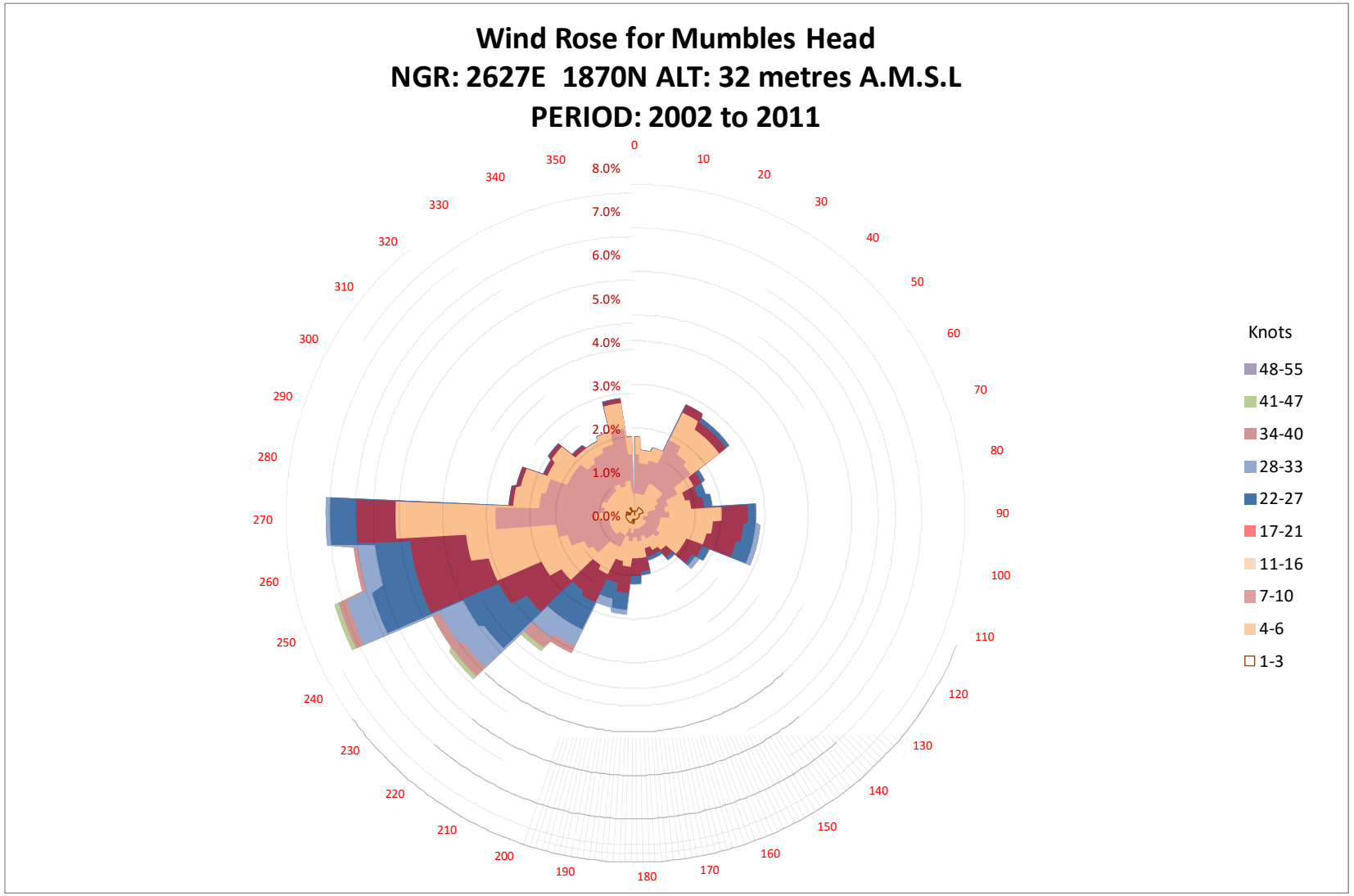

Figure 1. Historic Wind Frequency for Mumbles Head observation station.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Rainfall (mm)	95.5	67.0	72.9	58.5	62.8	63.8	71.9	83.9	77.4	123.1	112.1	110.3	999.2
Days of Rainfall >1mm	15.0	11.0	13.5	10.6	10.3	9.9	10.1	11.2	11.4	15.4	15.0	14.4	147.9

Table 4. Rainfall data 1981-2010 average for Mumbles Head observation station.

3.3.4 Fire Water Run-Off

Fire water run-off has the potential to contain harmful combustion by-products, or un-combusted waste materials washed from other areas of the site. The volume of water involved and the subsequent dilution of these compounds will vary based on the scale and nature of any fire. Minimising potential impacts to the environment (notably via surface and/or groundwater pollution) and to local infrastructure is a key consideration of this FPMP.

Currently fire water would reach a maximum depth of approximately 0.4m at the lowest point of the northern yard boundary before it started to flow across the roadway under the railway bridge and into the southern yard area. The existing 0.5m high bund along the south eastern boundary of the northern yard (and terminating at the railway embankment) is sufficient to stop fire water from entering the Tenant Canal. Assuming a maximum depth of 0.4m of water can be entrained by the bund before it flowed into the southern yard, approximately 150m3 of fire water would be stored and be available for recirculation onto a fire.

Fire water flowing across the roadway and entering the southern yard would flow into the drainage system and ultimately be discharged to combined sewer. In the event of a fire and the drainage system in the southern yard being overwhelmed by fire water, the water levels would rise and at a depth of 0.15m would flow past the eastern side of the processing building and would exit the site at the point where the retaining wall terminates. At this point a pathway exists for fire water to reach the adjacent canal via a drainage channel running parallel with the site boundary. To stop fire water escaping the site a sand bag wall between the building and retaining wall forms a barrier to the fire water escaping. Approximately 130m3 of fire water can be contained before levels would rise to the point where fire water would begin to flow into the processing building.

Were a fire to occur in the southern yard, fire water management would similarly flow into the existing drainage system and be discharged to combined sewer.

3.3.4.1 Existing Infrastructure - Site Areas, Surfacing and Drainage

Drawing 10937- 000- D in **MPP7** provide details of the drainage systems within the site.

Northern Yard

The northern yard is impermeably surfaced (200mm thick asphalt on crushed stone (75mm to dust) laid to a minimum depth of 200mm). Surface water flows by gravity towards the south east of the yard (the staff/visitor parking area) where it pools against an impermeable bund wall, behind which is a 0.5m high soil bund that separates the site from the Tenant Canal. Surface water is removed and tankered away from site for treatment at a suitably licensed waste management facility.

There is no drainage system within the buildings. A fall on the impermeable surface channels liquid by gravity to the centre of the pad where it can be manually removed.

Roof water from the buildings is either directed through gutters and downpipes, or falls from roofs onto the surfaced yard from where it falls by gravity towards the south eastern corner and is captured within the bund wall described above.

Foul water from the welfare facilities is discharged to combined sewer.

Southern Yard

The southern yard is impermeably surfaced (200mm thick concrete bedded on crushed stone (75mm to dust) laid to a minimum depth of 200mm). The yard is graded such that surface run-off falls towards linear cut-off drains running in front and to the side of the existing processing building. A grip located approximately half way up the yard on the eastern side assists with moderating and directing the flow of water towards the linear drains. Surface run-off entering the linear drains passes into a silt trap from where it is transferred by underground pipe to the northern yard where it discharges to combined sewer.

The yard is enclosed by a brickwork retaining wall and bund on both the western boundary with the railway embankment and the eastern boundary with the Tenant Canal. The retaining wall along the boundary with Tenant Canal terminates at the end of the impermeable surface (that finishes approximately half way along the processing building). A sand bag wall between the building and retaining wall completes the site bunding. The rear of the site is separated from the canal by a 4m high bund.

There is no drainage system within the processing building. A fall on the impermeable surface channels liquid by gravity to the centre of the pad where it can be manually removed.

Roof water from the Processing Building is directed through gutters and downpipes towards the linear surface drains from where it passes into a silt trap before being discharged to combined sewer.

This drainage is currently in place. Drawing 10937 – 000 D has been updated to clarify the design of the current site drainage.

Connecting Road

The staff/visitor car park and road linking the two yards are impermeably surfaced (200mm thick concrete bedded on crushed stone (75mm to dust) laid to a minimum depth of 200mm). The connecting road is graded such that surface run-off falls towards the southern yard where it follows a similar path as that described above.

3.3.4.2 Proposed Changes to Existing Drainage

The Operator has made enquiries to Welsh Water to enable the discharge of surface run-off from the northern yard area to combined sewer. Subject to approval from Welsh Water, it is anticipated that the new drainage will be in place within the next 6-12 months. On completion of detailed design and approval from Welsh Water and the site owner the Operator will agree a schedule for implementation of the above changes with NRW.

3.3.4.3 Emergency Response

The emergency response plan included in section 6 takes steps to contain fire water within the site boundary by using aggregate stockpiles and sandbags to rapidly reinforce the existing boundary and stop fire water from exiting the site and reaching the Tennant Canal. Contained water would be recirculated onto the fire and tankered away from site once the fire had been extinguished.

3.3.5 Thermal Radiation

Heat from a fire may burn human or fauna/flora receptors or be absorbed by other combustible materials causing them to heat up and ignite. The main principle of radiation is: the closer the material is to the fire the more radiated heat it will receive.

The emergency response plan included in section 6 takes steps to remove people and objects to a safe distance from the fire and gives consideration to nearby land usage and the potential for secondary fires as a result of thermal radiation.

3.3.6 Combustion Residues

Residues from fires have the potential to cause environmental damage if not correctly managed following a fire. Residues in some circumstances may be considered hazardous and require specific management controls to ensure recovery or disposal is undertaken to minimise any potential for environmental damage.

As part of this FPMP the impact of residual wastes from waste fire has also been considered and is covered in more detail in section 9. In general residues will be sampled and characterised before being removed from site for recovery/disposal at suitably licensed facilities.

4 STORAGE AND SEPARATION OF WASTES

As indicated previously, this Fire Prevention Plan does not consider the storage and treatment of wastes other than waste plastics and should the operator wish to accept wastes other than those best described as plastics, this Fire Prevention Plan will be updated to reflect the storage and treatment required for these materials and any changes agreed with Natural Resources Wales prior to these wastes being accepted on-site.

4.1 Stockpile Types

Within this section materials stored on-site have been considered to be combustible or non-combustible. Non-combustible wastes include inert wastes (aggregates, soils and stones, gypsum, etc.), metals, glass and there storage is not considered further within this FPMP. Combustible materials include both bagged, baled and loose materials, and include materials such as mixed waste, cardboard, paper, plastics, wood, green and WEEE.

4.2 Stockpile Sizes and Separation

Drawing 10937 – 000 – E in **MPP7** presents the existing storage plan for the site.

Storage onsite will to comply with NRW's latest guidance; Fire Prevention and Mitigation Plan Guidance – Waste Version 1.0, May 2016). This includes the introduction of maximum stack sizes and separation distances between stacks (as shown in Table 5) to reduce the potential for any fire spreading into nearby stockpiles and allowing access around the stockpiles by the emergency services.

In the northern yard there is an existing concrete block push wall along part of the boundary where pre-sort materials (wastes to be subject to screening and picking to recover recyclable wastes) are stored. This wall is located 2m from the boundary fence and extended as necessary to contain the pre-sort waste in designated storage areas. Perpendicular concrete walls will be installed as necessary to create bays and 6m wide fire breaks. Similarly, a bay 2m from the boundary encloses the unprocessed uPVC waste. Stockpile heights will be maintained below the height of the retaining wall (or to a maximum height shown in Table 5). The 2m clear access between the storage bays and boundary will allow any waste inadvertently deposited over the back wall during waste handling to be accessed and cleared away from the site boundary.

Bagged waste will be placed against the existing retaining walls where they are present, or at least 2m from any boundary fence where no retaining wall is present.

In general, loose waste will be stored in the northern yard area and bagged waste in the southern yard area.

Primary Materials (description)	Max. Height (m)	Max. Length/ width (m)	Max. Volume (m)	Max. Area (m)	Min. Separation (m)
Plastic, rubber and other materials (unprocessed waste)	5	20	450	235	6
Plastic, rubber and other materials (pre-sort waste)	5	20	450	235	6
Plastic, rubber and other materials (recyclates)	5	20	450	235	6
Plastic, rubber and other materials (process fines)	5	20	450	235	6

Combustible materials (residual waste)	5	20	450	235	6

Table 5. Maximum stack sizes and minimum separation distances

4.3 Storage Durations

Storage durations are as those shown in Table 2.

4.4 Bagged Wastes

Bagged waste will be stored up to 2 bags high in accordance with the dimensions shown in Table 5.

4.5 Baled Wastes

Any bales produced on-site will be stored in stacks of dimensions shown in Table 5.

Square or rectangular bales will be stored by terracing/use of a pyramid stacking system. Pyramid/terraced storage of bales is intended to increase stack stability and lessen the risk of a bale falling during a fire resulting in fire spread. This structure also has the benefit of changing the angle of the planes of radiated heat. A schematic drawing showing the bale stacking is shown in Figure 2.

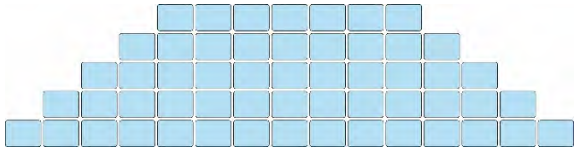

Figure 2. Storage of square/rectangular bales

5 FIRE DETECTION AND SUPPRESSION SYSTEMS

5.1 Fire Detection Systems

5.1.1 Site Inspections

The Site Manager will carry out site inspections as least twice per day. Visual inspection of the site and bale stacks will be undertaken with a view to identifying evidence of fire or potential fire risks. Any risks will be recorded on the daily inspection sheet, remedial action identified and implemented.

5.1.2 Fire Watch

A fire-watch will be undertaken at the end of each shift. Any risks will be recorded on the daily inspection sheet, concerns logged (e.g. dust from processing operations that could settle onto hot exhausts and engine parts), remedial action identified and implemented.

5.1.3 Automatic Fire Detection Systems

No automatic fire detection systems are present on-site.

5.2 Fire Suppression Systems

The following fire suppression systems are available at the facility.

5.2.1 Portable Fire Extinguishers

The facility will be equipped with fire extinguishers of a type, size, location, and number as recommended by the local fire service. Each fire extinguisher will be fully charged and ready for use at all times. The site accident/incident plan and on-site signage indicate the location of these appliances.

The following types of fire extinguisher will be available:

- Dry Powder Fire Extinguisher
- Water Fire Extinguisher
- Carbon Dioxide
- Foam

Each extinguisher will be inspected on an annual basis and recharged as necessary. A qualified service company will perform these inspections, and all extinguishers will display a current inspection tag. Inspection and recharging will be performed following each use.

All operating plant that is used to handle the waste is also fitted with Fire Extinguishers which can be used to suppress small fires should the operator or staff notice them.

5.2.2 Inert Stockpiles

Soil and other inert materials that are free of organic materials is helpful in extinguishing fires. Soil absorbs heat and suffocates a fire and can be used as a useful suppressant when fighting waste fires. Approximately 120m^3 of inert soil and stone material is stockpiled adjacent to the railway embankment for use as a fire suppressant.

5.3 On-Site Storage of Water

There is no on-site storage of fire water, although given the proximity of the site to the Tenant Canal SWF&RS have indicated that they would deploy pumps to extract sufficient water to manage any on-site fire.

5.4 Dedicated Emergency/Quarantine Area

There is insufficient space within the boundary of the site to provide a dedicated emergency or quarantine area big enough to cope with a major incident, with a clear area of at least 10m around the perimeter. An area has been identified within the site plans that maintains an 8m clearance.

6 EMERGENCY FIRE RESPONSE AND ACTIVATION PLAN IN CASE OF FIRE

6.1 Emergency Fire Response

The following emergency fire plan will be followed when fire or smoke is suspected or discovered.

The sequence of these steps may vary according to the circumstances of the fire emergency, but priority must always be given to the safety of staff and visitors, followed by the prevention of impact on local human or environmental receptors.

In the event of a fire or smoke being detected at any location on the site, the following procedures are to be implemented without delay:

- Upon discovering smoke or fire the alarm must be raised via the site radio/mobile phone call to the Site Manager or Main Office, or by repeated horn blasts and/or shouting to indicate a fire has been discovered.
- The person discovering a fire should inform the Site Manager/Supervisor immediately (or if not immediately contactable a Fire Marshall) and provide an assessment of the situation. The Site Manager/Supervisor must immediately go to the vicinity of the fire to assess the situation and decide upon a course of action.
- The person discovering a fire should then call the fire brigade on ‘’999” providing details of the fire’s location and scale.
- All non-essential persons should be instructed to leave the area and report to the designated site assembly point. Where possible, machine operators are to move their machines to a safe area only returning to assist in the movement of waste at the direction of the senior fire officer.
    - Persons evacuating must
        - obey Fire Marshals’ instructions;
        - ensure others in the vicinity also evacuate;
        - assist any person who needs help, if safe to do so;
        - not stop to collect any personal belongings;
        - proceed directly to the Assembly Point at the entrance to the site; and
        - remain there until officially instructed otherwise.
- The Site Manager/Supervisor is to instruct the weighbridge operator to hold all incoming traffic and await further instructions.
- If safe to do so, the person or persons discovering the fire should seal off the area and fight the fire using appliances provided. Persons with no specific training are not expected to fight a fire, but all staff should familiarise themselves with the location and basic operating principles of the equipment, in case they need to use it. Where safe to do so, the person discovering the fire should delegate tasks to available staff members in relation to fighting or preventing the spread of fires.
- The Site Manager or a designated Fire Marshall will collect the roll call list and confirm the presence of staff and visitors at the assembly point.
- If it is safe to do so, a search of all effective areas of the site will be undertaken by the Site Manager/Supervisor to ensure that everybody has evacuated the site.

- At the earliest opportunity the Site Manager/Supervisor is to confirm all fire water management measures are in place and operating effectively to prevent fire water from exiting the site and reaching the adjacent canal.
- Upon arrival the Site Manager will issue the Emergency services with the site accident plan and the emergency services will assume control of the situation, all instructions/advice given by them will be followed.
- The Site Manager/Supervisor is to advise the Officer in Charge of the emergency services if someone is missing.
- After all occupants are evacuated, and visitors and staff are accounted for, the Site Manager will be responsible for contacting residents and businesses within 250m of the site (in accordance with Table 6), starting with those downwind of the fire to advise them of any particular measures required while the fire in being brought under control (e.g. the evacuation of nearby premises, closing of windows, etc.). Should the Emergency Services consider a wider area should be contacted, or that notifications should be handled by the Emergency Services, site staff should follow the instructions given.
- After all occupants are evacuated, and visitors and staff are accounted for, wait for the 'all–clear' from the fire brigade before returning staff to any affected area.
- The Site Manager is responsible for ensuring the conditions that led to the fire are investigated (in association with the Fire Service and South Wales Police as appropriate), plant is safely recommissioned, accident plans and management systems documents are reviewed and improved, training requirements for staff personnel are reviewed and that any remedial measures (including further fire reduction measures and new procedures) are implemented.

6.2 Vehicle Fires

If a fire occurs on a vehicle or piece of equipment, the equipment operator will bring the vehicle or equipment to a safe stop. If safety of personnel will allow, the vehicle will be parked away from fuel supplies, uncovered solid wastes, and other vehicles. The engine will be shut off and the brake engaged to prevent movement of the vehicle or piece of equipment.

6.3 Firefighting Methods

Firefighting methods for burning solid waste include smothering the waste, separating burning material from other waste, or spraying with water from the on-site appliance or retention storage tank.

The Site Supervisor or available staff may attempt to extinguish a fire using the correct extinguisher if:

- It is safe to do so;
- It is a small fire that can be managed by the on-site staff (e.g. a smouldering waste, overheating/smouldering electrical equipment, small isolated area of waste);
- Staff and Visitors have been moved from the danger area and an evacuation has commenced;
- The fire brigade has been called; and,
- The person using the extinguisher or fire appliance has been trained in their use.

6.4 Fire Marshalls

The Site Manager (and several deputies) will be trained as Fire Marshalls. They will also be responsible for implementing response plans and co-ordinating with the emergency services (and NRW) in the event of a fire.

6.5 Staff Training

Training of on-site personnel in firefighting techniques, fire prevention, response, and the fire protection aspects of the site will be provided, by established professionals, on an annual basis. Personnel will be familiar with the use and limitations of firefighting equipment available onsite. Records of this training will be included in the operating record for the facility.

6.6 Notification of Fires to NRW

After any fire related to waste management activities that cannot be extinguished within 10 minutes of discovery occurs, NRW will be notified. The notification will include:

- Contacting by telephone as soon as possible, but no later than 4 hours following fire discovery, and
- Providing a written description of the cause and extent of the fire and the resulting fire response within 14 days of fire detection.

The facility will provide NRW with as much information as possible regarding the fire and fire-fighting efforts, as soon as possible after the fire occurs.

The fire prevention and fire control procedures for the facility will be revisited following the occurrence of a significant fire to determine if modifications are warranted.

Receptor Reference	Type	Distance from Site Boundary	Direction	Impact	Likelihood	Response Measures
O1	Groundwater	0m	Independent	The site is located on an aquifer. Possible groundwater contamination if fire water infiltrates.	All waste stored on impermeable surface with sealed drainage. Long-term exposure of asphalt surfaces to fire may degrade their impermeability. Fire water containment measures in place.	Monitor effectiveness of fire water containment measures in the event of a fire.
O2	Freight/ Passenger Rail Line	0m	Passes Through	Short-term potential exposure if smoke enters driver/passenger's compartment. Possible obscuring of visibility. Users of railway lines may be affected if the Emergency Services consider it necessary to close the line, or there is travel disruption caused by reduced speeds, rerouting of trains, etc. This may result in minor impacts on businesses and individuals outside of the local area.	Not normally in line with prevailing winds, but proximity makes exposure likely.	Contact rail operator as soon as practical after fire discovered and advise precautions are taken in the event of a significant fire and extensive plume blowing towards receptor.
E1	Tenant Canal	2m	East	Human receptors using the canal/towpath would be exposed for short periods and as such, the risk of health impacts from exposure are negligible.	Unlikely - visitors to the Tenant Canal are normally infrequent and for short-durations.	The Operator, in consultation with the F&RS, would take steps to ensure visitors are stopped from using the tow path or canal until safe to do so (the canal waters are rarely trafficked). This would be through the erection of a barrier on the towpath in either direction of the site

				Fire water escaping the site could lead to pollution of the canal.	Fire water containment measures minimise risk of pollution.	and/or a member of staff being present to provide information. Monitor effectiveness of fire water containment measures in the event of a fire.
O3	Pumping Station	6m	North	Not permanently staffed and people are only infrequently present for maintenance operations.	Pumping station located 1.7m above the low point of the northern yard. Assuming the site bunding is maintained as existing, fire water within the northern yard would escape across the access road to the southern yard before reaching a level where it would inundate the pumping station. Possible heat radiation risk to pumping station building due to proximity.	Confirm pumping station occupied and advise anyone present to evacuate the site to a safe distance. Contact Welsh Water at the earliest opportunity to make them aware of the fire such that they can liaise with the emergency services should precautionary or preventative measures be necessary to avoid environmental pollution. Maintain watch on building for signs of heating/ignition.
O4	Freight Rail Line	18m	West	Short-term potential exposure if smoke enters driver compartment. Possible obscuring of visibility. Freight users may be affected if the Emergency Services consider it necessary to close the line, or there is travel disruption caused by reduced speeds, rerouting of	Not normally in line with prevailing winds, but proximity makes exposure likely.	Contact rail operator as soon as practical after fire discovered and advise precautions are taken in the event of a significant fire and extensive plume blowing towards receptor.

				trains, etc. This may result in minor impacts on businesses and individuals outside of the local area.		
O5	A465 Dual Carriageway	69m	West	Human receptors using this road would be exposed for short periods and as such, the risk of health impacts from exposure are negligible. The greater hazard is likely to result from a loss of visibility on the dual carriageway, notably in the area of the junction of the A465 with the Neath Abbey Services. Road users may be affected if the Emergency Services consider it necessary to close roads, or there is travel disruption caused by slowing traffic, rerouting of HGVs destined for local businesses, etc. This may result in minor impacts on businesses and individuals outside of the local area.	Not normally in line with prevailing winds.	It is likely that closure of the dual carriageway by the emergency services would be required in the event of a significant fire. Advise emergency services of potential issue when calling 999 if plume is blowing towards the A48.
C1	Waste Transfer Station/MRF	95m	North East	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Depending on its scale and the prevailing wind direction, in the event of a fire it is likely that the Emergency Service will close the access road to Neath Abbey Wharf, either at its junction with the Neath Abbey Industrial Estate or after the entrance to the Waste Transfer Station/MRF (Receptor C1). This will cause a loss of business to the Receptor.	In line with most frequent prevailing winds.	Contact receptor as soon as practical after fire discovered and advise evacuation of the site in event of a significant fire and extensive plume blowing towards receptor. In other circumstances advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.

C2	Asphalt Plant (Weighbridge Office)	100m	South East	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Depending on its scale and the prevailing wind direction, in the event of a fire it is likely that the Emergency Service will close the access road to Neath Abbey Wharf, either at its junction with the Neath Abbey Industrial Estate or after the entrance to the Waste Transfer Station/MRF (Receptor C1). This will cause a loss of business to the Receptor.	In line with most frequent prevailing winds.	Contact receptor as soon as practical after fire discovered and advise evacuation of the site in event of a significant fire and extensive plume blowing towards receptor. In other circumstances advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.
C3	Petrol Station	116m	North West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Depending on the wind direction may suffer a loss of business if closure is necessary.	Not normally in line with prevailing winds.	Contact receptor as soon as practical after fire discovered and advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.
C4	Fast Food Restaurant	117m	North West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Depending on the wind direction may suffer a loss of business if closure is necessary.	Not normally in line with prevailing winds.	Contact receptor as soon as practical after fire discovered and advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.
R1	Residential Property	122m	South	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments.	Not normally in line with prevailing winds.	Contact receptor as soon as practical after fire discovered and advise human receptors to stay indoors with windows closed. Guidance from emergency

						services overrides any internal measures indicated above.
E2	River Neath	141m	East	Possible surface water pollution if fire water reached river.	Site bunded to contain fire water. Tennant canal would receive fire water before it reached the river. Surface water drain passes through site and discharges into River Neath. Inspection covers sealed to stop entry of site surface or fire water.	None. (Normal programme of daily site inspections to confirm inspection covers in place).
R2	Multiple Residential Properties (Pen-yr-Heol	152m – 1000m	North West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminishing with distance due to dispersion.	Not normally in line with prevailing winds.	Seek guidance from emergency services as to whether notification of residents is required and within what radius of the site. Impractical to notify properties individually given manpower available. If emergency services in agreement use local radio to notify residents (most likely through the emergency services themselves).
C5	Metal Recycling Facility	187m	South East	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Depending on its scale and the prevailing wind direction, in the event of a fire it is likely that the Emergency Service will close the access road to Neath Abbey Wharf,	Not normally in line with prevailing winds.	Contact receptor as soon as practical after fire discovered and advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.

				either at its junction with the Neath Abbey Industrial Estate or after the entrance to the Waste Transfer Station/MRF (Receptor C1). This will cause a loss of business to the Receptor.		
R3	Residential Property	197m	North	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments.	Not normally in line with prevailing winds.	Contact receptor as soon as practical after fire discovered and advise human receptors to stay indoors with windows closed. Guidance from emergency services overrides any internal measures indicated above.
R4	Multiple Residential Properties (Pentreffynnon)	218m – 1000m	North	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminishing with distance due to dispersion.	Not normally in line with prevailing winds.	Seek guidance from emergency services as to whether notification of residents is required and within what radius of the site. Impractical to notify properties individually given manpower available. If emergency services in agreement use local radio to notify residents (most likely through the emergency services themselves).
C6	Waste Transfer Station/ Green Waste Composting (Vacant)	315m	South	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion. Depending on its scale and the prevailing wind direction, in the event of a fire it is likely that the Emergency Service will close the access road to Neath Abbey Wharf, either at its junction with the Neath Abbey	Not normally in line with prevailing winds.	Remain vigilant of plume direction and dispersion and follow guidance from emergency services.

				Industrial Estate or after the entrance to the Waste Transfer Station/MRF (Receptor C1). This will cause a loss of business to the Receptor.		
C8	Multiple Commercial/ Industrial Properties	595m	North	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminishing with distance due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.
O5	M4 Motorway	622m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.
C8	Multiple Commercial/ Industrial Properties	670m – 1000m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.
R7	Residential Property	737m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.
R5	Residential Property	715m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.

R6	Residential Property	718m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.
R8	Residential Property	801m	South West	Potential smoke inhalation leading to short-term health problems, exacerbated in people with asthma or other respiratory ailments. Effects diminished due to dispersion.	Not normally in line with prevailing winds.	No specific measures. Follow guidance from emergency services.

Table 6. Potential Impacts and response measures

7 ACCESS AND TRAFFIC MANAGEMENT PLAN FOR EMERGENCY SERVICES

As part of the emergency fire response all vehicles will be removed off site. Similarly all site vehicles/plant and equipment will clear site access routes for unimpeded use by the emergency services.

The site has a dedicated traffic management plan which shows the emergency routes available to the emergency services in case of fire or smoke. This plan will be communicated to the emergency services upon arrival at site.

As part of the overall Environmental Management System for the facility the access and traffic management plan includes the following;

- Dedicated Site Plan showing emergency traffic routes.
- Dedicated Site Plan showing access and egress points.
- Site procedure giving detail instruction of on-site traffic management and the responsible management structure.

8 FIRE WATER RUN OFF MANAGEMENT PLAN

The objective of the fire water run-off management plan is to ensure that in the event of a fire all reasonable steps are taken to ensure that fire water run-off is directed to foul sewer for treatment at a sewage treatment works, or contained on-site for subsequent sampling and treatment.

The management plan has been designed to consider 2 scenarios:

1) A minor fire, controlled on-site using local equipment
2) A major fire, where the fire service is in attendance with multiple appliances

The following site-specific constraints have been taken into account when preparing this section of the FPMP:

- The site is located on an aquifer and in close proximity to the Tennant Canal. There is therefore a risk of contamination of both groundwater and surface water.

8.1 Minor Fire

The fire water run-off management strategy for a minor fire is to provide local capacity for containing fire water run-off such that it can be captured and tankered off-site for treatment.

In the event of a fire, and where safe to do so, site staff will use on-site management measures (fire extinguishers, smothering with inert materials, etc.) to contain the fire. Drains will be blocked to retain fire water within the site bunds and this will be recirculated back onto the fire by any attending SWF&RS appliance.

Once extinguished any fire water within the bunds will be sampled (if required) before being subject to controlled release into the site's drainage system or tankered from site for treatment at a suitably licensed facility.

8.2 Major Fire

The fire water run-off management strategy for a major fire is to provide capacity for containing fire water run-off initially in the same way as for a minor fire.

Site staff and equipment will assist SWF&RS to remove smouldering waste from stockpiles using the onsite telehandler and bucket. This will be spread in the Emergency/Quarantine Area (note: this site is unable to comply with NRW's guidance for the Emergency/Quarantine Area to be concrete surfaced and to have a 10m clear perimeter around it (the identified area has an 8m perimeter and is asphalt surfaced)) and quenched with water. Waste will be removed to a separate storage area and treated in accordance with section 9.

Once extinguished the water retained within the site bunds will be sampled (if required) before being subject to controlled release into the site's drainage system or tankered from site for treatment at a suitably licensed facility.

9 REMOVAL OF FIRE WASTE

As with all waste fires there is a residual amount of fire waste which will be required to be removed off site for recovery or disposal.

The considerations relating to these wastes are listed below;

- Possible contamination which would make the waste hazardous. All fire residues will be tested once it is safe to do so and an assessment against waste classification technical guidance made to determine if the material is hazardous or non-hazardous. On the outcome of this assessment the waste will be sent to an appropriately licensed site for treatment or disposal of that type of waste.
- As the waste has been subject to fire it will be assessed to ensure that it no longer pose a fire risk and that no heat sources remain within the waste mass. This will be achieved by turning the waste material when it is safe to do so to check for sources of heat and smoke.
- The site management and Fire Marshall will sign-off the disposal of all fire waste before it leaves site to confirm they have inspected the waste and that no heat sources remain.
- Where possible all fire waste will be kept separate and quarantined to ensure it can be monitored and if needed, it can also be managed with additional fire prevention measures such as water or soil.
- All fire waste will be removed from site when it is safe to do so, but no later than 7 days after it has been extinguished or 7 days from its last reported sign of heat or smoke.

DRAWINGS AND SITE PLANS

Refer to **MPP7** for current Site Drawings and Plans

APPENDIX A – FIRE RISK ASSESSMENT

Fire Risk Assessment

Environmental Permit

PERMIT NUMBER EPR/HP3938RN/T001

Fenestration Recycling Company Ltd

(t/a The National Window Recycling Company)

Neath Abbey Wharf

Neath Abbey

Neath Port Talbot

SA10 6BL

Document Revision

Version	Date	Author	Checked / App'd	Revision
DRAFT	23/02/16	SW	SH	FOR APPROVAL
1.0	29/02/16	SW	SH	RELEASE VERSION FOR REVIEW BY NRW

Disclaimer

Every skill and care has been taken in completing this work within the terms of the contract commissioning our services and taking into account the resources assigned to the commission in agreement with the client. Similarly, every skill and care has been taken to ensure the accuracy of the information within this document. No liability or responsibility of any kind to the client or 3rd parties can be accepted by Technia Business Solutions Ltd for any matters outside of the stated scope. The opinions and interpretations presented in this document represent our reasonable interpretation of the data made available to us. Drawings and descriptions within this document are not intended to represent detailed design unless otherwise stated and should not be used for construction.

Area assessed: **Fenestration Recycling Company Ltd, Neath Abbey Wharf, Neath Port Talbot, SA10 6BL.**	**Assessor: Stuart Watcham**
Assessment date: 23/02/16	**Risk assessment number: FRA1 230216**
Persons at risk: Employees: Y **Visitors: Y** **Contractors : Y** **Public: Y**	

Risk Assessment Scale

Potential Severity of Hazard	**Likelihood**	**Risk**	**Action Levels**
5 = Fatal	5 = Very Likely	20-25 = High	20-25 unacceptable, immediate action required
4 = Major incident	4 = Likely	5-19 = Medium	10-19 short term reduction necessary
3 = Localised incident	3 = Possible	1-4 = Low	5-9 medium term reduction if practicable
	2 = Unlikely	0 = Negligible	0-4 no further action required- maintain
	1 = Very Unlikely		
	0 = Negligible		

RISK RATING = POTENTIAL SEVERITY X LIKELIHOOD

Fire Hazard (Harm)	Potential Severity	Likelihood	Risk Rating	Reasoning	Control Measures (Action Required)	Residual Risk
Arson or Vandalism	4	3	12	**Severity:** Arson or Vandalism typically carried out at night when premises are unoccupied. Major fire incident possible. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Access to site restricted by security fencing and monitored by CCTV. Likely to be effective in controlling access in the majority of cases.	**Hazard Specific Measures:** Fenced site to stop general access. CCTV installed and monitored out of hours by 3rd party security company. **General Measures:** Ensure all combustible wastes are kept in accordance with NRW Guidance. Restrict stockpile size and introduce fire breaks within the waste piles to prevent fire migration. Site Manager/Fire Marshall to carry out end of shift inspections to ensure no heat or smoke is present within the waste storage areas. Staff trained and emergency procedures in place.	4 x 1 = 4
Discarded Smoking Materials	4	3	12	**Severity:** Risk generally, but not wholly restricted to times when staff or visitors are on-site. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Major fire incident possible as fire can start some time after smoking materials	**Hazard Specific Measures:** Site to operate a strict no smoking policy. Smoking to only be permitted outside of the main entrance gates of the site.	4 x 1 = 4

				discarded. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Possible if staff or visitors are smoking on-site.	Cigarette disposal bins to be provided in smoking area to ensure all discarded smoking materials are kept off site. **General Measures:** As Arson or Vandalism	
Hot Exhausts	4	2	8	**Severity:** Plant and equipment with exhausts largely moving and handling equipment (forklifts, telehandlers, etc.). Major fire incident possible as fire can start some time after initiating incident. Staff potentially present on-site. Site not enclosed to the extent that escape from fire would be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Possible if waste comes into contact with hot exhausts/exhaust gases, although ignition temperatures for most waste streams are potentially higher than exhaust temperatures (except close to engine manifold).	**Hazard Specific Measures:** Where possible all loading of plant or equipment will take place away from the exhaust system. All exhaust systems must be cleaned down at the end of each shift. Implement 6m separation distances between parked plant and waste. Exhaust systems checked daily as part of maintenance routine. **General Measures:** As Arson or Vandalism	4 x 1 = 4

Plant or Equipment Failure	4	2	8	**Severity:** Risk generally restricted to times when staff are on-site. Minor fire incident likely, major fire incident possible. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Processing equipment (mills/granulators, automated sorting, conveyors, baler) in direct contact with waste. Plant and equipment largely moving and handling equipment (forklifts, telehandlers, etc.). Main plant and equipment risks related to other factors (exhausts, sparks from buckets, collisions, etc. – addressed separately). Temporary plant is infrequently brought to site so only risk when this is present and no more elevated than on-site plant.	**Hazard Specific Measures:** Staff to remain vigilant for trapped waste in equipment that could friction heat or fall into electrical systems (which should be correctly designed with guards fitted) and remove when discovered. Plant and equipment to be serviced and maintained as per the manufactures requirements to ensure reliability and to reduce the possibility of failure. Daily inspections to be carried out by trained plant operatives with any and all defects being reported by no later than the end of the working day. Implement separation zones to maintain distances between installed/parked plant and waste. Provisions for back-up plant and equipment to ensure failed plant or equipment can be replaced within a reasonable timescale. **General Measures:** As Arson or Vandalism	4 x 1 = 4
Electrical Faults	3	2	6	**Severity:**	**Hazard Specific Measures:**	3 x 1 = 3

				Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of manual activity, or within stationary electrical equipment, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Equipment designed to reduce electrical faults.	Electrical cables to be tested and isolated prior to the start of work. Use of mobile power tools and power supplies to be limited to essential maintenance only. Staff trained to inspect electrical equipment before use and unplug/disconnect power from equipment when not in use. Equipment maintained in accordance with manufacturer's guidance. All electrical equipment to be PAT tested where required. All electrical equipment inspected for the build-up of dust that could cause sparking between electrodes and lead to a fire, or explosion. Equipment cleaned as required to remove dust build-up. Extraction equipment inspected on a daily basis to ensure it is working effectively and maintained (filters cleaned, preventative maintenance, etc.) in accordance with a written schedule of maintenance.	

					Internal compartments/ components of electrical equipment inspected on at least a monthly basis and cleaned as required to ensure that dust is not allowed to accumulate leading to short-circuiting or sparking between electrodes and lead to a fire, or explosion. Firefighting equipment suitable for electrical fires to be available on site. **General Measures:** As Arson or Vandalism	
Neighbouring Site Activities	3	2	6	**Severity:** Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of manual activity, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Adjacent sites are a waste management and asphalt manufacturing facility. Sites separated by	**Hazard Specific Measures:** Staff to remain vigilant for smoke from neighbouring sites and alert Fire Marshall if fire suspected at neighbouring sites. Fire Marshall will advise staff to maintain increased vigilance for secondary fires; and Firefighting equipment will be mobilised to specific areas if any elevated risk is identified **General Measures:** As Arson or Vandalism	3 x 1 = 3

				>50m and the Tenant Canal. Activities may cause fire risk – fuels potentially explosive, combustible wastes stored on Waste Management facility (paper/cardboard, RDF, plastics, textiles, etc.), other wastes non-combustible, plant located some distance from waste storage areas. Asphalt plant uses high-temperature processing. Proper site management at these facilities will minimise risk. Fire risks are limited to wind-blown hot/burning particles from a significant fire event.		
Naked Lights (including naked flames and other high temperature heat sources)	3	2	6	**Severity:** Risk restricted to times when staff or visitors are on-site. Localised incident likely. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Smoking considered separately. Hot works considered separately. No other naked flame sources present on-site. Electric light bulbs shielded or LEDs used.	**Hazard Specific Measures:** As discarded smoking materials. As hot works. Monthly H&S walkover to check shielding of lights. **General Measures:** As Arson or Vandalism	3 x 0 = 0

(Reactions between) Incompatible Wastes	4	1	4	**Severity:** Fire could start at any time. Major fire incident possible. Staff potentially on-site. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Waste types exclude hazardous materials. Only non-conforming loads would pose a risk. Generally accepted materials are unreactive (uPVC, EPDM and rigid plastics).	**Hazard Specific Measures:** Robust waste acceptance and inspection procedures. Quarantine any wastes with potential to react.	4 x 0 = 0
Hot Loads Deposited at the Site	3	1	3	**Severity:** Staff potentially present on-site. Fire incident likely to be restricted to vehicle. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:**	**Hazard Specific Measures:** Robust waste acceptance procedures. Weighbridge operator to carry out inspection to ensure no heat or smoke is present within the load. Secondary inspection on tipping. Manage/quench load to reduce heat if excessively hot. Call emergency services if load cannot be managed by site staff. **General Measures:**	3 x 0 = 0

				No ash or thermal by-products accepted on-site. uPVC is slow to ignite and its chlorine content acts as a fire retardant. PE, PP, ABS, Nylon –easier to ignite (compared to uPVC) and not self-extinguishing, although volumes accepted, processed and stored onsite smaller.	As Arson or Vandalism	
Hot Works (e.g. welding or cutting)	3	1	3	**Severity:** Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of hot works, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. Hot works generally undertaken in yard area located some distance from stockpiles. **Likelihood:** Possible if stray sparks reach stockpiles. uPVC is slow to ignite and its chlorine content acts as a fire retardant. PE, PP, ABS, Nylon –easier to ignite (compared to uPVC) and not self-extinguishing, although volumes processed and stored onsite smaller.	**Hazard Specific Measures:** No hot works including welding to be permitted within 6 metres of any combustible or flammable materials. Specific procedures for dealing with Hot Works. Suitable firefighting equipment to be available on site. **General Measures:** As Arson or Vandalism	3 x 0 = 0

Open Burning (on-site or adjacent sites)	3	0	0	**Severity:** Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of naked flame, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** With the exception of certain hot works (covered separately) no naked flames present on-site. Adjacent sites waste management and asphalt manufacturing that also do not permit open burning on-site.	**Hazard Specific Measures:** No fires permitted on-site. Site rules and induction programme for staff. Disciplinary procedure to make specific reference to burning of waste – gross misconduct. Staff to remain vigilant for smoke from neighbouring sites and alert Fire Marshall if fire suspected at neighbouring sites. Fire Marshall will advise staff to maintain increased vigilance for secondary fires; NRW to be notified if adjacent site is in breach of permit conditions; and Firefighting equipment will be mobilised to specific areas if any elevated risk is identified. **General Measures:** As Arson or Vandalism	3 x 0 = 0
Sparks from Loading Buckets	3	1	3	**Severity:** Loading shovels primarily used for loading residual wastes into containers. Staff potentially present on-site. Fire likely to be initiated within waste container, therefore	**Hazard Specific Measures:** Dragging/pushing of buckets along concrete surfaces should be kept to a minimum.	3 x 0 = 0

				localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape from fire would be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** Use of loading buckets infrequent, with likelihood of sparks causing fire unlikely during use.	Site yard brush to be used to maintain site cleanliness rather than scraping with a loading bucket. Loading buckets to be inspected daily. Investigation and implementation of methods for spark reduction should sparking become a noted problem during the operation of the equipment. **General Measures:** As Arson or Vandalism	
Damaged or Exposed Electrical Cables	3	0	0	**Severity:** Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of manual activity, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** uPVC is slow to ignite and its chlorine content acts as a fire retardant. PE, PP, ABS, Nylon –easier to	**Hazard Specific Measures:** Not required **General Measures:** As Arson or Vandalism	3 x 0 = 0

				ignite (compared to uPVC) and not self-extinguishing, although volumes processed and stored onsite smaller.		
Industrial Heaters	3	0	0	**Severity:** Risk generally restricted to times when staff are on-site. Fire likely to initiated in the vicinity of the heater, therefore localised and controllable using fire-fighting equipment. Site not enclosed to the extent that escape would normally be impeded. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:** No industrial heaters used on-site.	**Hazard Specific Measures:** Not required **General Measures:** As Arson or Vandalism	3 x 0 = 0
Self-combustion (e.g. due to chemical oxidation)	4	1	4	**Severity:** Staff potentially present on-site, although fire could start at any time. Major fire incident possible. Site not enclosed to the extent that escape would normally be impeded. Risk of fatality confined to fire-fighters. Airborne combustion products potentially toxic and irritant. Risks to fire-fighters (including staff) and nearby receptors. **Likelihood:**	**Hazard Specific Measures:** Robust waste acceptance procedures. Site Manager/Fire Marshall to carry out end of shift inspections to ensure no heat or smoke is present within the waste storage areas. **General Measures:** As Arson or Vandalism	4 x 0 = 0

				Self-combustion in accepted materials very unlikely due to nature of materials and temperatures required.		

NOTES

1. This risk assessment is based on the anticipated hazards and risks associated with the identified activities as provided in the client's brief. Changes to the scope of operations, site layout, plant, and equipment or working practices will require a review and amendments to this risk assessment.

2. All site operatives and drivers shall be made aware of the contents of this assessment the contents of the Fire Prevention and Management Plan that accompanies this risk assessment.

3. Safe working practices as a means of risk reduction shall be stated in the method statement for any work.

4. In assessing the residual risk, the risk assessor has assumed that:-

   a) Existing control measures are effectively implemented and reduce risks to their intended level.

   b) Any additional measures are effectively implemented and have the desired effect on risk reduction.

   c) The residual risk is at an acceptable level when it is assessed as low or negligible.

5. The risk assessment shall be reviewed and amended as necessary:-

   a) following any significant change in the nature of the works e.g. including, but not limited to, changes identified in 1 above.

   b) following any accident or near miss incident.

6. Should any of the hazards, associated risks, or control measures change as a result of the review then site staff must be formally advised of the changes. Procedures, work instructions and other company documentation (site rules, induction information, etc.) should be updated as required.