



Subject SMP 4.9.4 - [REDACTED] Fire Prevention Management Plan

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1- Introduction

1.1 Fire Prevention Plan Objectives

An Fire Prevention Management Plan (FPMP) is applicable to site operations due to storing combustible wastes on site. This FPMP is only applicable to Waste Electrical Electronic Equipment (WEEE) waste listed in the LoW table 1.

This FPMP has been designed to meet the following objectives:

- To minimise the likelihood of a fire happening;
- To minimise the potential impact from emissions during or after a fire;
- To extinguish a fire within 3 hours; and
- To minimise the spread of a fire within the [REDACTED] sites and to the surrounding Royal Mint site.

The [REDACTED] include buildings: [REDACTED], as highlighted in [REDACTED]

All site staff and contractors working within [REDACTED] and [REDACTED] must be aware of and understand the contents of this FPMP to ensure that they respond to fires correctly.

A copy of this FPMP document, in conjunction with The Royal Mint's site plan will be kept within building [REDACTED] and building [REDACTED] ([REDACTED]).

The FPMP will also be held electronically in order to be accessed externally if required by employees of The Royal Mint.

The [REDACTED] fire prevention plan will be reviewed annually or following a fire incident on site or if any changes to the site are made which would affect the FPMP.

1.2 Site Information

The Royal Mint was first issued an environmental permit in 2004 for surface treatment processes. Since this first issue was made, several variations to the environmental permit have occurred to reflect site/operational changes. The latest permit variation (2025/2026) introduced additional WEEE waste to allow for the processing of waste to facilitate the recovery of precious metals. Not all wastes accepted on site are covered by the FPMP; these are listed in grey in the List of Waste (LoW) codes found in Table 1.

This document considers the risks associated with fire within the [REDACTED] operation of The Royal Mint site. It also supplements the emergency arrangements that are in place for the remainder of the site, the Emergency Management Plan and is managed and operated in accordance with The Royal Mint's ISO accredited Health and Safety and Environmental Management Systems.

The [REDACTED] operation receives WEEE from various sources. When whole units are received, they are first assessed for potential reuse before being dismantled into individual components. These components are then processed downstream by dedicated machinery to recover precious metals.

2- Site Details

2.1 Site Location

The site is located at The Royal Mint, Llantrisant, Pontyclun, CF72 8YT.

2.2 Site Boundary

The permitted site boundary and current layout can be found in Section 16 of this FPMP.

2.3 Nearby Sensitive Receptors

The site's impact to sensitive receptors has been considered in this FPMP. There are a number of sensitive human receptors within 1km of the site. All receptors have been recorded in Section 16 at the end of this FPMP.

2.4 Wind Direction

The prevailing wind direction relative to the site is from a west-south-westerly direction, based on a 5-year average from Pontyclun Weather Station.

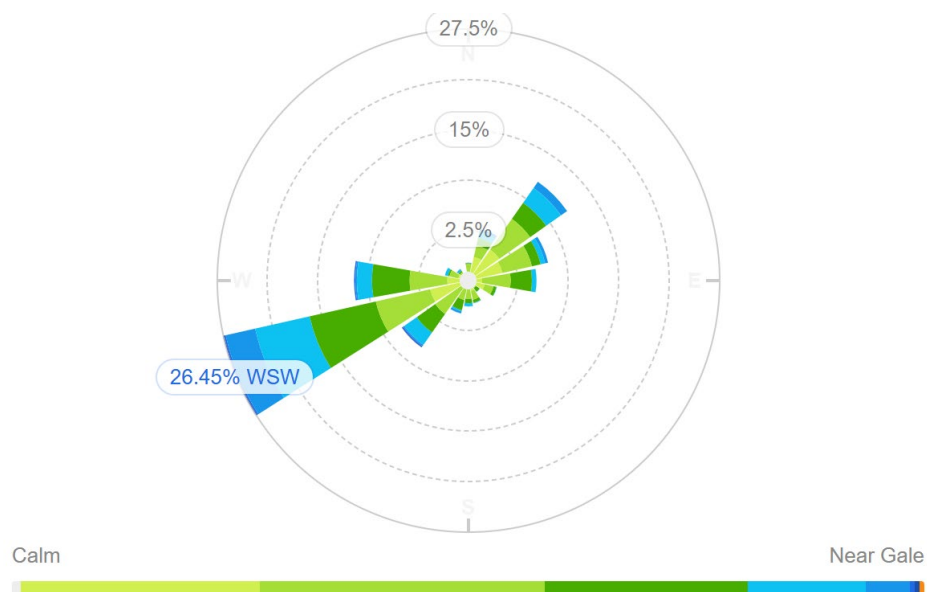


Figure 1 – Prevailing Wind Direction for Pontyclun

2.5 Flood Risk

The flood risk from rivers for the site is classified as Low risk. Low means that each year, this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

The flood risk from surface water flooding is classified as High. High means that each year, this area has a chance of flooding of greater than 1 in 30 (3.3%).

Figure 2 below identifies the areas of site at risk from flooding from surface water and rivers.

2.6 Groundwater Vulnerability

The site is not located within a Source Protection Zone.

According to BGS, the groundwater vulnerability of the underlying superficial and bedrock sediment is variable from low to high vulnerability. The site resides at an intersection of aquifers with mixed different vulnerabilities

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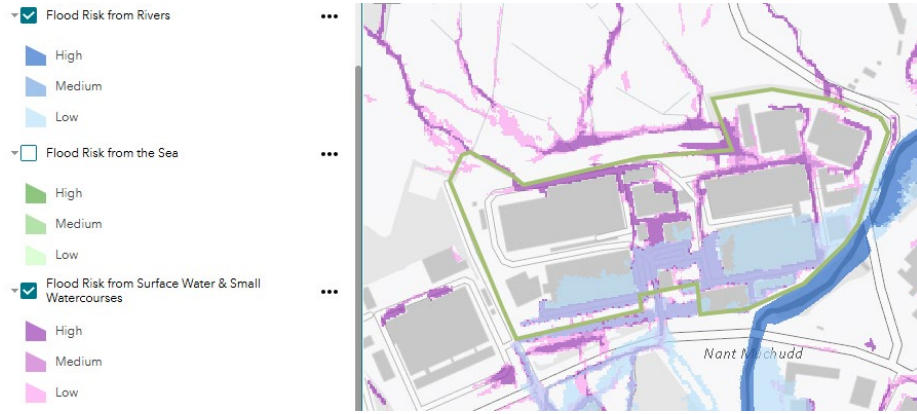


Figure 2 – Potential Flood Risk for site

3- What to Include (Section 5 of the Guidance)

3.1 Maximum Waste Quantities and Types Stored on Site

The [REDACTED] and [REDACTED] areas are designed to receive a maximum of 11,600 tonnes of FPMP WEEE waste per annum. This is made up of a maximum of 8,000 tonnes of PMR Dry Waste (PCB's) and 3,600 tonnes of [REDACTED] Waste (whole units). While the volumes of each incoming waste type may vary and are not possible to forecast with precision, all materials will be managed as hazardous waste. Non-hazardous List of Waste (LoW) codes are included on the permit solely for dual-coding purposes to ensure compliance with relevant waste classification requirements.

This annual quantity equates to a maximum of 670 and 300 tonnes respectively per month, or approximately 33 and 15 tonnes per day, although actual volumes may fluctuate daily, weekly, or monthly depending on operational demand. Upon arrival, all waste is stored and segregated into batches based on the date of receipt to maintain full traceability and inventory control.

The business will operate at a level to maintain processing demand and as such when required will aim to process 670 tonnes of PCB feedstock per month and 200 tonnes of whole unit WEEE waste.

Maximum storage duration for all waste: 1 month for PMR Dry and 1 to 3 months for whole units.

Maximum total tonnages stored at any one time will be 670 and 600 tonnes respectively.

Equivalent maximum volume at any one time will be approximately 1,340m³ and 1,200m³ respectively (based on typical WEEE bulk density of 0.5–0.6 t/m³).

3.2 Waste Types and Forms Stored

At any one time, the following may be present:

- Printed Circuit Boards (PCB's);
- Whole WEEE units;
- Partially dismantled electronic equipment; and
- Battery-containing equipment (prior to the battery removal process).

Waste is stored in:

- 1m³ palletised units;
- Flexible IBCs; and
- Racked storage systems.

No loose bulk piles are formed or stored on site

3.2.1 Wastes Codes Accepted

The [REDACTED] area will accept a range of WEEE equipment as identified below.

A summary of the proposed LoW codes accepted on site in Table 1 below are as follows:

Waste Code	Description
16 01 21*	Hazardous waste other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
16 01 22	components not otherwise specified
16 02 13*	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12.
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13

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16 02 15*	Hazardous components removed from discarded equipment.
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15.
19 02 04	Premixed waste composed of at least one hazardous substance
19 12 03	non-ferrous metal
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances.
19 12 12	Other waste (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11.
20 01 35*	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35

Table 1 – LoW Codes

3.3 Printed Circuit Boards (PCBs)

Although PCBs have brominated flame-retardant coatings, their inclusion in this FPMP is due to the possibility of the coating containing Persistent Organic Pollutants (POPs) in the form of tetrabromobisphenol A (TBBPA) upon arrival at site. After necessary processing (de-soldering separation and shredding), as detailed below, is undertaken, samples are collected and tested to ensure no POPs are present. If present, POPs waste will be segregated and sent for disposal. If no POPs present, the waste is permitted to continue in the processing activities.

As per the POPs Regulations 2019, all POPs (or potential POPs) containing waste must be kept separate from non-POPs waste at all times. The site ensures this is enforced for any untested waste or waste confirming the presence of POPs.

The remainder of this section details the procedure in place for storing and managing PCBs. The storage and management of this waste type are fully described in accordance with NRW's Fire Prevention and Mitigation Plan Guidance, specifically Section 5 requirements.

PCB's are received to site as per Section 5. Managing Waste of this FPMP. Refer to Pre-Booking of Deliveries into Precious Metals Recovery and PMR [REDACTED] Feedstock Delivery – Day of Delivery & Acceptance for further information.

[REDACTED] PCB Removal Procedure:

- When received as part of whole units, PCBs are removed manually during dismantling in building [REDACTED] (See [REDACTED]). Removal and separation of these PCBs from whole units is in line with the POP Regulations 2019 and separated PCBs will be stored away from dismantled units;
- Removal of PCBs will take place at designated dismantling benches, and removed units will remain in this area as to not be mixed with non-POPs containing waste types; and
- PCB units are visually inspected for heat, battery damage or contamination. Any damage or contamination detected during the visual inspection will result in the PCB being segregated, stored and sent for offsite disposal.

PCB Storage Prior to downstream processing:

- Following removal and visual inspection, PCBs are placed into UN-approved rigid containers or palletised metal cages for storage prior to downstream processing;

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- No other waste shall be stored in the same container as PCBs as to ensure potential POPs-containing waste remains segregated from non POPs-containing waste;
- PCB containers will not be stored in the same waste pile as non-PCB waste, as to prevent cross-contamination of POPs during fires or other incidents. Piles shall consist of either entirely PCB waste or entirely other WEEE waste; and
- All containers will be clearly labelled with the LoW code and date of storage prior to being moved into its storage location.

All containers are to be stored:

- Indoors;
- On impermeable concrete flooring;
- Minimum distance of 6m from building walls;
- Away from ignition sources;
- Maximum PCB storage volume at any one time: 200m³; and
- Maximum storage duration: 1 month (target), 3 months absolute maximum.

PCB's are then moved downstream to the TRM permitted operation of Precious Metals Recovery. A description of the PMR operation can be found in Section 5.10 of this FPMP.

Recovery and Disposal

All POPs containing waste is segregated and disposed of offsite by on-land incineration (D10), in accordance with the POPs Regulations 2019.

Any PCB waste that does not contain POPs is permitted for recovery in accordance with the current environmental permit. This includes recovery via R4, R5 and R13 recovery methods.

3.4 Combustion Products and Emissions

In the event of a WEEE fire, potential combustion products and emissions from the fire and emergency response have been considered. These have been considered in relation to the wider community, critical infrastructure and the environment. These can be seen below

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Combustion Product or Emission from Fire or Emergency Response	Parameters	Impact on Community	Impact on Critical Infrastructure	Impact on the Environment
Airborne smoke plumes	Carbon monoxide (CO); Carbon dioxide (CO ₂); Nitrogen oxides (NO _x); Hydrogen bromide (trace, if plastics involved); Dioxins and furans (from burning plastics); Particulate matter (PM ₁₀ /PM _{2.5}); and Smoke plume containing metal particulates.	Temporary smoke nuisance during the fire. Minimal impact after the fire; Potential short-term road restrictions; and Fine particulates may be deposited on properties in the nearby area.	Airborne combustion products and emissions are unlikely to impact critical infrastructure. Smoke plumes may be visible from the road, but is unlikely to obstruct the highway visibility.	Short-term air pollution likely from fire on site. This pollution will be short-lived and is not expected to cause any significant or long-term impacts. Nearby environmental receptors include Rhos Tonyrefail, Llantrisant Common, River Ely LWS, and nearby ancient woodland sites. Airborne pollutants are not expected. No significant impact to land is expected, providing mitigation measures are adhered to. Small amounts of particulates may settle in the surrounding areas, but these are not likely to cause significant impact.
		<p>Mitigation</p> <p>Primary mitigation involves minimising the length of time a fire burns. Shorter durations will likely result in less smoke production and therefore a reduction in the impact it may cause. Shorter durations can be achieved by quarantining unaffected waste as to minimise the amount of waste available to combust, storing waste inline with this FPMP as to minimise the risk of combustion in the first place, and fast, decisive action on the discovery of a fire to prevent it from increasing in size or intensity.</p> <p>South Wales Fire and Rescue will be contacted immediately upon discovery of a large fire, or when a small to medium fire cannot be extinguished using safe methods on site.</p>		

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		Nearby receptors will be informed of large fires, or fires that pose a risk of nuisance due to high smoke production. Windows and doors will be recommended to be closed in this instance to minimise the risk of nuisance. This will minimise the impact on the community.		
Contaminated water/firewater	Heavy metals (lead, copper, nickel); Acids; Dissolved organic carbon; and Suspended solids.	Contaminated water or firewater is highly unlikely to impact the wider community.	Site power and process infrastructure may be temporarily affected by the use of water in firefighting practices. Following a significant fire event where water may have impacted power an/or process infrastructure, all services and infrastructure will be assessed for safety prior to operations beginning.	Nearby environmental receptors include Rhos Tonyrefail, Llantrisant Common, River Ely LWS, and nearby ancient woodland sites. Pollutants from contaminated water/firewater are highly unlikely to impact these sites.
		All runoff will be contained on site. Any contaminated water on site will be contained and managed within the onsite effluent treatment plant prior to discharge or tankered offsite by a suitably licenced third party contractor if required.	No off-site critical infrastructure within the vicinity of the site will be impacted by contaminated fire water.	Contaminated water or firewater is highly unlikely to impact the environment, as all contaminated firewater will be contained on site. Contaminated water on site will be contained and managed –the onsite effluent treatment plant prior to discharge or tankered offsite by a suitably licenced third party contractor if required.
		<p>Mitigation</p> <p>Primary mitigation will focus on containment of all contaminated water produced during a fire, either surface water or firewater. Containment will be within the onsite drainage system – with penstocks closed – and/or within the buildings. The site provides up to 610m³ firewater containment capacity.</p> <p>Penstocks are operated automatically and are tested regularly to ensure they remain operational for use during an emergency.</p>		

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		Site power and process infrastructure will be prioritised after the incident has been management by the Fire and Rescue Service (FRS) or onsite staff. This will allow site operations to continue whilst clean-up and decontamination activities are undertaken.
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Table 2 – Combustion Products and Impacts

3.5 Site Plans – Information Provided

Updated site plans include the following required information; the number represent the number on the plans provided:

- [REDACTED]
2. Locations of isolation points for utilities – HV isolation points are located [REDACTED] building [REDACTED] and [REDACTED]. Gas isolation is located on the south road [REDACTED] Building [REDACTED].
 3. Areas where hazardous materials are stored or processed 3. Gas cylinder storage areas.pdf, and TRM Flammable Liquids.pdf
 4. Main access routes for fire service vehicles – access requirements and the weight of vehicles may need to be confirmed with your local Fire and Rescue Service as various types of vehicles are in use 4. Emergency Services Access Routes.pdf
 5. Any alternative access points around the site perimeter to assist fire fighting
 6. Location of hydrants and water supplies - 5. Fire Hydrant Layout.pdf
 7. Drainage systems, foul and surface water drains, and their direction of flow and outfall points
 8. Direction of runoff from site surfaces - 6. Site Plan Showing Drainage Channels.pdf
 9. The location of firewater containment systems and protective equipment - 7. Penstock and Storm Water Layout.pdf 7.1. External Spill Kit - Site Layout.pdf. Personal Protective Equipment storage is located in Buildings [REDACTED] and [REDACTED]. This is shown on the wider site layout plan.
 10. Areas of permeable or impermeable ground - 8. Areas of Permeable_Natural Ground.pdf
 11. Areas of natural and unmade ground - 8. Areas of Permeable_Natural Ground.pdf
 12. Location of “off- site” emergency information pack in Primary ECC Building [REDACTED]. - 9. ECC Building [REDACTED].pdf
 13. Location of quarantine area. - [REDACTED]
 14. Assembly point for staff and visitors to site - 11. Fire Assembly Points.pdf
 15. Compass rose showing north and the prevailing wind direction - 12. Compass Rose with Prevailing Wind.pdf
 16. Location of sensitive receptors within 1km of the site - 13. Royal Mint Sensitive Receptors 1km update.pdf

The site maintains an Emergency Management Plan detailing the contact information of all sensitive receptors

4- Managing common causes of fire

4.1 Details

The following table outlines common causes of fire including examples of these sources, the associated risks, and the mitigation measures in place to manage them:

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Source	Risk	Specific mitigation
Arson or vandalism	Deliberate ignition of wastes by intruder(s) and/or vandalism of site infrastructure, plant and/or machinery which may give rise to malfunction or compromise the integrity of waste storage/containment measures.	The site has 24 hours security 365 days of the year. There is double lined security fence in place with cameras at strategic locations. CCTV covers the site in full and is monitored as part of the 24/7/365 security measures.
Visitors and Contractors	Deliberate or accidental ignition of waste through malicious or improper activities	All visitors are to be supervised by site staff at all times. Visitors to the Royal Mint Experience have no opportunity to enter the operational areas of site. All contractors are required to undergo the necessary training relevant to their job prior to entry the operational areas of site. Contractors all undergo a DBS check and are logged each time they enter site. Security scanners are in operation at the entry gate to prevent unauthorised persons or objects from being brought onto site.
Plant and Equipment	Ignition of waste from faulty or damaged plant and equipment. Plant and equipment of this nature may combust, potentially causing a fire outbreak.	All plant and equipment are subject to the site's routine maintenance and inspection programme. All plant or equipment identified as being faulty or damaged will be repaired as soon as it is practicable. Plant and equipment of this nature will not be used until repaired or replaced.
Electrical faults including damaged or exposed electrical cables.	Accidental fire caused by damaged or exposed electrical cables. Faulty appliances or damaged/ exposed electrical cables may spark as a result of a power surge.	All electrics on site are fully certified by a qualified electrician and with written procedures in place that set out the regular maintenance.
Discarded smoking materials	Risk of ignition of stored wastes from smoking materials which have not been fully extinguished.	The site has a strict no smoking policy. Smoking paraphernalia are not permit passed the Security lodge. Employees who wish to smoke may do so in their own time during lunch breaks at a location outside of the operational site.
Hot Works	Ignition of wastes, plant, equipment, cabling or any other combustible or flammable materials as a result of hot works.	Hot work is generally carried out in a designated area, covered by a dedicated risk assessment. When carried out in any other area, all hot work is covered by hot work permit and a dynamic risk assessment. See section 2.3 below.
Industrial Heaters	There are a small number of industrial heaters situated in the area: <ul style="list-style-type: none"> • Ceiling level gas-powered heaters in building ■ (Main Hall and Armour 1 and 2) • Electric heaters fitted directly above workstations in building ■ and at both ends of building ■ 	

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Source	Risk	Specific mitigation
	<ul style="list-style-type: none"> 2 ground level electric portable heaters in building [REDACTED]. <p>All heaters are switched off when buildings are not occupied.</p>	
Hot exhausts	Not applicable – no hot exhausts will come into contact with stored waste.	
Ignition Sources	Not applicable – no ignition sources used in the waste storage area	
Batteries	Ignition of waste from damaged batteries found in the WEEE products (e.g. laptops).	<p>All incoming waste is inspected upon arrival to site. If batteries are found, an assessment is made to determine whether the delivery is to be processed or returned to the supplier.</p> <p>If the decision has been made for the waste to be processed, all batteries are removed as soon as possible to minimise the risk of ignition.</p> <p>Battery removal will take place in building [REDACTED].</p> <p>Storage and disposal of waste batteries is covered under [REDACTED]</p> <p>Any remaining batteries-containing waste will be processed as a priority as always within 1 month.</p>
Leakages and Spillages	Fire may arise from the ignition of chemicals that have accidentally spilled or leaked through their container.	Spill kits are located across site. These are designed for both chemical and oil based spills and are situated in both internal and external areas. The waste storage area will be covered by a variety of spill kits to manage this risk.
Build-up of loose combustible waste, dust and debris	Loose combustible waste has a higher potential to ignite.	The site does not accept vast quantities of loose combustible waste. The majority of waste will be WEEE products with little dust or debris
Tramp Metals	Loose metals that may become lodged in plant or equipment creating localised hot spots and increasing risk of fire	All plant and equipment are routinely inspected to detect build-up of waste or the presence of any tramp metal. Upon detection tramp metal is removed from plant or equipment as necessary. Tramp metal is not expected to pose a significant risk on site.
Reaction between wastes	<p>Not applicable – There is no expectation that there will be an adverse reaction between wastes.</p> <p>Inspections of incoming wastes will be carried out to remove damaged batteries prior to storage.</p>	
Waste acceptance and deposited hot loads	Not applicable – no hot loads will be accepted on site.	
Hot and dry weather	Combustion of wastes due to ignition from environmental conditions	All waste will be stored indoors and away from direct sunlight. Waste will only be exposed to direct sunlight during transportation.

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Source	Risk	Specific mitigation
Gas Cylinders (maintenance use)	Cylinder rupture or ignition during fire; BLEVE risk	Cylinders are not routinely accepted on site. If received, or are required for non-waste activities, cylinders will be stored in external ventilated cage, 20m from WEEE storage, secured upright, capped, segregated by type, quantities minimised, and regular inspections undertaken. No cylinders will be stored within waste buildings.

Table 3 – common causes of fires

4.2 Hot Works Procedure

All hot works will be conducted in a designated area which will be covered under a dedicated Hot Works Risk Assessment. However, when hot work is to be conducted elsewhere (e.g in situ), this will be considered a high-risk activity, which will require a dynamic Hot Works Risk Assessment, and a hot works permit to work will be required.

Where a hot works permit to work is issued, the area will be cleared of any combustible or flammable material within a 12m radius where possible. In addition, fire extinguishers will be available at all times where the hot work is taking place. During the task, two persons will be present, one completing the hot work task and one observing the control of sparks.

Fire checks will also be conducted following the completion of hot work, initially after approximately one hour, and again at four hours.

4.3 Flammable Liquids on Site

The site stores the following liquids on site, which are all located in separate buildings or in excess of 20m away from the storage areas:

- Glacial Acetic Acid up to 30,000 litres;
- Oxidiser substance max 500kg in powder/crystals form and solution; and
- Various small amounts of flammable liquids (paints, solvents etc.) in a dedicated storage area.

See 3.1. TRM Flammable Liquids in Appendix A for map of locations.

5- Managing Waste (Section 7 of the Guidance)

A pre-acceptance process flow is in place, outlining the steps that must be completed before any waste is approved for delivery to site. This process clearly identifies the responsible personnel at each stage. Once pre-acceptance checks are completed, an acceptance process flow details the critical steps to be followed upon receipt of the waste, again specifying accountability for each task. (Refer to Pre-Booking of Deliveries into Precious Metals Recovery and PMR [REDACTED] Feedstock Delivery – Day of Delivery & Acceptance for further information).

These processes ensure full control over incoming waste, with all relevant information and documentation accurately recorded in the site EPR system. The process flow documents are live documents which will be updated to include the relevant LoW Codes listed in Section 2 once the permit variation has been determined.

All wastes are inspected and verified on arrival before being transferred to designated storage areas. Materials are managed according to their classification, with appropriate separation maintained to prevent incompatibility. Storage locations and quantities are controlled in line with site procedures and the requirements of the Fire Prevention and Mitigation Plan Guidance.

At full operational capacity, the site is designed to handle up to approximately 56 tonnes per day, although actual volumes may fluctuate daily, weekly, or monthly depending on operational demand, based on 250 working days per annum. Actual daily volumes may vary depending on processing schedules and incoming material streams.

Waste will be received primarily on wrapped pallets, in Flexible IBC's, in good condition and stored either [REDACTED] or [REDACTED] within designated storage areas according to its classification. All materials will be managed and stored in accordance with established procedures and the requirements set out in Section 4.2 and 4.3. Storage methods will ensure appropriate containment, segregation, and accessibility for inspection or onward movement.

The storage area is constructed with concrete, brick and corrugated metal walls, which provide inherent fire resistance.

A clear perimeter around the site has been established and will be maintained at all times, in accordance with the existing site layout. As the site is pre-existing, Royal Mint has no control over the locations of existing buildings. However, there will be no waste pile or building containing waste located within 6m of the perimeter fencing as to prevent fire spreading offsite during an incident. A site plan denoting the perimeter distance is provided in the Appendix A of this FPMP. A minimum 6m clear perimeter access route is maintained around each waste storage building and is identified on the site plan. This area is kept clear at all times for 360° firefighting access. This requirement has been included as requested by the NRW FPMP guidance.

5.1 Self-Combustion

Managing waste piles is important in helping to prevent self-combustion for waste and will aid in limiting the scale of a fire should one occur.

The site aims to process and PCBs as soon as reasonably practicable. Where possible, this will be on a first-in-first-out basis, but prioritisation will be given to items containing batteries. This reduces the risk of fire significantly. As far as possible, waste will be stored as loose components containing no batteries or PCBs, and whole electronics will be dismantled to achieve this.

Batteries and PCB's will be removed in Building [REDACTED] from batches of waste up to 50m³ at a time. All batteries will be stored in a safety container to prevent water or other potentially damaging substances from contacting them. During the shift batteries are segregated by type and placed in containers indoors. At the end of the shift, these are transferred into dedicated drums with layers of vermiculite between them. The drums are then stored in an external, sheltered battery storage compound.

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Storage and disposal of waste batteries is covered under [REDACTED]

Removal and Storage of PCB's is covered under [REDACTED]

Although WEEE waste is considered a low self-combustion risk, the principles outlined in the FPMP guidance have been applied:

Principle	Incorporated	Explanation
Reduce risk factors and minimising external heat/moisture	Yes	All WEEE waste is stored internally and away from direct sunlight or any abiotic conditions that may result in self-combustion.
Limit pile size	Yes	300m ³ max (below NRW 450m ³ limit)
Limit storage time	Yes	The site aims to process all WEEE waste within 1 month. No waste will be stored for greater than 3 months.
Pile rotation	No	Piles are not routinely rotated as waste is stored in smaller 1m ³ units. For FPMP assessment purposes, it is considered to be one single pile, however it does not share the same fundamental characteristics of a single unified pile. Waste is also stored typically for 1 month therefore not requiring pile rotation.
Storing waste in largest form	Yes	WEEE Waste is received on site as broken-down waste. Some waste received are as whole components. Only batteries are removed prior to storage to reduce potential fire risk. There is no shredding or reductions to particle sizes prior to further treatment.
Monitor temperature	Yes	Thermal imaging inspections are undertaken on randomised units across all storage locations.
Remove ignition sources	Yes	Battery removal is prioritised on site prior to storage.

Table 4 – Self Combustion Principles

5.2 Storage Times

The Royal Mint aims to operate in a way that keeps waste inventory to a minimum.

The Royal Mint will only store waste that is proposed for use within the upcoming month in order to reduce the risk of fire that comes from storage waste for longer periods. It is within the site's interest to process waste as fast as possible to allow for adequate space for incoming deliveries. Waste will aim to be processed within 1 month following acceptance on site. However, due to operational demands and the need for flexibility, the site commits to not storing waste longer than 3 months. This is to minimise, as far as possible, the risk of fire and work towards meeting the three objectives of this FPMP.

The site will operate in line with the FPMP Guidance and will remove waste from site, by use in processes or onward transfer within a 3-month period.

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Electronic records of incoming and outgoing waste quantities, as well as, LoW Code, waste type, time of arrival and time of departure are recorded by the weighbridge operator. Where waste is used in on-site processes, details of its transfer to the processing area will be recorded.

Details of waste type, date of receipt and approximate quantity will be labelled onto each container of waste stored (e.g. pallet, boxes of flexible IBC).

By recording these details, it allows the site to accurately track and manage waste storage time so that the appropriate action can be taken where required.

5.3 Pile Size and Separation Distances

All waste will be stored in 1m³ units packaged in a range of storage container types, including pallets, boxes, and flexible IBCs. For FPMP assessment purposes, a batch of units stored together with less than a 6m separation distance will be classified as a “pile”. The maximum pile size on site shall be no greater than 300m³, comprising of up to 300 units of waste per pile.

A maximum of one pile shall be stored per building, unless a 6m separation distance can be maintained without impeding on escape or evacuation routes, or risk posing any other health and safety concern. By storing individual piles in separate buildings, the FPMP requirement for a minimum 6m separation distance between piles has been achieved. The buildings themselves will offer further protection to waste piles by providing a physical barrier between one waste pile and another.

Waste will be stored in piles with a maximum total volume of 300m³ at any one time. The configuration of this volume will vary in line with operational requirements. Indicative arrangements may include:

- 1m x 20m x 10m
- 2m x 15m x 10m
- 2m x 20m x 5m
- 2m x 20m x 7.5m
- 4m x 15m x 5m

These examples are illustrative only; however, the total volume will not exceed 300 m³.

Irrespective of the configuration, no individual waste pile will exceed the following maximum individual dimensions:

- Height: 4 metres
- Length: 20 metres
- Width: 10 metres

Each waste pile:	Parameter Typical/Maximum
Maximum volume: 300m ³	300m ³
Maximum height: 4m	1m - 4m
Maximum length: 15m	15m - 20m
Maximum width: 5m	5m – 10m
Maximum units per pile: 300 (1m ³ units)	300 (1m ³ units)

Table 2 – Waste Pile Maximum Parameters

Aisle walkways will be maintained between waste piles to allow for routine inspection and thermographic checks. These aisles will also ensure adequate access for fire detection and firefighting activities.

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A separation distance of at least 6m will be maintained at all times between all waste piles. This separation distance can be seen on the site layout plan(s) providing in the Appendix A at the end of the document.

Given that piles consist of single 1m³ units which do not form one continuous pile in the same way that many other sites operate, and that piles are stored below the maximum volumes stated in the FPMP guidance, the risk of fire has been reduced significantly. In addition to this, 6m separation distances are maintained at all times between piles which seeks to further reduce the risk of fire.

By adhering to these principles, the ability to access and extinguish waste should any incidences occur is greatly improved.

5.4 Storage Buildings

The storage buildings are constructed with brick and corrugated metal walls, which provide inherent fire resistance and prevents fire spreading between waste piles. Routine thermographic camera inspections are carried out to identify abnormal heat sources; if any hotspots are detected, the quarantine procedure is initiated immediately to isolate the material and prevent fire spread to the building structure.

Waste will be stored no closer than 6 metres of the building walls to further minimise the risk of fire spreading to the fabric of the building. In addition to this:

- Waste areas are physically separated from office areas by walls, and escape routes from offices are not impeded by any obstacles and do not pass through the waste storage;
- Smoke ventilation is provided to the storage buildings via roller shutter doors and roof vents. This will aid in firefighting by the FRS.
- All escape routes, fire exits, call points and extinguishers are kept clear at all times. No escape or evacuation routes around the site or within buildings will be compromised by the storage layout; and
- Electrical panels and heaters will be kept free from waste, including dust and packaging. Dust is not expected to be a concern on site given the non-dusty nature of the WEEE waste accepted on site.

Occupied buildings and high asset areas have been considered during the selection of waste storage areas. All occupied buildings and high asset value equipment have been sited away from the waste storage areas as to preserve equipment integrity and reduce risk to life during a fire scenario.

5.5 Fire walls and bays.

There are no fire walls or bays constructed on site. All waste is stored on concrete flooring in variable packaging. There will be single waste piles (300m³) within any given building during normal operations, with additional waste piles stored in buildings if the 6m separation distance can be safely maintained.

5.6 Monitor and Control of Temperature

The primary method for monitoring temperature of waste piles on site will be via use of routine thermographic camera. Inspections are carried out using portable handheld imaging equipment to identify abnormal heat sources; if any hotspots are detected, the quarantine procedure is initiated immediately to isolate the material and prevent fire spread to the building structure or igniting neighbouring piles. Given that waste is stored in small 1m³ units or smaller, handheld thermal imaging cameras are deemed suitable for detecting hotspots in the waste.

When monitoring waste piles, key indicators are in place to determine when action should be taken. These indicators are outlined in Table 5. Should temperatures be recorded during the thermographic camera inspections that meet or exceed the threshold stated, the appropriate action will be undertaken accordingly.

Thermographic Checks outline the process for conducting Thermographic Checks.

Indicator	Action
>50°C	Increase monitoring to a minimum of once per hour
>70°C	Surround stockpiles will be moved and the temperature-exceeding waste unit(s) will be isolated in-situ. Increased monitoring at once per hour will be undertaken.
Visible smoke	Activate site's emergency plan. This includes the evacuation of site to the nearest assembly point, calling the FRS, isolating services, closing penstock valves, and alerting neighbours where necessary

Table 5 – Thermographic Escalation Thresholds

As waste is not stored in one continuous pile, it is highly unlikely that large numbers of waste units (i.e. 1m³ units) will exceed the key indicators at any given time. As such, all temperature control will be undertaken in-situ.

In the event of an exceedance of 70°C, the designated quarantine area will be utilised to move compliant waste units away from units that have exceeded the key indicators. This prevents unnecessary risks from moving hot waste around site. The quarantine area has been designed to hold 50% of the largest waste pile (150m³) and has a separation distance of 6m to prevent the accidental spread of fire. This has been detailed further in Section 10 below.

Given that waste is stored in small 1m³, turning or rotating the pile is practically not feasible. However, their small sizes ensure the risk of self-combustion is low.

Site staff are trained to detect hotspots through a combination of theoretical and practical hands-on training. “Toolbox talks” are delivered to ensure that all site staff know the importance of monitoring and controlling temperature, how often monitoring should be undertaken and what to do if temperatures exceed the thresholds stated above. All staff will also be trained on how to conduct inspections of waste piles and accurately record and report on data.

As part of this training, all staff are required to demonstrate understanding prior to training sign-off by senior staff. Regular refresher training is provided to staff to ensure all skills remain current and reflect the requirements stated in the FPMP guidance.

5.7 Moving Waste in Event of Fire

In the event of a fire, waste storage containers will be moved to prevent fire spreading. This will be undertaken only if it is safe to do, and as instructed by the site manager:

- Assess fire size – the size of the fire, or potential fire will be assessed prior to any waste units being moved. Waste will not be moved in the event of a large fire, when multiple waste units are ablaze. In this instance, the FRS will be called;
- Relocation – a forklift will be operated by trained site staff to remove unaffected neighbouring units to prevent the fire spreading. Unaffected units will be temporarily stored in the quarantine area. Any affected units will remain in-situ as to prevent spreading fire by moving hot or burning waste. If possible, affected units will be moved into a central position within the building as to increase distance between the unit and the building structure. This will only be done if it is safe to do so. If relocation is not possible, unaffected waste units may be dampened in situ to prevent fire spread;

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- Fire suppression – once isolated, fire suppression will be used on affected units of waste if safe to do so to attempt to control any fire or signs of fire. Fire suppression will largely be in the form of fire extinguishers and fire blankets. If onsite suppression is unlikely to be sufficient in extinguishing a fire, the FRS will be called immediately for assistance.
- A 6m separation distance will be maintained at all times between affected units and cooler, unaffected units.

5.8 Vehicle Movements

There will be a designated one-way route system on site. This vehicle route has been designed to allow smooth flowing site traffic around site, prevent accidents and collisions, and improve overall safety. All delivery vehicles will be escorted on site by site personnel as to ensure the one-way system is maintained and that delivery vehicles arrive at the appropriate location. All pedestrian walkways will be separate from vehicle movements as to allow the safe movement of staff and visitors across site.

Clear emergency access lanes maintained at all times, and priority access will be given to the FRS in the event of an incident requiring their attendance. In the event of a fire, all non-essential vehicle movement will be halted and unrestricted access given to the FRS upon their arrival to allow them to reach the location of the fire via the shortest, most efficient route.

5.9 Staffing and Management

The [REDACTED] and [REDACTED] operation will have a dedicated team of staff who will undertake operations by following documented operating procedures. Staff will be competency assessed against these documented procedures every three years or following any update / revision of these documents as a result of any process or equipment changes.

The overall management of [REDACTED] and [REDACTED] will fall under the operations management structure that exists for The Royal Mint site, in compliance with and certified to the following ISO Standards ISO14001, ISO45001, ISO9001, ISO50001 and ISO27001.

5.10 Plant and Equipment

The [REDACTED] operation will be a manual disassembly operation whereby hand tools will be used to dismantle the received waste. There will be limited electric fork truck / hand truck activity in the area, which will be utilised for moving and locating delivered and dismantled WEEE waste. Charging of the fork truck / hand truck equipment will take place in a building away from any production or storage areas.

Mobile plant will be parked at least 6m from the waste piles when not in use as to prevent accidental ignition by hot exhausts. No mobile plant will be permanently stored in the waste storage areas.

The [REDACTED] process, as originally applied for in 2023 permit variation ([REDACTED]), is outlined below:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.11 Hours of operation

The [REDACTED] and [REDACTED] operation will mostly be undertaken between the hours of [REDACTED] Monday to Friday. Outside of these hours, the buildings will be monitored by the onsite Security department via CCTV.

5.12 Market Context and Demand Outlook

As part of the FPMP requirements, foreseeable market conditions are required to be assessed to avoid situations where waste is allowed to build-up on site following changes to market demand. Assessing these conditions aims to prevent such situations or mitigate against them ahead of time.

The UK electronic and electrical equipment waste market continues to show sustained growth, underpinned by increasing consumption of electrical equipment and shorter product lifecycles. The UK generates approximately 1.6 million tonnes of e-waste annually, with volumes increasing by 3–5% per year, making it one of the fastest-growing waste streams.

Recent data also shows that WEEE collections increased to c.496,000 tonnes in 2024, with year-on-year growth and targets being exceeded, indicating continued expansion of the formal recycling market.

This growth, combined with relatively low effective recycling capture rates, highlights a structurally increasing and under-served feedstock market, providing confidence in the long-term availability of material.



5.12.1 Material suitability

Our process has been specifically designed and optimised for the treatment of electronic waste, including printed circuit boards and associated fractions. The process is proven to effectively separate and recover metal-bearing fractions from e-waste streams

5.12.2 Supply Chain Resilience

We have established a robust and growing feedstock supply chain, supported by a diversified network of UK and international suppliers.

- Supplier numbers and volumes have increased over recent periods, demonstrating strong market engagement
- The diversity of suppliers reduces reliance on any single source and improves resilience
- The broader growth in the UK e-waste market further supports long-term feedstock availability

5.12.3 Offtakes

There are multiple downstream offtake routes, reducing dependency on any single solution. In the unlikely event that one of the offtake routes becomes unavailable or unviable, other routes are already in place that will be able to support the export of downstream wastes.

6- Fire Detection (Section 8 of the Guidance)

The following sections details the site’s Fire Detection procedure.

The buildings benefit from site wide CCTV and smoke detection in most buildings across site including the [REDACTED] storage areas. There are currently no detectors in building [REDACTED]. Manual smoke detection by vigilant onsite site staff will be utilised instead. Building [REDACTED] will be used for storing all PCB feedstock and the Whole Unit [REDACTED] feedstock required for daily processing activities to a maximum of 100m³.

These systems will alert staff to smoke, signalling a potential fire. At the start of each working day, the building and storage areas will be visually inspected by trained members of staff to identify if there are any potential risks of fire present. This may include elevated temperatures of waste units, identified through thermographic camera inspections, or visible signs of smoke. At the end of each day, this check will be repeated as well as a check to ensure all fixed equipment is switched off. All checks will be documented via a SHE Walk in the SHE Software Portal.

Outside working hours, the buildings will be monitored by the onsite security team via CCTV. In addition, security will be responsible for responding to any smoke detector activations within each building, as notified through the sites central detection system.

This level of detection is deemed appropriate given the risk that the waste presents. This is, in part, due to the storage of waste in small, low-volume individual units, short storage times and storage within buildings.

System	Appropriate?	Justification
Spark detection	No	Manual dismantling, no shredding.
Smoke Detectors (except Building [REDACTED])	Yes	All waste storage buildings benefit from smoke detectors. Building [REDACTED] will only store all PMR Dry and [REDACTED] daily processing feedstock.
Manual Smoke Detection	Yes	24hr Security Patrols. Reduce risk with no [REDACTED] feedstock stored overnight in Building [REDACTED].
Visual Inspection	Yes	Visual inspections carried out formally on a daily basis. Site staff are trained to be vigilant throughout the day to look for signs of combustion.
CCTV Imaging	Yes	Waste storage areas are fitted with CCTV cameras which are monitored daily by security staff. Signs of smoke or flames will trigger an emergency response.
UV/IR flame detection	No	Storage-only operation
Infrared detection	Yes	Handheld portable thermal camera inspections used by site staff

Table 6 – Detection Systems Considered

7- Fire Suppression (Section 9 of the Guidance)

7.1 Automatic Suppression Systems

Automatic suppression systems have been considered for operation on site. However, given the low risk of fire arising from the acceptance and storage of waste, automatic suppression has been deemed disproportionate to the activity. As such, no automatic suppression systems have been deployed on site. Instead, the site has opted for a series of manual suppression systems including the use of fire hydrants and fire extinguishers.

7.2 Manual Suppression Systems

Fire extinguishers are located at the entrance to each building and are signposted within the building to allow for quick access in the case of early suppression for small to medium fires. Use of fire extinguishers is only permitted if it is safe to do so. Fire blankets will also be located in the same place as the fire extinguishers. Fire extinguishers will be primarily used in extinguishing small fires on site.

The site benefits from a Fire Hydrant Ring Main around the site. Fire hydrants are located at strategic points around the site to provide quick and easy access to the FRS for readily available water supplies for fighting fires. The closest hydrants to the [REDACTED] areas are fire hydrants [REDACTED] and [REDACTED]. Building [REDACTED] is more closely supported by [REDACTED] and [REDACTED]. These locations are identified in the appended location plan at the end of this FPMP. Fire hydrants and water cannons play a pivotal role in fighting medium and large fires, both to support with direct fire suppression and defensive firefighting.

Defensive firefighting will be carried out only if it is safe to do so. This will involve the use of water to dampen surrounding waste units if they could not be removed, and the building infrastructure to protect about direct or radiative heat damage or spread of fire.

This level of suppression has been agreed and approved by the site's insurance provider, and they are satisfied with the arrangement and agree with its proportionality relevant to the risk. Operating in this way will not pose a risk of invalidating any insurance. All fixed equipment is certified under UKAS-accredited schemes.

System	Appropriate?	Justification
Sprinklers	Not proportionate	Low pile height (4m); Low self-combustion risk; Maximum pile size no larger than 300m ³ ; and One pile size per building during normal operations.
Manual open deluge	Not required	Water Cannons, fire extinguishers & hydrant access deemed sufficient; Maximum pile size no larger than 300m ³ ; and One pile size per building during normal operations.
Deluge/water spray	Not required	Active firefighting strategy in place as detailed below in section 7.

Fire Hydrant Ring Main	Yes	The hydrant ring main will be utilised in medium/large fire events, for both direct fire suppression and defensive firefighting to protect surrounding waste piles and building infrastructure.
Fire Extinguishers	Yes	Allows for small scale suppression for individual units by site staff and may prevent fire spread by providing early suppression
Fire blankets	Yes	Allows for fast-acting suppression of small.

Table 7 – Suppression Systems Considered

8- Firefighting Strategy (Section 10 of the Guidance)

8.1 Strategy Overview

The site has been designed to allow active firefighting in line with the FPMP Guidance. Active firefighting is defined as having the resources available at all times to fight a fire during operating hours and when the site is closed. No staff member will be instructed to fight fires where it puts them or others at risk.

The site has a variety of plant and equipment that can be used to move unaffected waste units to the quarantine areas to prevent further combustion, as well as the appropriate level of staff and available water supplies to instantly manage a fire outbreak. Any affected units will be managed in-situ within the storage buildings. Primarily, forklifts will be used where possible to isolate any burning or at-risk units. All plant used will have suitably enclosed cabs and fire and heat protected hydraulic systems to protect the operator from potential harm.

The site will regularly review the resources available to allow for active firefighting to take place. This will include ensuring adequately trained staff are available and ensuring available water supplies are present and accessible by the site and/or the FRS. If required, the site also has the financial provisions to fulfil their obligations in managing the remedial clean following a fire and repairing/replacing the necessary infrastructure to allow future safe storage.

Given the nature of the waste storage activity, The Royal Mint will operate a manual fire suppression system in the form of extinguishers and fire blankets, along with operation of onsite water cannons as necessary. During large fires, this is only to be used by trained on-site staff if it is safe to do so as an immediate measure until the Fire and Rescue Service are in attendance on site.

Fire extinguishers, and where appropriate, fire blankets are fitted near the entrance to the waste storage buildings also situated at various points in the operational and storage areas. [REDACTED] in Appendix A at the end of this plan details the locations of all waste treatment and storage on site.

5. *Fire Hydrant Layout* in Appendix A details the locations of fire hydrants to be used in the event of a fire from waste storage. Fire extinguishers are located on every building fire exit and local to any process where it has been deemed necessary from a Fire Risk Assessment or Task Risk Assessment.

In the event of a small fire, trained staff are permitted to fully extinguish a fire if it is safe to do so using the appropriate suppression system relative to the scale.

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In the case where it is not safe for site staff to attempt to extinguish the fire, the Fire and Rescue service will be called, and the site will be evacuated as per The Royal Mint's management procedures. - For the current version of these procedures refer to the Safety Management System – SMP 4.9.3 Emergency Management Plans. The risk to people from a fire at site remains low due to this strategy, and the prohibition of site staff attempting to extinguish a fire in unsafe conditions seeks to further protect site staff. Due to the multiple buildings on site, and 6m separation distances between many of them, the risk of fire spreading to other buildings is low.

All fire suppression measures will be covered and certified by a third-party certification scheme and regularly tested and maintained in-line with the manufacturer's requirements.

To ensure the site is covered during out-of-hours, security staff will be trained in the safe operation of all fire suppression methods. In addition, security staff will also be trained in the site's fire prevention plan and be subject to the same standards as operational staff when it comes to firefighting techniques and the site's own procedures.

Active firefighting with containment and defensive boundary cooling where required.

Resources available:

- On-site fire extinguishers;
- Trained staff;
- Mobile Plant;
- Fire ring main;
- External trunk main (2,000L/min);
- 610m³ fire water containment capacity; and
- Emergency tankers.

All of these resources are deployed in combination with one another to provide an effective firefighting strategy to manage the unlikely risk of fire arising from WEEE waste stored on site. Given the low risk of the waste stored on site, this combination of measures will be sufficient and effective in meeting the FPMP objectives and reducing potential impact to the environment, as well as nearby people and property.

If a fire were to occur on site, it is predicted that this fire would be small to medium in size. This is due to waste being stored in small 1m³ units which both minimises the risk of self-combustion in the first instance, and lowers the risk of fire spreading rapidly throughout the pile, as each pile is non-continuous due to the storage arrangement. As all waste is to be stored internally, a level of protection is offered to waste piles against adverse weather conditions, like extreme heat. As such, weather conditions will not likely play a factor in a potential fire outbreak on site since waste will not routinely be exposed to extreme abiotic conditions. All waste will be stored in flat racking on even ground, internally. Therefore, local topography will not play a factor in fire outbreak or fire spread on site, as all waste is stored on flat even surfaces within buildings.

8.2 Techniques Employed

Depending on the scale of fire, the following techniques will be employed:

Small Fire:

- Fire Extinguishers/blankets utilised in situ;
- Manual isolation; and
- Remove adjacent units.

Medium Fire:

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- Suppression from the hydrant supply will be used;
- Remove adjacent units and unaffected containers; and
- Defensive firefighting, including the dampening of the surrounding surfaces to prevent direct or radiative heat damage from large fires. Where surrounding waste piles cannot be removed, these piles will be dampened in an attempt to prevent fire from spreading to adjacent piles.

Large Fire:

- Activate the site's emergency plan, including the evacuation of site to the nearest fire assembly point, and alerting the FRS
- Defensive firefighting, as described above;
- Protect exposures; for example by cooling or wetting down adjacent equipment, structures, stored materials, or battery containers with water where safe to do so, and by removing or relocating nearby combustible materials (such as packaging, pallets, or waste containers) to prevent fire spread where this can be carried out safely;
- Contain potential fire water runoff; and
- Allow controlled burn if required under the Fire and Rescue Service direction.

8.3 Considerations Applied

The strategy considers:

- WEEE composition;
- Potential plastic smoke toxicity including Persistent Organic Pollutants (POPs);
- Water containment capacity;
- Prevailing south-westerly winds;
- Local topography (hardstanding, drainage control); and
- Proximity to SSSI and LWS receptors.

8.4 Actions if Fire Occurs

- Raise alarm;
- Take appropriate firefighting measures as detailed in section 7.2 above;
- Call 999 (Fire & Rescue Service);
- Evacuate to assembly point;
- Isolate utilities;
- Close penstocks;
- Implement containment plan;
- Notify NRW; and
- Suspend waste acceptance if required.

9- Water Supplies (Section 11 of the Guidance)

The FPMP requirements state that water supplies must be provided for the equivalent of 2000 litres per minute for a 300m³ pile for at least 3 hours. Each storage building has the capacity to hold a 300m³ pile. Therefore, the site is required to supply, at a minimum, 2000 litres of firefighting water per minute, or 360,000l over a period of 3 hours.

Buildings	Effective Pile Size	Water Requirement per minute (l)	Water Requirement per hour (l)	Water Requirement for 3 hours (l)
█	Maximum 300m ³	2000	120,000	360,000

Table 8 – FPMP Water Requirement

The Royal Mint has a dedicated fire ring main, fed via a 150mm diameter spur from a 300mm diameter trunk main in Heol-y-Sarn Road outside of the site. Site data provided indicates that the site ring main can provide a minimum total discharge of 30,000 litres/hour (l/hr) up to 50,000l/hr which equates to an average of around 500 - 833 litres per minute. This figure is a maximum flow shared between however many hydrants are used. Over three hours, as per the FPMP requirements, this water supply can feed up to 150,000 litres of water to site.

There is a fire hydrant (█ on The Royal Mint site plan) located █ m south of the █ waste building. The fire hydrants comply with the British Standard 750 and is readily available and accessible during an emergency. This hydrant has been previously assessed by the South Wales FRS and complies with the necessary standards.

In a severe fire event, additional flow can be obtained directly from the external trunk main B, via lengthy hose extensions into the site. This main is recorded as being able to provide up to 2,000l/min, or 360,000l over 3 hours, from which the site network flow will be taken. This is also equivalent to the maximum discharge of two ground monitor hydrants or the supply of two South Wales Fire and Rescue Service pumps.

As a combined water supply, The Royal Mint site therefore has over 500,000 litres of water available over a 3-hour period, meaning a vast excess of fire-fighting water at its disposal in a worst-case scenario outcome.

It is highly unlikely, given the low risk identified on site and the storage arrangement of the waste, that all waste piles will be affected during a single fire outbreak.

10- Managing fire water run-off (Section 12 of the Guidance)

The site is required to store all contaminated firewater generated on site. This means the site must provide a minimum of 360m³ storage capacity, in line with the minimum water supply requirement.

An Emergency Response Plan (EP3) is in place for managing firewater within the catchment area. The plan outlines the containment capacities of all buildings, which serve as immediate firewater storage before the water reaches the penstocks. If required, these buildings can also facilitate the pumping of firewater from the holding tanks into the buildings. Additionally, the plan includes the mobilisation of two emergency tankers (within 1hr) to provide supplementary firewater storage. As a final contingency, a designated sacrificial area may be used for excess firewater runoff, subject to approval from NRW.

Contaminated runoff of fire water, or contaminated surface water, will not enter into the public sewer system, and instead will be held within the onsite drainage system by closing of penstocks, or contained locally within the buildings as they are able to provide a high level of storage availability through the use of bunds. As such no written agreement is required with the sewerage undertaker for contaminated runoff. Uncontaminated surface water is permitted to be discharged via the environmental permit. Table 9 and Table 10 outlines the storage capacity of both the buildings and drainage system before penstock closure.

A sacrificial area of site will not be required, given that the proposed storage measures exceed that of which is required by the FPMP guidance.

The buildings which the [REDACTED] waste is handled is deemed the catchment area. In this area, [REDACTED] penstocks are situated at various locations to collect all potentially contaminated surface water and act as the final defence against the release of this material offsite.

The water catchment area is split naturally into two parts, the east side and the west side. To cover this, the tertiary containment operates as two separate systems each dealing with various sections of the storm water network. These flow into distinct holding or discharge sumps that are under conductivity and pH control (two conductivity probes for each sump) of a penstock gate which is normally held closed.

Where high conductivity above six hundred micro siemens or pH out of range is detected, valves in the discharge line from the contaminant sumps are closed and the effluent is directed to either one of the catchment tanks. In addition, an alarm is sounded notifying persons of this action. The level in the drain or sump will rise until the effluent overflows into one of the two off-line tanks. Each tertiary containment system has been sized such that there is more than 1 hour's capacity for a once-in-five-year storm event.

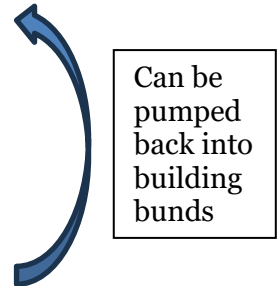
The measures described above provide a fire water holding capacity of 610m³. Made up of the list of buildings and holding tanks below. Should a fire occur in Building [REDACTED] or [REDACTED], contaminated water will flow into the penstocks which can be pumped into other local containment in adjacent buildings should more storage volume be required.

Building No	Local Containment Capacity (bunds)
█	70m ³
█	70m ³
█	200m ³
█	70m ³
Total	410m³

Table 9 – Local Containment Capacity

Storage Tanks	Containment Capacity
Penstock █	80m ³
Penstock █	80m ³
Emergency Tankers	40m ³
Total	200m³

Table 10 – External Containment Capacity



In the Building █ catchment area, there are containment basement areas to collect all potentially contaminated surface water and act as the final defence against the release of this material offsite. In the event of a fire, the water will be stored in these basement catchments then pumped out and removed either offsite by third-party or through the water treatment plant.

Building No	Local Containment Capacity (basement bunds)
I	Service Trench - estimated at >30m ³ Tandem Mill - 40m ³ Mill Coolant - 166m ³ Cold end sump - 120m ³ Windy Tunnel Containment - 60m ³
Total	416m³

Table 11 – Building 1 Containment Capacity

Building █ is required to store all contaminated firewater generated on site. This means there must be a minimum of 360,000m³ storage capacity, in line with the minimum water supply requirement.

11- Quarantine Area (Section 13 of the Guidance)

The site has implemented the following quarantine procedure for fire affected waste prior to new waste being accepted on site:

- In the event of a small fire, or a fire that has been recently detected, the site will attempt to extinguish the fire in-situ providing it is safe to do so. Where possible, surrounding waste piles (in the form of pallets, boxes or flexible IBCs) will be removed from the immediate vicinity to prevent fire spreading;
- Where relocation of unaffected units is not possible, or safe to do so, surrounding waste units will dampened with the use of fire extinguishers to prevent fire spreading; and
- As a last resort, the whole building will be quarantined and access will be restricted to all staff and visitors, except the South Wales Fire and Rescue Service. As the building is isolated, there is minimal chance of fire spreading to other non-affected areas and therefore the site as a whole will remain relatively safe from the effects of fire.

It is highly unlikely, given the storage arrangement of the waste, that the whole building will be affected in the case of fire outbreak in any one of the individual waste “units”.

11.1 Designated Quarantine Area


The designated quarantine area will only be used for material with a suspected fire risk. The quarantine area will be strictly used for storing waste with a suspected fire risk, or signs of a fire. Signs of fire or potential fire will include (but is not limited to) visual flames, heat detectable by the skin or the thermographic monitoring, and smoke. This will be determined by site staff who are trained in the visual inspection of waste on site. Any site staff can raise the alarm at any sign of fire.

The identified quarantine area is located outdoors and positioned at least 6 metres away from buildings, stored materials, and other potential ignition sources. The quarantine area is situated north of the penstocks to ensure that any fire-water run-off is managed appropriately and captured within the existing drainage and containment systems.

Materials placed in quarantine due to fire-related concerns will be removed without delay in accordance with the emergency response procedure. Operational quarantine for non-fire reasons will be managed so that materials are cleared as soon as practicable, ensuring the area remains available for use at all times.

All stock placed in quarantine will be clearly separated both physically and within the ERP system, allowing for full traceability and location tracking at any given time. This ensures compliance with the site’s control measures.

All staff have been instructed to remain vigilant for any signs of fire, ensuring that risks are addressed promptly.

 in Appendix A shows the location of the proposed fire-quarantine area .

12- Site Security

The Royal Mint is a high security site, with minimal entrances and robust security systems that reduce the chances of illegal entry to a minimum.

Road access to the site is from the Llantrisant Business Park dual carriageway at the south boundary. This road joins the A4119 at the Ynysmaerdy roundabout. The main entrance is security controlled 24/7.

There is also an alternative access point located to the west side of the site, which is used in the event of the main entrance to the site being compromised.

The entire site is surrounded by two lines of fencing at 2.4 m high with CCTV cameras within the fence lines at various locations. The site cameras are monitored 24/7 by the onsite security team.

13- During and After an Incident

13.1 During an Incident

In the event of an emergency that significantly disrupts the business activities of site, the on-site security will close the site to all vehicle traffic, with the exception of emergency response vehicles.

In the event of any incident, the impact on receipt of [REDACTED] and [REDACTED] waste would be very small and it is expected alternative collection arrangements can be easily made.

If a major incident is underway at site, vehicles would be rejected from site and returned to the site of origin. Incoming waste due to be dispatched from the site of origin will be postponed until the incident has been resolved.

If the delivery has already arrived at the site. Waste will remain on the vehicle until it is safe to unload or instructed to deliver to a suitable alternative site.

On site personnel are trained in spill and emergency response which is tested via an assessment periodically.

13.2 After an Incident

Following an incident, the site will likely be contaminated with by-products of combustion. In order to decontaminate the site and restore its previous state, a third-party contractor specialising in decontamination activities relevant to the nature of the incident will be sought and requested to attend site to carry out the necessary decontamination activities.

Decontamination activities may include:

- Disposing of any waste material generated from the incident in a manner appropriate to the nature of the material via an authorised waste carrier;
- Removing contaminated firewater if it cannot be pumped into the onsite effluent treatment plant; and
- Cleaning all drainage systems, bunds, hardstanding surfaces or buildings that may have contacted contaminated material during the incident.

Decontamination activities will be directed by the suitably contracted third-party provider.

In addition to decontamination, and prior to the site returning to operations in the [REDACTED] area, the following measures must be undertaken:

- Any damage to the infrastructure will be fully repaired before the commencement of operations; .Any incident which occurs at the site will be fully investigated by senior members of staff to determine the cause and likelihood of a similar incident occurring in the future; and

All incidents will be reported to NRW as soon as reasonably practicable. The site will update the Site Condition Report to reflect any potential contamination that may have occurred as well as the measures taken to remediate any impacts.

14- Review, Training and Site Monitoring Policy

14.1 Live Document Commitment

The Royal Mint confirms that this FPMP is treated as a live working document.

The FPMP forms part of the site's Environmental and Safety Management Systems and is subject to:

- Formal 3 yearly review as a minimum;
- Interim review following operational or regulatory changes;
- Review following drills, exercises or inspections; and
- Immediate review where trigger events occur (see Section 13.3)

The controlled version of the FPMP is:

- Held electronically within the site document management system;
- Available in hard copy in Building ■ and Building ■ (Security Lodge – Emergency Room); and
- Accessible to all relevant personnel.

All staff are informed during induction where the FPMP is located and how to access it.

14.2 Testing and Exercising the Plan

To ensure the effectiveness of this FPMP and staff competence:

- Fire drills are undertaken at least annually;
- Table-top emergency response exercises are completed periodically;
- Practical containment and spill response exercises are carried out;
- Penstock closure procedures are periodically tested;
- Out-of-hours response scenarios are rehearsed with Security personnel; and
- Where practicable, liaison exercises are facilitated with South Wales Fire and Rescue Service.

Outcomes from all exercises are recorded. Lessons learned are incorporated into revised procedures where necessary.

14.3 Mandatory FPMP Review Triggers

The FPMP will be formally reviewed and updated as required if any of the following occur:

14.3.1 Fire Incident

Following any fire (including minor or contained incidents):

- A root cause investigation will be conducted;
- Fire prevention and mitigation measures will be reviewed;
- Staff performance and response effectiveness will be evaluated;
- Corrective and preventive actions will be implemented; and
- The FPMP will be revised where required.

14.3.2 Increase in Waste Volumes

Where increased storage or throughput is proposed:

- Maximum stock volumes will be reassessed;

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- Pile dimensions and separation distances will be validated;
- Water supply and containment calculations will be reviewed; and
- Monitoring frequencies may be increased.

14.3.3 Site Infrastructure Development

Where new buildings, extensions or structural changes are introduced:

- Site plans will be updated;
- Fire spread risks will be reassessed;
- Drainage and containment systems will be reviewed; and
- Detection and suppression requirements will be evaluated.

14.3.4 Installation of New Equipment or Plant

Where new plant is installed (e.g. baler, loading shovel, sort-line, trommel, dismantling line):

- Ignition source risk will be assessed;
- Electrical and isolation systems will be reviewed; and
- The FPMP will be amended if necessary.

14.4 Permit Variation Requirement

Where operational changes require a variation to the Environmental Permit, a formal application will be submitted to NRW **prior to implementing the change.**

14.5 Staff Training Policy

14.5.1 Competency and Training Commitment

All staff receive training and are competency assessed against task specific Standard Operating Procedures to ensure they can competently carry out the procedures and control measures contained within this FPMP.

Training is role-specific and proportionate to responsibility.

14.5.2 Local Induction Training

All new starters receive induction training covering:

- Fire risks associated with WEEE;
- Storage layout and separation requirements;
- Emergency evacuation procedures;
- Alarm systems and assembly points;
- Use of fire extinguishers (where applicable);
- Hotspot identification;
- Location of spill kits and fire control equipment; and
- Location and purpose of the FPMP.

No employee is permitted to work unsupervised in waste areas until induction is complete.

14.5.3 Training Records

- All training is recorded;
- Records are retained within the site management system;

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- Competency matrices are maintained; and
- Refresher requirements are tracked.

14.6 Site Monitoring Procedures

Site monitoring is undertaken before, during and after operational shifts.

14.6.1 Shift-Based Inspections

Site inspections are carried out:

- At the start of each shift;
- During operational periods; and
- At the end of each shift.

These inspections confirm:

- No identifiable ignition sources are present;
- Electrical equipment and heaters are operating correctly or switched off when not in use;
- Waste stacks comply with approved pile dimensions;
- Separation distances are maintained;
- Fire exits and escape routes remain clear; and
- Fire extinguishers and alarm call points are unobstructed.

All inspections are documented (SHE Walk records).

14.6.2 Temperature Monitoring

Temperature monitoring is undertaken using a handheld thermal imaging cameras

Monitoring confirms:

- No abnormal heat signatures; and
- No hotspots developing within waste stacks.

Temperature readings are recorded where elevated readings are observed.

Escalation protocol:

- Elevated reading → increase monitoring frequency;
- Sustained abnormal heat → quarantine; and
- Smoke or ignition → activate emergency plan.

14.6.3 Waste Residence Time Monitoring

- Waste receipt and dispatch dates are recorded electronically;
- FIFO stock rotation is implemented;
- Maximum storage time is 3 months (target 1 month); and
- Reviews of stock age are conducted.

14.6.4 Equipment Maintenance

All plant and equipment:

- Are serviced by qualified personnel;
- Subject to daily, weekly and monthly checks;

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- Have maintenance schedules documented; and
- Have maintenance records retained.

Faulty equipment is removed from service immediately.

14.6.5 Fire Prevention and Mitigation Equipment Testing

Periodic testing is undertaken for:

- Fire extinguishers (annual service);
- Smoke detection systems;
- Alarm systems;
- Penstocks and drainage isolation systems;
- Spill kits and containment equipment;
- Emergency lighting; and
- CCTV monitoring systems.

Testing frequencies align with manufacturer guidance and regulatory best practice.

Records are retained and reviewed by management.

14.6.6 Continuous Improvement

The FPMP is subject to continuous improvement through:

- Incident investigations;
- Near miss reporting;
- Audit findings;
- Regulatory feedback; and
- Industry best practice updates.

Any required updates to the following will be implemented promptly and formally documented:

- Staff training;
- Site monitoring procedures;
- Equipment maintenance schedules; and
- Storage configurations.

15- Fire and Rescue Contact Details

South Wales Fire & Rescue Service

Forest View Business Park

Llantrisant

CF72 8LX

Tel: 01443 232000

E-mail: firesafety@southwales-fire.gov.uk

www.southwales-fire.gov.uk

16- Sensitive Receptors

16.1 Sites of Special Scientific Interest within 1km of TRM

See Image 15 for Map location

Receptor contact information is maintained within our Emergency Management Plans. Notifications will be issued where deemed necessary and in accordance with the instructions of the emergency services. Communication methods may include direct telephone contact, email notifications, and, where appropriate, coordination with authorities responsible for wider public alerts.

SSSI Name (and Grid Ref.)	Distance from Site	Size (ha)	Selected Citation (Ref. [6.10])
Rhos Tonyrefail (ST005895, ST020875, ST020890)	0.1-6.2km NW	244.7	Blanket Bog
Llantrisant Common (ST048845)	0.4-1.8km SE	113.2	Llantrisant Common and Pastures SSSI – Acid grassland and bogs

Table 12 – SSSI Information

The table below shows the estimate distances of the Local Wildlife Sites relevant to the site within 2km.

Receptor	Approx. Location (Relative to Site)
Pant-y-ddraenen LWS	430m northwest
Coedcae-mawr LWS	1.20km north
Coed Castellau LWS	1.56km northeast
Nant Muchudd LWS	110m east
Llantrisant Common LWS	775m east
Careau'r-ilan Slopes LWS	2km southeast
Y Graig LWS	950m south
River Ely LWS	400m southwest
Llantrisant Forest and Craig Melyn Woodland LWS	600m southwest
Rhiwfelin Fawr LWS	840m northwest
Garth Grabben Slopes LWS	Unidentifiable
Crofft-yr-haidd marshy grasslands LWS	1.4km northeast

Table 13 – Receptors within 2km

The plan below identifies the Sites of Special Scientific Interest and Ancient Woodlands within 2km of the site.

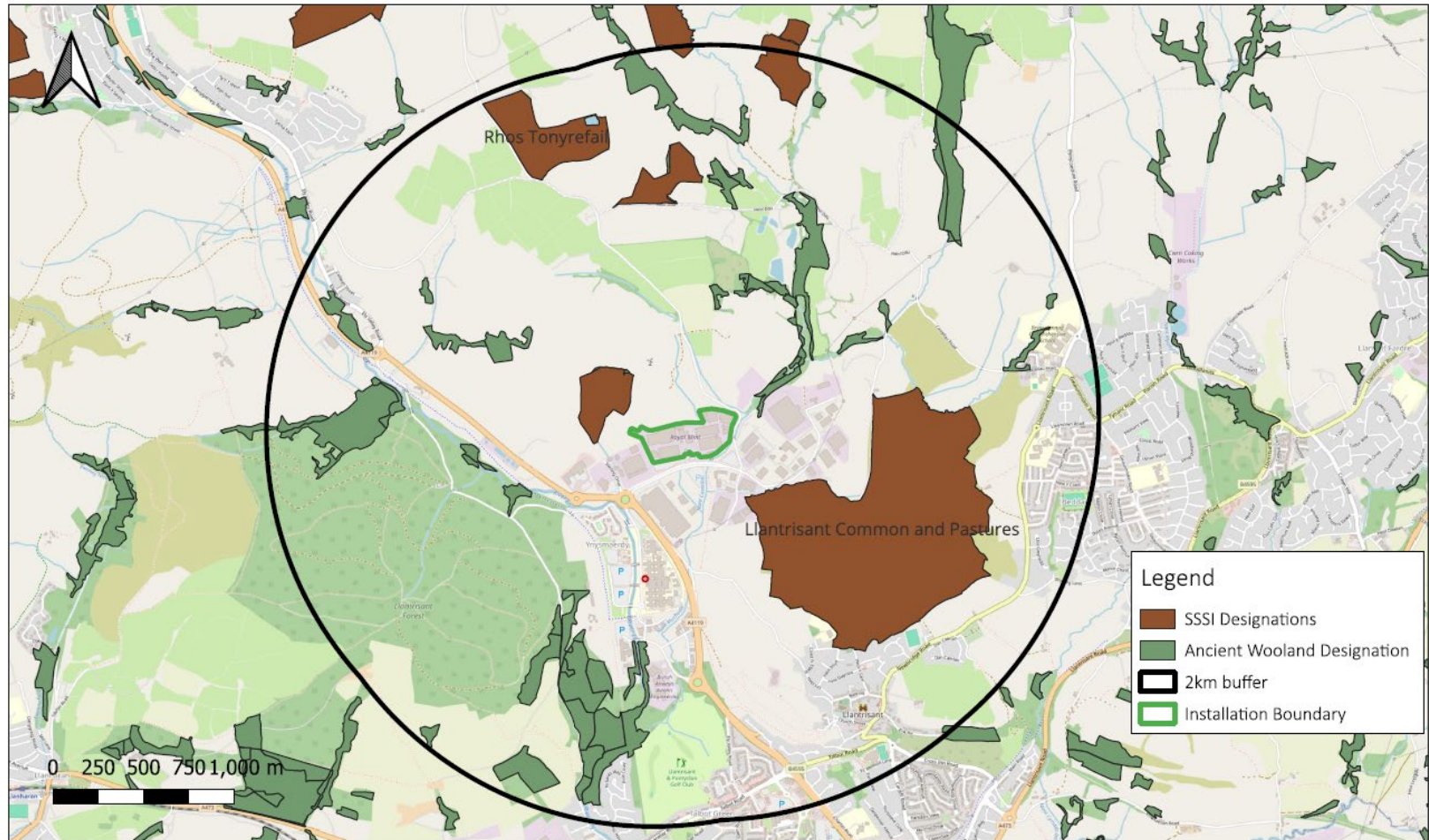


Image 14.3 – Receptors within 2km

CELEBRATE | COLLECT | INVEST | CURRENCY | SECURE | DISCOVER

16.2 Local Establishments within 1km of TRM

Establishment	No. of Inhabitants	Distance (km) from Site
Three Saints (formerly Black Prince) Public House and Motel * Special evening events could raise the average people on site from 50 to 150.	50	0.25
Rhiwfelin Fach	4	0.45
Ynysmaerdy,	150	0.75
Llwynau Farm	4	0.85
Tal-y-Fedw	4	0.80
Graig-y-Lian	4	0.90
Dyffryn-Uchaf	4	0.95
Perkin Elmer	150	0.2
RCTCBC recycling centre	12	0.1
Sigma 3	154	0.5
Tom Prichard recycling centre	10 - 15	0.2
Persimmon Homes	90	0.5
Café Diner	10 -20	0.7
Bi plas medical plastics	8 – 10	0.5
Euro performance	12	0.5
Uprise signs	15	0.5
Sun Magic	25	0.5
Country Timbers	12	0.1
Glamorgan Brewery	50 - 70	0.2
Rycon	7	0.2
Purolite	107	0.3
Edwards business Park	157	0.2
C J Bird	12 - 25	0.1
Network Scaffolding	11	0.5
Finnings CAT	30	0.4
Fire and Rescue Service Headquarters	250 - 300	0.5
Little Inspirations (crèche)	32 staff 80 children	0.2
DBK Technitherm	85	0.2
Welsh Pantry	200	0.5
Pump Station	0	0.5
F.S.G Tool & Die Ltd	45 – 60	0.5

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Establishment	No. of Inhabitants	Distance (km) from Site
MPS	25	0.5
Jordan Civils	12 - 30	0.6
Tom Prichard	40	0.6
Longbow Pub Special evening events could raise the average people on site from 50 to 150.	50	0.2
Trisant Foods	15	0.5
NHS_dialysis_Unit	30	0.5
Balmoral Tanks	25	0.2
Baps and Buns	2	0.2
Sovereign	25	0.3
Risk Monitor	16	0.3
Cj auto repair	4	0.6
Llantrisant Tyres	4	0.6
British Airways	180	0.9
Costa Coffee	95	0.9
Mps and set recruitment	50	0.9
Adj associates	18	0.9
Arthur j Gallagher	120	0.9
PHW. UNIT6.5.4	80	0.9
NFU Mutual	8	0.9
2 wish upon a star	9	0.9
Guy Bridal	5	0.9
Welsh Blood Centre	400	0.8
Markes International	102	0.6
CRGW	35	0.6
Welsh wound centre	10 - 40	0.6
Gem Motors	3	0.6
Yard Café	3	0.6
FEI Foods	40	0.4

Table 13 – Local Establishments within 1km of TRM

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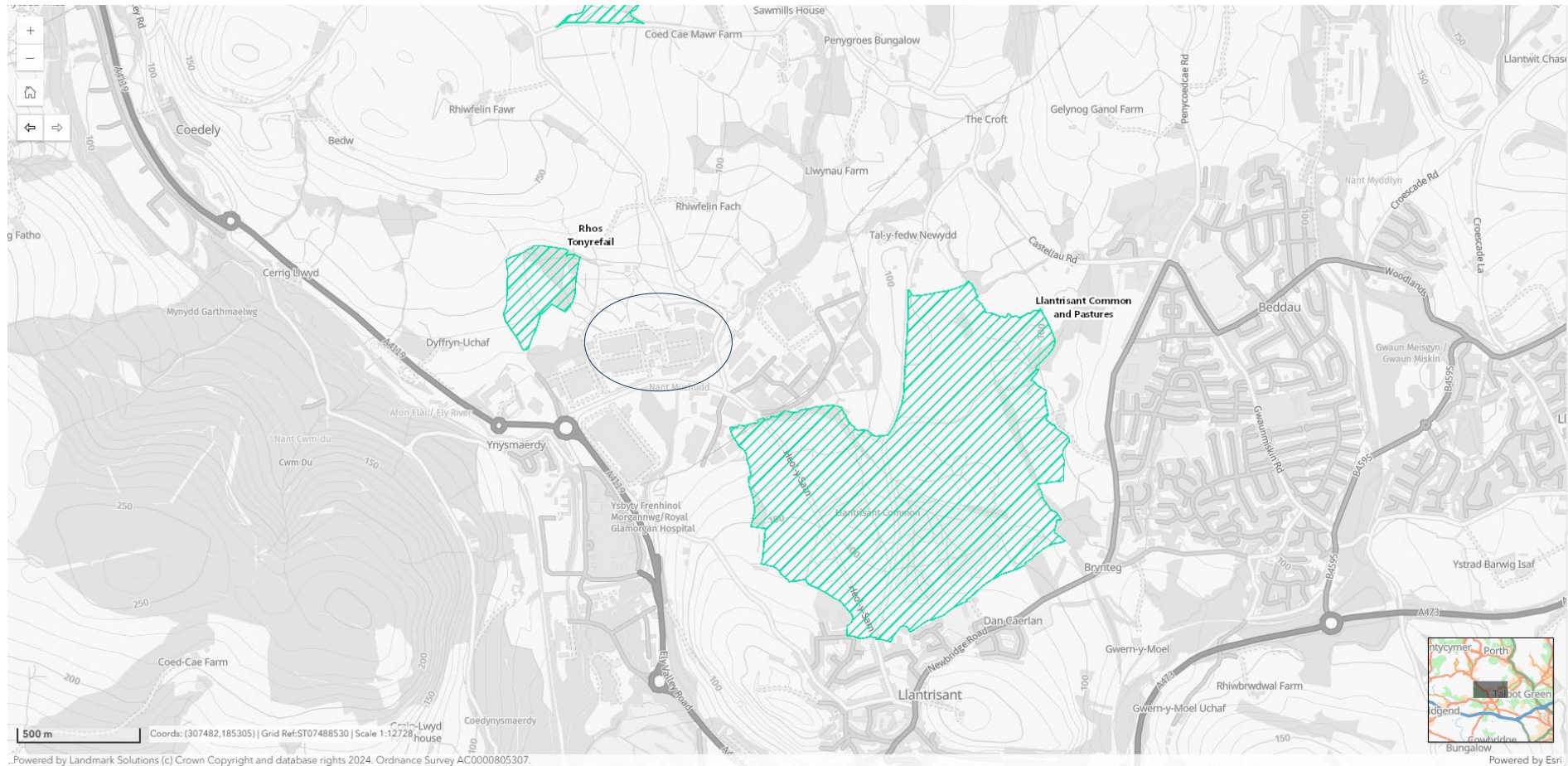


Image 15 – Map of SSSI with TRM Circled

CELEBRATE | COLLECT | INVEST | CURRENCY | SECURE | DISCOVER

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17- Appendix A – FPMP Site Plans

Appendix A contains the following site plans:

- 3. Gas cylinder storage areas.pdf, and TRM Flammable Liquids.pdf
- 4. Emergency Services Access Routes.pdf
- 5. Fire Hydrant Layout.pdf
- 6. Site Plan Showing Drainage Channels.pdf
- 7. Penstock and Storm Water Layout.pdf
- 7.1. External Spill Kit - Site Layout.pdf
- 8. Areas of Permeable_Natural Ground.pdf
- 9. ECC Building 5.pdf
- 11. Fire Assembly Points.pdf
- 12. Compass Rose with Prevailing Wind.pdf
- 13. Royal Mint Sensitive Receptors 1km update.pdf