South West Wood Products Ltd

Western Logs, Cwmavon, Wales

Fire Prevention and Mitigation Plan

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Land & Mineral Management

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Foreword

South West Wood Products Limited (SWWP) is seeking a permit for a wood recycling operation at Western Logs Site Cwmavon SA12 9AB. This document provides a bespoke Fire Prevention and Mitigation Plan (FPMP) as required by Natural Resources Wales (NRW) to accompany the environmental permit and its management system for this site.

This FPMP has been prepared taking into account the constraints of the site and its surroundings together with consideration of various fire guidance documents including those from NRW, EA, BRE and WISH. The FPMP also takes account of SWWP's experience from its other wood recycling operations which already have bespoke fire plans developed working collaboratively with various agencies including local fire and rescue services.

The FPMP deals with the practicalities of the storage requirements to maintain a viable waste wood recycling operation whilst meeting the objectives:

- minimise the likelihood of a fire happening.
- mitigate the effects of a fire on the community and the environment.
- minimise the resources of third parties required during a fire.
- Reduce clean-up and remediation costs.

1 Overview

Operator and Permit

1.1 The operator will be SWWP, who run a network of wood recycling operations, and the activities will take place under environmental permit reference no. tbc issued by NRW.

Permitted Activities

1.2 The site activities are for the storage and treatment of waste wood with sorting, separation, shredding and chipping for recovery for uses including as biofuel, board mill products, etc.

1.3 The permitted waste types to be accepted are non-hazardous wastes, see Appendix A.

Site Location

1.4 The site address is:

The Western Log Group Site, Forest Products Centre, Cwmavon, Port Talbot SA12 9AB

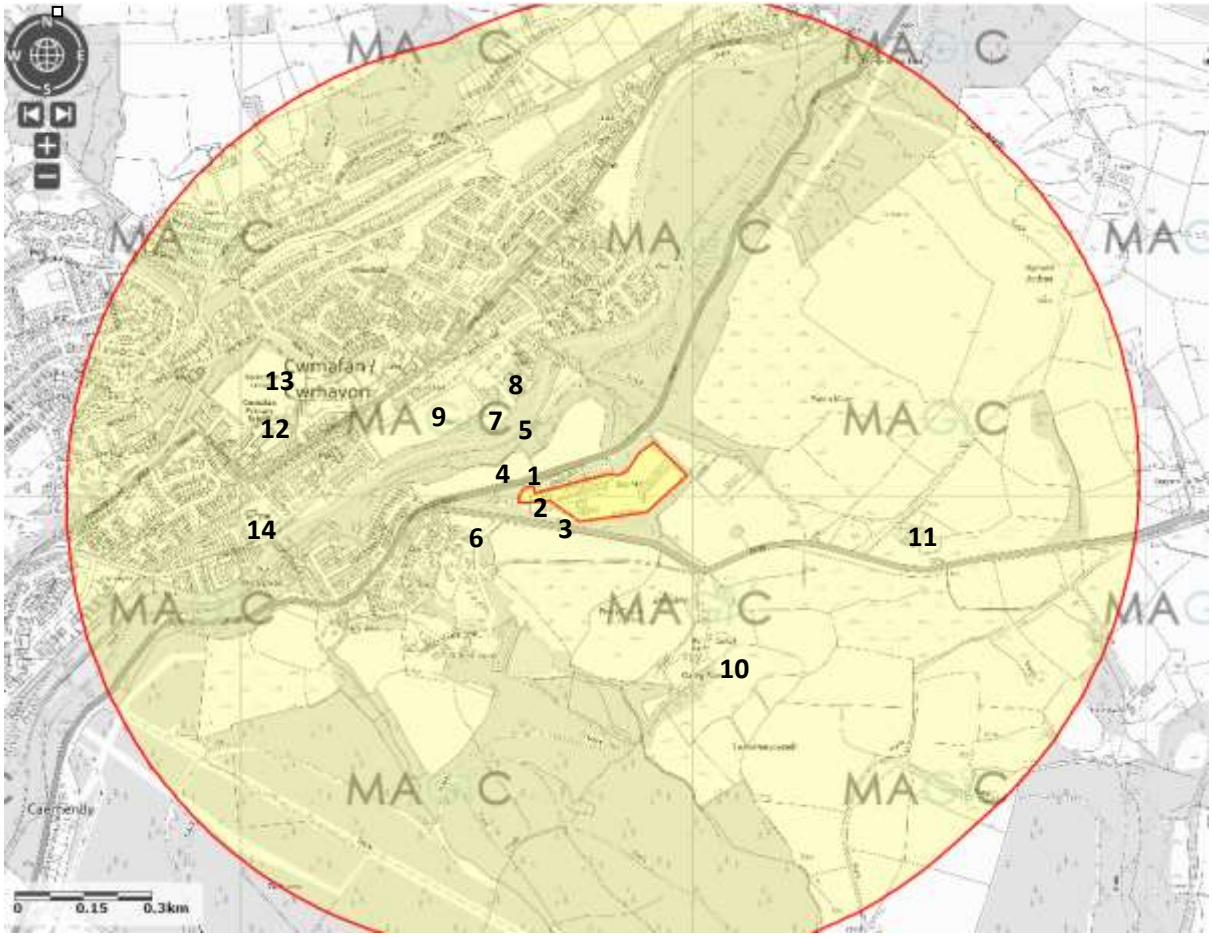
Site Context

1.5 The Western Logs Site is located in a small commercial complex on the Afan Valley Road (A4107) at Cwmavon between the A4107 to the north and the B4282 to the south.

Figure 1: Site Location (google maps)

Sensitive Receptors

Figure 2: Receptors Locations 1km (MAGIC maps)



1.6 Figure 2 presents a 1000m radius around the site to give context to the site and nearby receptors. The immediate surroundings are countryside and the village of Cwmavon. Details are presented in table 1, the residential areas include occasional commercial properties.

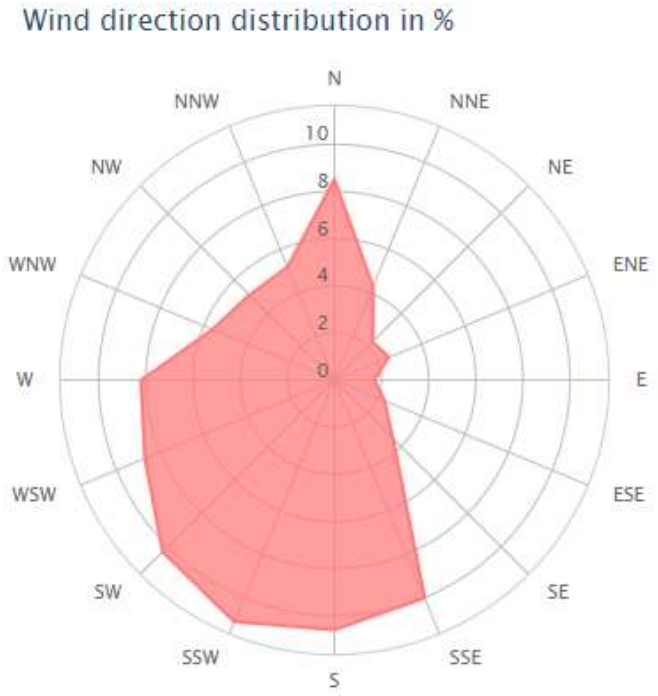
1.7 The site area does not cover any designated conservation sites but a local designated site, a Site of Importance for Nature Conservation (SINC) lies to the north of the site.

1.8 The wind direction, as shown in Figure 3, in the area is primarily from the south and south west.

Table 1: Sensitive Receptors

	Potential Receptor	From Operational Boundary	
		Distance (m)	Direction
1	A4107	10	N
2	Forest Centre	10	W
3	B4282	15	S
4	Hawthorn Close SNIC	25	N
5	River Avan	120	N
6	Residential Area: Forest Lodge	150	SW
7	Cwmavon Allotments	165	N
8	Residential Area: Cwmavon	200	N
9	Cwmavon Football Club	200	N
10	Pen Y Castell Farm	320	S
11	Cilcarn Farm	500	E
12	Cwmavon Primary School	530	NW
13	Parc Siencyn Powell Recreation Ground	535	NW
14	St Michael's Church	560	W

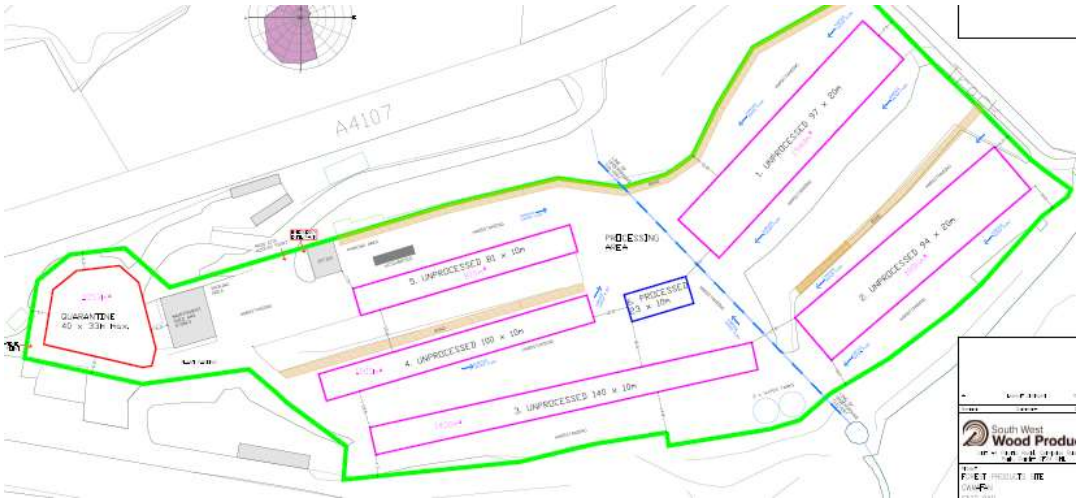
Figure 3: Wind Rose Port Talbot (3km south west of site)



Site Layout Details

1.9 Figure 4 shows the site layout plan with waste storage and quarantine areas.

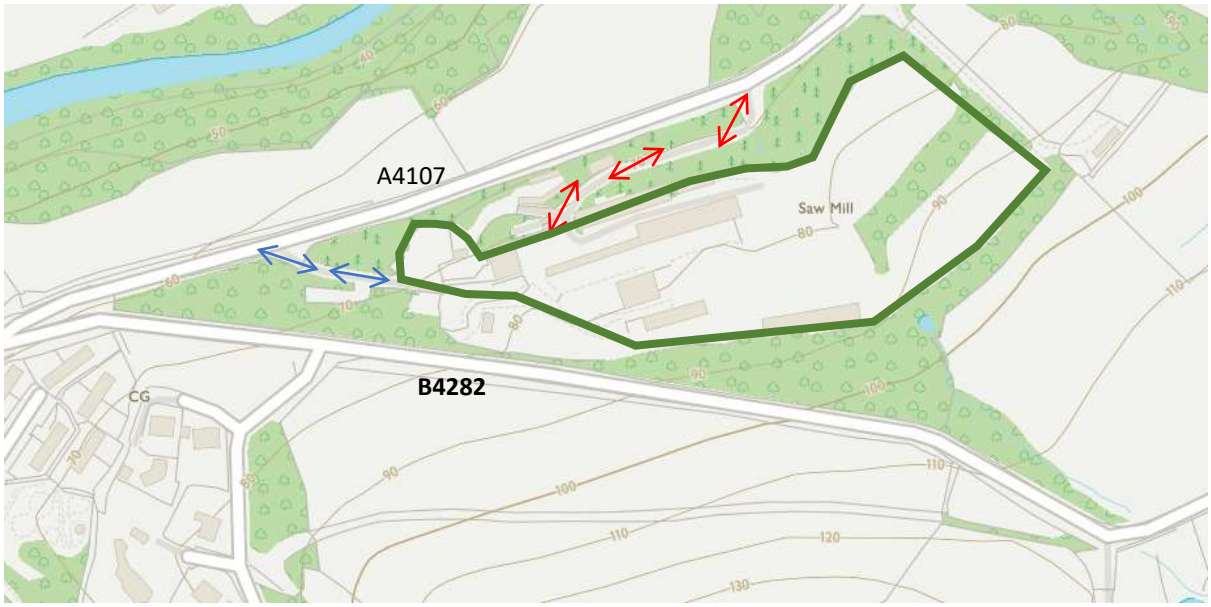
Figure 4: Site Layout (NTS)



Site Access and Alternative Emergency Access

1.10 The main access to the site is on the Afan Valley Rd, 500m from the junction with the B4282, see figure 5 red arrows. The secondary access can be made from a point at the junction of the Afan Valley Rd and the B4282, see figure 5 blue arrows.

Figure 5: Access (NTS)



1.11 The main access and secondary access will be kept clear at all times from any processing or storage operations to ensure full access and unobstructed circulation of emergency vehicles.

1.12 The primary approach route to the site is from the M4 junction 40 then follows the A4107 sign posted to Cwmavon. The site is on the right hand side just after the traffic lights on the A4107/B4282 junction.

Contact details

1.13 Site contact details together with emergency contacts and neighbouring businesses are provided in Appendix B.

Off Site Emergency Pack

1.14 An off site emergency information pack is held in the site offices as you enter the site.

2 Waste Material, Product and Process

Permitted Activities

2.1 The site activities involve the storage and treatment of waste wood with sorting, separation, shredding and chipping for recovery for use as biofuel, board mill or animal comfort products.

2.2 The waste types accepted at the site are non-hazardous waste woods as listed in the permit and management system, see Appendix A.

2.3 The site will handle a maximum of 100,000 tons per annum with an average weekly processing capability of 2000 tons although this will vary in response to demand. The maximum amount of material received to site will not exceed 750tons/day.

Waste Acceptance

2.4 Suppliers are informed of SWWP's pre acceptance criteria to ensure any waste wood brought to site complies with the correct waste types and is free from contaminants.

2.5 All waste arriving at the site is subject to the following waste acceptance procedures operated by the site staff.

2.6 Documentation is checked on arrival to ensure an appropriate waste transfer note has been completed. The waste is also visually checked before it is permitted to be unloaded. If the initial check and documentation indicate that the material is allowed under the Permit it is directed to unload. If the material is not permitted or the inspection shows that it contains foreign bodies/un-permitted materials for example material not included in the permit or if there is a suspicion of chemical contamination, the load is refused and not accepted at the site. A record of any load refused (rejected) is made in the Site Diary.

2.7 Following the initial acceptance the material is typically directed to a processing area or storage pile. The load will be deposited on the ground and a secondary visual inspection will occur. If the load is found to contain non permitted material, a photographic record of the load is taken and the whole load will be rejected. The material will be reloaded back onto the vehicle it arrived in to be transported off site. Details of the rejected load will be kept in the Site Diary and management will be informed.

2.8 The following is recorded for each load of waste:

- The vehicle registration number;
- The haulier's Registration of Carriers registration number; and
- A Transfer Note showing the waste producer, a description and amount of the waste, the haulier of the waste and the waste's collection point.

2.9 Site records are forwarded each week to the Operator's head offices at Cardiff and are available for inspection by the NRW with reasonable notice. Alternatively information can be supplied on request. Commercial information will be regarded as confidential. Within one month of the end of each quarter details of the waste movements are forwarded to the NRW on the appropriate form.

No acceptance of waste

2.10 In addition to the general waste acceptance procedures outlined above material will not be accepted onto site if at any point during the working day the following conditions preventing normal working operations arise:

- Insufficient storage capacity,
- Extreme weather conditions,
- Abnormal site conditions e.g. critical infrastructure failure, a fire incident.

2.11 Details of such events will be recorded in the Site Diary.

Waste Acceptance: Incompatible/hot loads

2.12 The visual inspection is also to assess if there are any signs of the waste 'heating' such as steam or smoke. Where the load appears to be heated, before it is accepted to be unloaded it is checked by a temperature probe to establish if the temperature of the load is elevated. Where there are elevated temperatures the material is directed to the quarantine area for unloading and will be subject to the cooling procedures at the quarantine area. Full details of loads directed to the quarantine area for cooling will be recorded.

Waste Acceptance: Permitted Waste

2.13 The amount of waste accepted onto the site can be up to 750 tonnes a day. The waste accepted onto site is sourced primarily from waste transfer stations, construction operations or waste from wood operations such as furniture manufacture and has not been subject to extensive periods of storage prior to arrival at site. Typically wood waste accepted at the site has been subject to minimal treatment, with initial pre-sorting or limited pre crushing of graded wood, but no treatment such as size reduction by chipping or shredding of the waste has taken place.

Waste Treatment: Processing

2.14 The processing operations involve the sizing of the waste to meet set specifications dependant on the product being made. The extent of the processing depends on the product specification. The processing operations involve physical sizing and this treatment does not use heat nor result in the generation of heat in the product.

2.15 The main processing machinery involved includes loading shovel, excavator, screeners, shredder, trommel and eddy current. The wood is processed to specification and either removed directly from site or placed in a storage pile in accordance with the storage pile limits.

2.16 No processing takes place inside a building.

Waste Storage

2.17 The waste both unprocessed and processed is stored outside in an extensive open compound and in loose form. No storage of mixed waste takes place. The aim is to ensure that the waste is stored in its largest particle size for as long as possible. Therefore processing only takes place in response to orders for processed material. Storing waste in its largest practical form reduces the possibility of self-heating and additionally reduces dust and debris being blown in and around the site.

2.18 The waste wood will be loose in one of two forms;

- Unprocessed waste wood, grades A B or C, in sizes from 100mm to 3000mm. There will be little or no fines in this waste.
- Processed wood chips in sizes 12mm to 100mm with little or no fines.

2.19 The precise configuration of storage piles will vary reflecting operational needs but will conform to storage dimensions and durations outlined in this FPMP. The pile sizes are slightly outside of the NRW FPMP guidance however this is mitigated by the measures outlined in this plan.

2.20 Typically 90% of wood on site is in unprocessed form in line with industry best practice.

2.21 No storage of wood wastes takes place inside any building.

2.22 Appendix C has full details of the storage of the different materials with a risk assessment for each.

Storage Times

2.23 Unprocessed wood will not be stored for longer than 6 months. Stock rotation will be covered later in this plan. Storage times of 6 months are in line with NRW guidance for unprocessed wood.

2.24 Processed wood will be not stored for longer than 1 month with the majority of processed wood transported from site within 2 – 5 days as it is typically processed to order to avoid product deterioration. NRW guidance for processed wood RW guidance for unprocessed wood states a maximum period of 3 months.

2.25 NRW FPMP guidance considers there is a self combustion risk for the storage of material over 3 months and additional monitoring measures are detailed later in respect of storage over 3months.

Storage Pile Sizes

2.26 Wood waste will be stored in piles sizes taking account of NRW FPMP guidance and the operational need and practicality of running the wood processing. The maximum pile sizes are detailed in table 2 below.

Table 2: Pile Sizes Unprocessed Wood Storage

Pile	Dimensions (m)			Volume (m3)	Shaped	Tonnage	Volume (m3)
	Length	Width	Height				
1	97	20	4	7760	6984	1396.8	6984
2	94	20	4	7520	6768	1353.6	6768
3	140	10	4	5600	5040	1008	5040
4	100	10	4	4000	3600	720	3600
5	81	10	4	3240	2916	583.2	2916
Totals				28120	25308	5061.6	25308

Notes

1. The unprocessed wood has a particle size range of 150-3000mm.
2. The quantities have had 10% deducted to take account of the slopes of the sides.
3. The tonnage has been calculated using 0.2 tons /m^3

Processed

2.27 When processed wood is stored on site it will be stored in pile 6 with a maximum size of 23m x 10m x 4m high.

Separation Distances

2.28 There will be a minimum separation distance between wood storage piles of 15 m to the long sides of the stacks and 7 m to the short ends in accordance with NRW guidance.

Storage Quantity

2.29 The maximum amount of wood storage on site will not exceed 10,000 tonnes.

Waste Treatment: Stock Rotation

2.30 Full records are kept of all waste accepted and its storage location on the site. As waste is accepted at the site it is directed to an appropriate area for unloading. The processing operations are designed to process the oldest waste wood first.

2.31 Records are kept as to when each storage pile is cleared and pile removal is based on the oldest pile being removed first. Storage pile details are recorded on an excel sheet covering the location, type of material, date of clearance, any temperature monitoring and any associated hot spot remediation works. These records are kept at the weighbridge office, up dated and reviewed by the site manager on a daily basis.

Recording of Storage Piles Durations

2.32 A schematic layout of all storage piles is maintained in the site office on a white board which identifies each pile with a unique reference number. Pile are formed in sequence and details recorded for each pile include the date that storage commenced, the 'out by' date and the maximum storage period. Tonnages are also recorded for each pile to ensure storage limits are not exceeded. At the end of each week a photograph is taken of the white board and kept as part of the site records. Figure 6 below provides an illustration of the operation of the recording system.

Figure 6: Storage Recording

3 Preventing Fires

3.1 To prevent fires all practical measures will be taken to remove ignition sources, operate a robust acceptance/inspection regime and prevent self-ignition by controlling pile sizes, stock rotation and restricting storage times.

3.2 The following paragraphs details measures to combat common causes of fire and ignition sources.

Plant and Equipment

3.3 The plant and equipment used at this site is detailed in table 3.

Table 3: Plant and Equipment

Plant/Equipment	Fire Prevention	Inspection
Loading Shovel (Hyundai 730 or similar)	inbuilt fire detection and suppression systems	Daily Inspection sheet
Shredder (Doppstadt 435 or similar)	inbuilt fire detection and suppression systems	Daily Inspection sheet
Screener (Finlay 883 Screen or similar)	inbuilt fire detection and suppression systems	Daily Inspection sheet
Tractor and water bowser	Portable Hand Held Fire Extinguisher	Daily Inspection sheet
Eddy Current Separator	inbuilt fire detection and suppression systems	Daily Inspection sheet
Compressor	Portable Hand Held Fire Extinguisher	Daily Inspection sheet
Diesel Bowser	Portable Hand Held Fire Extinguisher	Daily Inspection sheet

3.4 The processing plant has automatic suppression systems with an automatic modular dry chemical fire suppression system which has two components to the suppression system. The first system is a 25lb agent cylinder fitted with an electric control head. An actuation current is provided to the electric control head by linear detection or the operator pushing the fire button on either the internal or external mounted manual actuator. Power to

operate the system is drawn from the vehicle battery or provided by a 24hr self-recharging back-up battery inside the control panel. System status is constantly monitored by the control panel and communicated to the operator by visual LED indicators and audible alarm. On activation a dry chemical is discharged through fixed high capacity fast flow nozzles in a cone shaped spray pattern. The secondary system is an automatic liquid cooling system with a 2.4 US Gallon liquid agent cylinder discharged through 2 nozzles. The Amerex liquid cooling system is designed to be used as a secondary agent to reduce the heat in the hazard area and to reduce the possibility of a re-flash of a fire on mobile and self-propelled equipment.

3.5 The frequency of servicing for all bar the tractor, compressor and diesel bowser exceeds the manufacturer's recommendations with servicing at every 250 operational hours as opposed to the recommended figure of 500 operational hours. Any defects are recorded and actioned appropriately with full records of all inspection and maintenance works kept by the operator at the site office.

Electrical and Exposed Cables

3.6 A schedule is maintained for the regular inspection and maintenance by a certified electrician of all electrical works on site covering all buildings and plant. Records of inspections and maintenance works are kept by the site operator. There are no electrical installations within 10m of a storage stack and no electrical equipment will operate near a storage stack on a temporary basis without the permission of the site manager.

Naked lights and Smoking

3.7 The site has a strict no smoking policy with smoking only permitted in designated areas. A smoking area is provided for at the side of the site offices which is well away from wood storage areas, see drawing LMM 041 01A.

3.8 No naked lights are permitted on site apart from approved hot works, see below.

Heat and Spark Prevention/Detection

3.9 All plant exhaust systems have silencers (mufflers) fitted and these are blown out at the end of the working day.

3.10 The loading shovels do not have rubber strips fitted as rubber stripping is not a robust material for the shovel edges, as it damages easily and is so rendered ineffective in a very

short period of time. However plant operatives are briefed to watch for any sparks and should a fire start as a result of a spark this would be instantly detected by the plant operator and, as this would be only a small surface fire, it would be readily extinguished by the hand fire extinguisher held in the plant cab.

Gas Bottles and other Flammable Substances

3.11 All gas bottles and other substances such as oils and grease necessary for maintenance works are kept in a lockable container, away from the waste storage areas. The routine site inspection includes these storage areas.

3.12 Diesel for use on site is kept in bunded fuel tanks separate from the waste storage areas. Fuelling typically occurs at the end of a working shift. Refuelling is by a mobile diesel bowser with plant removed from the working area and away from any storage areas.

Fire Watch

3.13 All site employees are briefed to remain vigilant across the site for signs of heating or fires throughout the working shift and to specifically check of any signs at the start and end of any breaks or shifts or if moving to new working areas. All staff will have hand held radios to provide an immediate alert on discovering a fire.

3.14 The daily site inspection, as detailed previously includes surveillance for any signs of heating or fires. At the end of the working, an hour after all machinery and plant has been turned off, a further site inspect will be undertaken by the responsible site operative to check for any signs of heating or fires.

Parking of Plant

3.15 At the end of the working day all plant is parked away from storage areas with a minimum distance of 20m from any storage piles.

Automatic Fire Detection Systems

3.16 Most of the site plant and equipment has automatic fire detection and extinguishing systems as previously detailed. These are subject to regular maintenance and testing in accordance with manufacturer's specification to ensure they are fully functional at all times. When an automatic system is activated the plant will cease operation immediately and if safe to do so will be moved from the operational area or storage area as applicable. The affected plant will only return to operational use when a complete inspection confirms

it is in a suitable condition to do so which includes the full operation of the automatic fire detection system.

3.17 The CCTV system will cover the site and, whilst not specifically designed for flame and heat detection, will provide an element of additional monitoring to assist the detection of fires outside working hours with automatic notification out of hours to the operator and security for appropriate actions.

Hot Works

3.18 Hot works will only be permitted on site where absolutely necessary and only with a written permit to work from the site operating manager with the appropriate risk assessments in place. Hot works will typically only take place in the area adjacent to the site weighbridge. A fire watch will take place after completion of any hot works for a minimum of one hour after completion of the works.

Industrial Heaters

3.19 There will be no industrial heaters on site.

Exhausts and other Hot Machinery

3.20 All machinery, including exhausts will be constantly monitored whilst in use by the operative. All machinery will be cleaned down at the end of the day with compressed air, to remove any dust or fluff that may have accumulated on the machinery during its operation, and moved away from combustible material. All machinery will be rechecked an hour after the finish of works to check the plant has cooled. Checks will be recorded in the site diary.

Open Burning

3.21 There is no open burning permitted on site.

Incompatible Materials

3.22 There is no possibility of any reaction between incompatible materials as the only material stored and processed on site is waste wood.

Neighbouring Site Activities

3.23 The only neighbouring activity is a small yard with used logging machinery. This operation should pose no risk to the wood storage and processing operation.

Hot Loads Deposited on Site

3.24 The waste acceptance procedures outlined in the management system are designed to ensure no hot loads are accepted to site with every load received inspected by a site operative. No loads will be deposited without a site operative being in attendance. Inspections for hot loads have been previously detailed.

Self-Heating /Self-Combustion

3.25 The actual risk is dependent on the relationship between the size of the chips/particles, the size/height of the storage pile and the length of time it stored. SWWP will manage the risk based on NRW guidance, BRE report 'Review of EA FPMP' dated August 2016 and WISH Guidance. The self-heating and subsequent self-combustion is considered to be a greater risk when wood has been processed and is to be stored for a long duration. Unprocessed waste wood in sizes from 100mm to 3000mm will not self-heat due the size of the material and the cooling effect from surrounding air.

3.26 The storage times do not exceed the stated maximums of the NRW guidance.

3.27 No heated material is added to any piles, processing operations do not heat the material and waste acceptance procedures ensure no heated loads are accepted.

Monitoring

3.28 Based on the most up-to-date research and guidance, monitoring is not required for the proposed storage times, however the operator proposes additional monitoring above and beyond the guidance. There is daily monitoring of all stock piles on site. For both unprocessed and processed material, this is done by means of visual inspections conducted at the start and end of the working day.

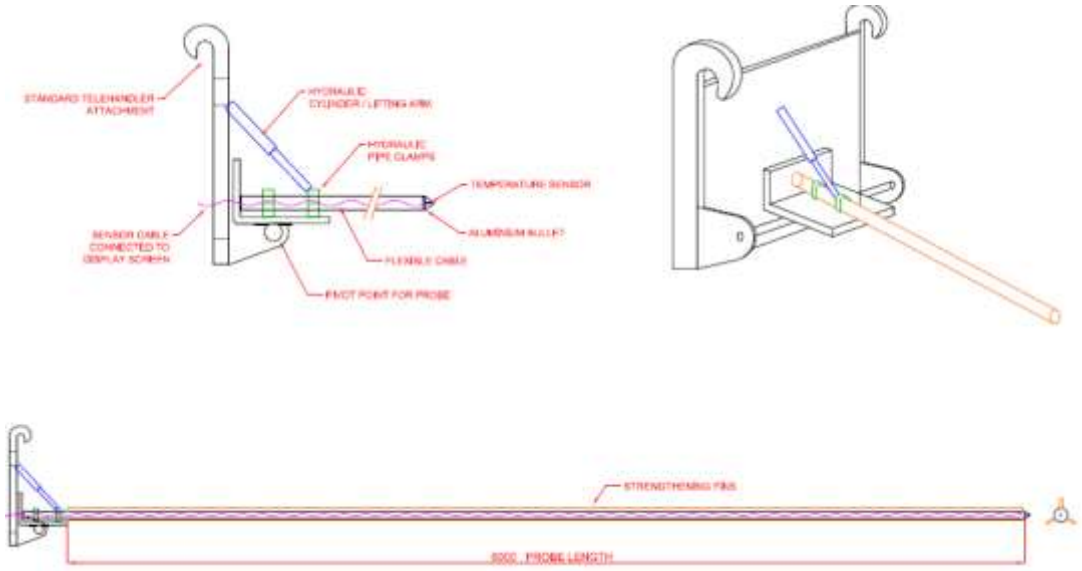
3.29 Provision is made for additional monitoring where unprocessed wood is stored for over 3 months and processed wood is stored for over 1 month.

Additional Processed Storage Monitoring

3.30 When processed material has been stored for over a month it will be monitored twice a day with a temperature probe. The temperature monitoring will take place at random locations in the processed pile, in recognition that self-heating is created by microbial activity which characteristically takes place in an indiscriminate manner and so any potential self-heating will take place on an 'ad hoc' locational basis within any pile. The

random testing will take place based on a minimum of 1 probe per every 200m^3, or part thereof, of material. Readings will be taken across a combination of different heights, top, middle or bottom – the 'random' location will be recorded (height and position) and subsequent monitoring on the same pile will take place at the same 'random' locations. A bespoke probe, adapted to allow it to be fixed to site mobile plant, of 5m long will be used to measure temperature, see figure 7 below.

Figure 7: Temperature Probe



3.31 Records will be kept of the temperature recordings including details of the time and location. After each round of monitoring the data will be reviewed for signs of elevated temperatures and assessed as to the need for any 'hot spot' actions.

3.32 The likelihood of self-heating occurring in the processed material is extremely low as it is processed to order and will be transported away from site within days. The BRE report 'Review of EA FPMP' dated August 2016 confirms this with its calculations as to the times different wood sizes, in variously sized piles, take to reach critical ignition temperature for self-combustion to occur. Sample 4 in the BRE report corresponds to the processed wood chip size of 12mm-63mm which is the material most prone to self-heating. The maximum processed storage pile size is 4m high by 23m x 10m which is comparable to the pile size BRE assessed at 4m x 20m x 20m. The BRE critical temperature for this sized pile was 108°C with an ignition time of 83 days. Clearly if the time to ignition is 83 days, the proposed storage times for the processed wood less than one month do not give rise to the possibility of self-combustion.

Trigger Levels

3.33 Temperatures recorded at the trigger levels will activate the 'hot spot' actions. The trigger level for all processed material will initially be set at 50°C, this figure is well below the critical temperatures taking account of the calculations of the BRE Report. An increase of more than 20°C between two recording periods will also be taken as indication of the heating of a pile and be used as a second trigger level measure.

Additional Unprocessed Storage Monitoring

3.34 When unprocessed material has been stored for over 3 month, i.e. beyond the 3 month out date as recorded in line with the procedures of para 2.32, it will be assessed on a weekly basis to establish if a pile shows signs of self-heating. A series of trial pits will be dug into the storage mound using the loading shovels at random positions along the pile. Any signs of heating will be reported to the site manager for determine hot spot actions.

Hot Spot Actions

3.35 All site staff will be trained on 'Hot Spot' actions from identification of a hot spot to its management. On identifying a hot spot, for processed material this will relate to recording trigger level temperatures and for unprocessed material this will be signs of heating covering warm surfaces, steam, smoke, an assessment will be made by the site manager of the relevant stockpile to identify the extent of the hot spot and enable an informed decision as to the remedial actions to be taken to cool the material by the most effective method in as short a time as possible and generating the minimum amount of residues.

3.36 All operations in the vicinity of a hot spot will cease and plant will be removed from the vicinity until the hot spot has been assessed and when appropriate remediated so there is no fire risk. Where deemed necessary the affected area will be isolated from the rest of the pile and/or other piles moved away.

3.37 The preference is to cool material in situ and to use techniques that will produce minimal residues where this can be done safely without increasing fire risk. The methods to cool a hot spot in situ include use of water, turning (rotating) the pile, smothering with inert material or spreading of the material by site operatives using a large shovel to remove material from affected area, either spreading it in the quarantine area or on adjacent ground where it does not compromise minimum separation distances – if necessary material in adjacent piles will be temporarily pushed away to create increased separation distances and allow cooling immediately adjacent to the pile.

3.38 Regular temperature checking of a hot spot in processed material will occur during cooling by use of the temperature probe to confirm the material is cooling and when it has returned to a normal temperature. To confirm unprocessed material has cooled this will be confirmed when the material is no longer warm and no longer steaming/smoking. At this point the cooling actions to cease.

3.39 If the cooling actions are not successful such that a hot spot develops into a combustion incident the fire trained site operatives will tackle the fire as detailed in the following section. Should they be unable to safely tackle the fire, then the fire service will be called.

Hot Spot Recording and Monitoring

3.40 Full records will be kept of each hot spot incident, detailing its initial identification to final full remediation. A regular full review of all hot spot incidents will be undertaken by the Site Manager to establish the effectiveness of the fire plan and management system.

Contingency Arrangements: Storage and Emergency

3.41 The operator has his own alternative wood recycling sites at Newport, Swansea and Bridgend which can be used to divert wood waste to in circumstances that the Western Log site cannot accept wood waste either due to site closure during a fire incident or when the site has reached its storage limits.

Seasonality

3.42 Wood recycling can have an element of seasonality with both the generation of waste wood and the demand for the wood products. Greater levels of waste wood are generated during the spring and summer months when construction levels are highest. This has a mismatch with the period of highest demand for the processed wood product, such as demand from energy plants, in autumn and winter. As a low value, high bulk commodity, with seasonal variations in arisings meeting the supply/demand challenge a high level of storage is essential. It is necessary to capture and store all waste wood to iron out the imbalance in waste arisings and the demand for the processed product.

3.43 SWWP has established with a series of contracts sourcing material from local authorities, various waste producers and manufacturing operations. SWWP has supply contracts with major power plants which include the nearby Margam power plant (Margam has a minimum supply requirement of 200,000tpa of wood). Whilst power station demand is highest in the winter SWWP supply Margam throughout the year. Additionally SWWP have

supply contracts with board mill producers which require a continuous supply over the year. The contract with the Kronspan board manufacturer which takes 200 loads per week. These are considered resilient outlets with renewable power plants are an essential as part of the government energy drive. Similarly the board manufacturer's have adapted manufacturing lines and are driven by policy drivers to use sustainable sources of material. It is not anticipated that there will be any lessening of demand for the wood product from these customers.

3.44 The site will form part of a larger supply network which is also used to assist in evening out imbalances in supply of arisings and demand for processed products.

Arson/Vandalism

Security

3.45 The site is relatively remote from public footpaths and it is unlikely to attract unsocial behaviour due to its location. Members of the public are not allowed general access to the site. The site itself is securely enclosed by fencing.

3.46 No members of the public are allowed on site. Gates to the site are only open during working hours when operatives are on site. All visitors to the site will be required to sign in and be escorted at all times. Delivery drivers will be signed in and monitored at all times. The site will be covered with a CCTV system which will be connected to manager's mobile phones for alerts and monitoring activity.

3.47 All plant and machinery is regularly maintained and inspected. Any deflects such as fluid leaks are dealt with immediately and any machine leaking oil or fuel will not be used until repaired are affected. Any leaks of oils or fuel will be immediately dealt with and contaminated materials removed off site to an appropriate disposal facility. Spill kits are kept on site and any spillage/leak incidents will be fully recorded in the site diary.

Ignition Sources

3.48 Operations on site are designed to keep storage piles and sources of ignition separate. The FPMP deals with the management of various ignition sources under separate headings, table 4 provides a summary of ignition sources and how they are managed.

Table 4: Summary of Ignition Sources and their Management

Source of Ignition	Prevention/Management
Arson/Vandalism	24 hr CCTV and secure site boundaries.
Self Combustion	Storage times are well below NRW guidance and storage piles comply with NRW guidance. Continuous monitoring for signs of self heating is provided for by means of visual monitoring by staff and the CCTV. Monitoring to ensure appropriate stock rotation and processing to order to minimise amount of storage of processed material.
Plant or equipment failure	Regular full inspection of plant and maintenance beyond manufacturer's specification.
Electrical faults	Regular electrical inspections/testing undertaken. No electrics in vicinity of storage areas.
Naked lights	None allowed on site, restricted area for smoking for staff provided away from storage areas.
Discarded smoking materials	No fires allowed on site .
Hot works	Permit system requiring removal of plant from storage areas and checks after completion of works.
Industrial heaters	None used on site.
Hot exhausts/plant engines	Hot plant subject to continual monitoring in course of working operations. Dust and dirt is removed at the end of each working day using an air compressor and then the plant is check an hour later to ensure it has cooled down.
Open burning (on site or adjacent land)	No fires allowed on site. No burning takes places on surrounding land
Damaged or exposed electrical cables	Regular electrical inspections/testing undertaken. No electrics in vicinity of storage areas.
Reactions between incompatible materials	Single waste stream not subject to chemical reactions. Waste acceptance procedures ensure no non-permitted/incompatible material is accepted at the site.
Neighbouring sites activities	Largely surrounded by open countryside areas and uses posing little fire risk.
Sparks from Buckets	Site operatives to watch for sparks and initiate procedures if a spark starts a fire.

Hot loads	Monitoring for hot loads takes place as loads arrive at site with protocol to manage material.

4 Firefighting

Firefighting – General

4.1 Firefighting will be undertaken by site staff when safe to do so. On discovering a fire during the working day, the site manager will be directly informed and fire-fighting actions will immediately be brought into action on the affected area. When attending the site out of hours the initial will assess the situation and the appropriate fire-fighting actions required with provision to call other site staff to attend the site. Any actions will only be carried out if it is safe to do so.

4.2 In the event of a fire during the working day all site processing operations will cease, no waste will be accepted to the site and all machines not used in firefighting in the affected area must be switched off and moved to a safe location. Operations at the site will not recommence until it is safe to do so without risk to the environment. Similarly in the event of a fire outside normal operating times the site will not reopen until it is safe to do so without risk to the environment.

4.3 Contingency arrangements for the diversion of waste will be activated to redirect any incoming wastes to the other facilities as discussed previously.

4.4 Should the emergency services be called out the Site Manager will be responsible for liaising with them on their arrival.

4.5 Out of hours, staff and mangers will be on call to attend the site to enable plant and machinery to be used in assisting the fire service.

Fire Fighting –Strategies

4.6 The main strategy for firefighting is to separate unburnt material from a pile where a fire has started to reduce available 'fuel' and minimise the burn time. Therefore should a fire start in one part of a pile on-site equipment (loading shovels) will be used to move material from the affected pile so reducing the potential combustible material in the pile and reducing the duration of a combustion event.

4.7 The shovels on site are adapted to be able to operate in heated conditions. In the event a fire in a pile the loading shovels would push away the unaffected parts of the pile, either to the quarantine area or using separation distances as temporary quarantine areas where this does not present a risk of combustion to other storage piles.

4.8 Where feasible cleared ground would be used to spread burning/heated material to allow more rapid cooling and reduce the duration of the fire incident Once the material was cooled it would be removed, temporarily to the quarantine area if it is not possible to move directly off site. Any 'moved' unburnt material would be returned to a normal pile formation as soon as possible.

Fire Fighting – Initial Response

4.9 The initial response on the outbreak of a fire will be to deploy a tractor and tanker, with a rain gun attachment and the mobilisation of plant to be used in firefighting (i.e. to assist moving material as appropriate).

4.10 The tank will be continually ready with a full tank of water and also a puncture proof solution in the tyres to ensure no flat tyres. The tractor and tanker is able to access all parts of the site and can be instantly mobilised to the location of a fire incident. The tanker capacity is 9,000 litres

4.11 The tank has a pressurised system allowing a high volume of water to be discharged in a short period of time over greater distances, both horizontally and vertically, ensuring it can target water to any location. The rain gun mounted attachment is able to rotate over 360°, again highly accessible in allowing delivery of water to all areas of the site. A side valve allows a hose attachment with further flexibility as to fighting a fire with variable spray ability.

4.12 To fully discharge the tank of all 9000 litres takes approximately 4.5 minutes, delivering water at a rate of approximately 2,000 litres per minute. The discharge of the hose can be controlled with the nozzle which has a variable flow control allowing water to be applied at a range of rates from a light spray to drenching. The rate of application of water will be assessed at the point of use to ensure the most effective use of water[1]. The preference is to apply water as a spray as opposed to drenching a fire as this can be a more effective (quicker) way to extinguish a fire removing the energy from the fire and absorbing heat quicker with the water turning to steam. Not only can this put out a fire faster but produces with minimal fire water runoff.

[1] Fire Service training will include assessment of the most effective rate of water application.

4.13 The refilling operations are swift with a similar 5 minutes refill time. Therefore once the tanker has discharged its load it will run on a cycle of refilling and discharging as needed for the fire incident in tandem with the other actions outlined below.

4.14 A wetting agent will be provided on site to be used either by the on-site tankers or for use by the Fire service. The product has been agreed as part of FPMPs with the Fire Service and local NRW officers. The agent will make the on-site water supplies go further and extinguish fires more efficiently. Wetting agents in water can make it go approximately 10 times as far as water on its own. The wetting agent is able to penetrate further into burning material fibres preventing reigniting and additionally assists cooling.

Firefighting – Movement of Material

4.15 As mentioned above, material will be moved ('pushed' as this is the quickest means) to a safe distance from the fire, to a location where its temporary storage does not compromise access for firefighting purposes or give risk to potential pollution risk. The plant on site can move material rapidly with loading shovels and an excavator. For safety reasons, no burning material will be moved across the site. After a fire burnt material may be removed to the quarantine area if appropriate.

Fire Service

4.16 Fighting a major fire would be undertaken by the local fire service because of the safety risks to the staff. The South Wales Fire and Rescue Service will be invited to train at the Western Log site to become familiar with the site layout. The fire service will use their own high volume pumps and hose equipment for firefighting but will be able to use SWWP personnel and equipment to help in the movement of material to assist firefighting.

Controlled Burn

4.17 South West Wood Products do not propose to use 'controlled burn' as a firefighting technique at Western Logs site as the FPMP provides extensive measures in its firefighting strategy to swiftly extinguish any fire. A controlled burn would only take place with prior agreement with the NRW, Fire Service and Public Health Wales.

Firefighting Equipment

4.18 Fire extinguishers and/or automatic fire suppression systems are provided on each item of mobile plant as detailed previously. The majority of the fire stores are kept in the container stores adjacent to the site access and readily accessible at all times.

4.19 Fire extinguishers are situated strategically around the site and all are checked and serviced annually by a certified third party company. Fire extinguishers are present in all mobile plant.

4.20 The on-site firefighting equipment includes:

- Tractor and Tank
- Loading shovels[2]
- Fire Extinguishers: Water spread strategically around the site.
- Weighbridge Office – Water & CO2
- Stores Container – Powder and Foam
- Wetting Agent
- PPE

4.21 Where appropriate the firefighting equipment will be fitted with couplings etc that allows these to be used with Fire Service equipment. All firefighting equipment is subject to a regular inspection and maintenance regime to ensure it is fully operational and ready for use at any time.

4.22 When an inspection identifies any repair or maintenance work required for the effective operation of the equipment this will be undertaken as a matter of priority. All firefighting equipment shall be inspected following its use to ensure it is fully operational and effective. Records are kept of all inspections and maintenance works.

Water Supply

Water Tanks

4.23 The water supply for firefighting on this site will be supplied by the means of a static tank. Two agricultural style water tanks with a capacity of 150,000 litres each and will maintained on site, be constantly topped up to ensure they are full and available for use.

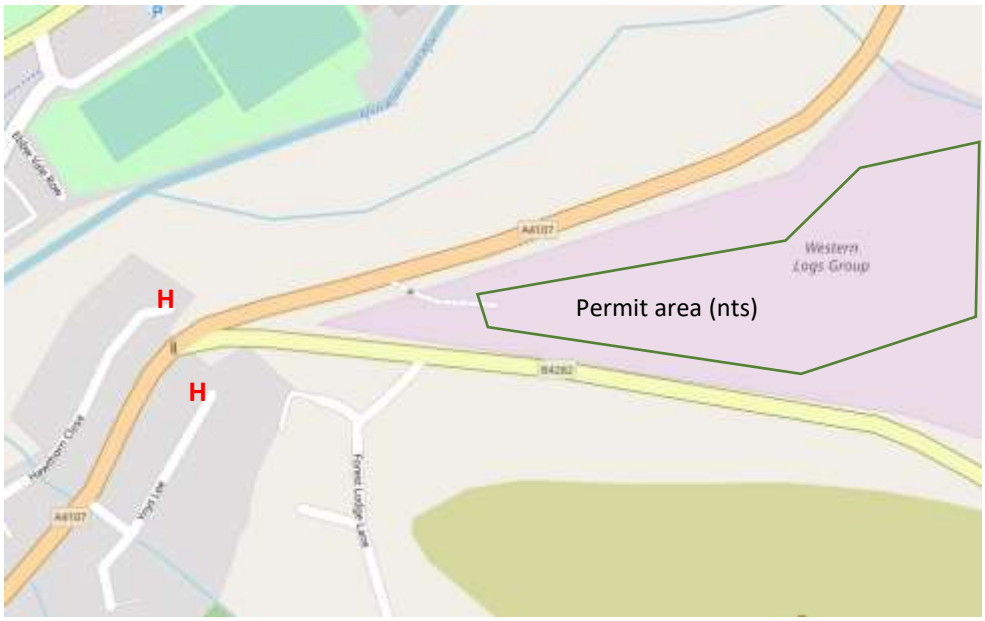
[2] The two larger shovels have a fire retardant hydraulics as opposed to convention rubber hydraulics to allow the plant to operate in a heated environment, with breathing apparatus for the drivers.

4.24 The tanks will be equipped with various outlets and inlets. Firstly for use with on-site equipment but also for use by Fire service. 1x 100mm round thread outlet and 2x 70mm male inlets. This will enable the fire service to extract water easily but also top up the tank.

Fire Hydrants

4.25 The nearest fire hydrants are situation approximately 225m from the site. They are situated in Hawthorne Close and Ynys Lee, see figure 8.

Figure 8: Location of Fire Hydrants



Mains Water

4.26 There is a mains water supply at the site however it is not anticipated this would be used for firefighting purposes. However it will be used to top up the static tanks on a ball valve type of system.

Reservoir

4.27 There is a secondary water supply in the form of a private reservoir about 250m south of the site located just off Forest Lodge Lane, see figure 9. Permission has been granted by the owner for the use of this reservoir in the event of fire at Western Log site. Permission letter is attached, see Appendix C[3].

[3] The lake owner is the landowner of the permitted site and the availability of the lake for emergency fire water supply has been agreed in renting the site.

Figure 9: Reservoir Location

4.28 The reservoir is a substantial source of water several metres deep and, according to the owner it has only experienced minimal reductions in levels even in dry summers. The reservoir is readily accessed from the public highway. The use of waters from the reservoir will be in line with standard fire service practise whereby fire vehicles with water carrying capacity of 9000litre extract the water, take it to site where it is used in temporary dam features.

Water Supply Summary

4.29 The available water for fire fighting at the site is

- 2 water tanks –300,000 litres
- Fire Hydrants (to west) supplying 4,000 litres/min
- Mains water - 35 litres /min
- Reservoir supply – >5,000,000 litres

Firewater Requirement

4.30 Based on a rate of 2,000 litres per minute for a 300m^3, for the largest storage pile this would give a requirement of 8,400,000 litres of water. This is not considered a realistic figure for a number of reasons: it assumes the whole pile would be ablaze which would not happen; the level of usage would require 23 fire engines each operating 3 line which isn't logistically possible and the likely figure would be between 6 to 10 for a major fire incident at a site such as this; and, it does not take account of effective application of water (see para 4.12) or the use of wetting agent which is now an established practice. Hence it is assessed that the available water supply as summarised in para 4.29 is more than sufficient.

Containment of Firewater

4.31 Fire water run off will be contained by the means of a containment bund at a low point of the site just to the north of the processing area. The site has a natural fall from the south to north with a small valley feature running south to north. Hence the northern edge of the site will be bunded to provide containment for any firewater runoff. There will be two with two further bunds to assist with the direction of water to this containment location.

4.32 As water is administered to the fire, a percentage will evaporate as steam and some will absorb into the wastes such as the wood and plasterboard. The EA has accepted FPPs that have assumed not all the water used to douse a fire will emerge as surface water, because of evaporation and potential uptake by waste, and using the following caveat:

> *"Assuming 25% water absorbed and 50% evaporated. Assuming most water hitting the target area will be evaporated with drainage increasing during the damping down operation. These assumptions have been used in previous FPPs which have been accepted by the Environment Agency" (SLR Statement on approved FPP)."*

4.33 In the event of contaminated firewaters being held by the containment bund arrangements will be made to remove these waters to an appropriate disposal site within 2 days by a registered competent contractor.

Quarantine Area

4.34 The quarantine area is a bare area of ground which is kept clear. Excluding the surrounding separation distances, the quarantine area has a footprint in excess approximately 970m^2.

There is at least 6m separation around the quarantine area which is kept completely clear. This complies with of the requirements in the NRW that the area is able to accommodate 50% of the largest pile (the largest pile footprint is 1,940m^2).

4.35 The area is to be used to hold materials removed from a storage pile during an incident, also for the cooling heated materials from hot loads directed to the quarantine area or to hold burnt material after a fire. Burning material will not be moved into the quarantine area because of the unacceptable risk to staff and potential ignition to other storage areas.

4.36 When the area is used to cool heated material, initially material will be tipped onto the ground and spread over the ground. An assessment will be made of how to cool the material. Options to cool the material include simply spreading out the material or the application of water via a mister or hose/bowser.

4.37 If heated material has been deposited in the quarantine area there will be on going monitoring throughout the working day of the cooling operations and material temperature. At the end of the working day a final assessment will be made and appropriate actions undertaken to ensure that no material is left outside working hours in a condition that might lead to self-combustion.

4.38 Once the material has been cooled sufficiently a further assessment will be made as to the suitability of the cooled material for processing. If it is no longer fit for purpose it will be disposed of at an appropriately permitted site, currently the nearest disposal facility is the Docksway Landfill. If the material is suitable for use it will be returned to an appropriate storage area.

4.39 Full records will be maintained of materials brought to the quarantine area including the cooling treatment, monitoring and final removal either as product or for off-site disposal.

Disposal of Fire Residues

4.40 Burnt material will not be suitable for use as a wood product and will be removed from site to an appropriately permitted disposal site.

4.41 The used fire waters will be contained within the site as previously detailed. After a fire incident the quality of the used fire waters will be assessed as to its treatment or disposal such that it does not pose any environmental risk, where necessary being removed from

site to an appropriately permitted disposal site. Currently the nearest disposal facility able to accept the burnt material and used fire waters is the Docksway Landfill.

Reporting

4.42 All fire incidents will be fully recorded, including investigation of the cause of the incident and any actions implemented. Full details will be provided to the NRW.

Review

4.43 The contents of the FPMP will be kept under regular review by management. Notwithstanding the regular review the FPMP will also be reviewed in response to changes in operational activities, new legislative requirements and any relevant site incidents.

Training

4.44 All staff are fully trained in fire procedures which includes up-date training and routine fire drills. Fire training forms part of the site induction training before staff can commence working on site. All nominated 'firefighting' operatives will have specific training provided by the Fire Service, provided at the site using the firefighting equipment and following procedures of the FPMP.

4.45 Refresher training and a full mock site incident exercise will take place at least once a year. Management will review the need to increase the frequency of fire training and exercises in response to staff turnover, changed site practises and any incidents or near misses. As per the management system, full records are kept of all training events.

Communication

4.46 An up-to-date FPMP will be kept in the site office available for inspection by all members of staff accessible so in an emergency situation NRW and the local fire service can readily access the document to assist in dealing with an incident.

4.47 Visitors to the site will be made aware of the fire prevention and fighting procedures to ensure they understand their responsibilities.

Appendices

Appendix A – Permitted Waste Types

EWC Code	Description
02 01 03	Wood and bark
02 01 07	Wood and bark
03 01 01	Wood bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03 01	waste bark and wood
15 01 03	wooden packaging
17 02 01	Wood
17 09 04	Mixed construction waste consisting of wood only
19 12 07	wood other than that mentioned in 19 12 06
20 01 38	Municipal wood waste
20 02 01	wood and bark only

Wastes which:

- Consist solely or mainly or dusts or powders or loose fibres; or,
- Have hazardous wastes; or
- Are in liquid form

Will not be accepted to site.

Appendix B – Contact Information

Former Western Log Site, Cwmavan		
Site Phone Number	TBC	
Emergency Services	999	
Police HQ Incident Room	**101**	
Local Police	Tel: 101	
Doctor	Cwmavon Health Centre, Penllyn, Cwmafan, Port Talbot SA12 9PY Tel: 01639 896244	
A&E	Neath Port Talbot Hospital Baglan Way, Port Talbot SA12 7BX Tel 01639 862000	
NHS Direct	**0845 4647**	
Natural Resources Wales	24hour hot line – 0800 807060 Local Office – 0300 065 3000	
Electricity Emergency	**Western Power 08006 703105**	
Water Services & Emergencies	Welsh Water 0800 052 0130	
Local Authority	Port Talbot Council 01639 686868	
Company Contacts Out of Hours		
Operator	Tom Dunn Martin Chubb	07717 291464 07739324593
Neighbour Contacts		

Appendix C – Permission Letter

From: Julian James <julian@julianjames.co.uk>

Date: Thu, 9 Jul 2020, 16:47

To: philpicton01@btinternet.com

Subject: RE: Western Log site

To whom it may concern

I grant permission for the lake at

Forest Lodge

Forest Lodge lane

Port Talbot

Sa13 2rx.

To be an emergency water supply, by the Fire service or south West Wood Products, In the event of a fire at the Former Western Log Site Cwmavon.

I confirm that I own the lake and I can give this permission.

Yours sincerely

Julian James

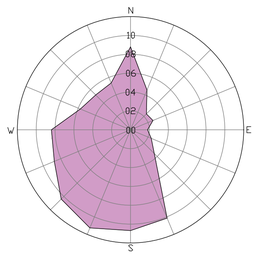
07831 519 345

Site Plan

Notes:
1.This drawing should only be used for its original intended purpose.
2.Critical dimensions, levels, clearances etc. should be checked on site before construction work commences.
3.Dimensions in metres unless otherwise stated.

Application boundary

Wind direction distribution in %



A4107

B4282

TRACK

1. UNPROCESSED 97 x 20m
1940m²

2. UNPROCESSED 94 x 20m
1880m²

3. UNPROCESSED 140 x 10m
1400m²

4. UNPROCESSED 100 x 10m
1000m²

5. UNPROCESSED 81 x 10m
810m²

6. PROCESSED 23 x 10m

PROCESSING AREA

1057m²
QUARANTINE
40 x 33m max.

HARDSTANDING

BUND

SURFACE WATER FLOW

LINE OF UNDERGROUND CULVERT

EMERGENCY INFO. PACK

MAIN SITE ACCESS POINT

ALTERNATIVE ACCESS POINT

OFFICE

PARKING AREA

WEIGHBRIDGE

SMOKING AREA

MAINTENANCE SHED AND STORES

PLANT PARKING

2 x WATER TANKS

7.0
11.8
6.0
10.0
10.0
12.8
16.6
17.8
10.0
15.8
13.5
14.8
7.7
6.3
6.1
6.2
6.0

0 10 20 30 40
SCALE BAR = 40M

Revision	Comment	Date
A	Layout changed	04 Dec 20

South West Wood Products Ltd
Unit A4 Pacific Road, Compass Business Park, Cardiff CF24 5HL

Project
FOREST PRODUCTS SITE
CWMAFAN
SA12 9AB

Drawing Title
PERMIT PLAN

Drawn Date: 14/07/20
Surveyed Date:
Scale: 1:500 (AT A1)
Drawing Number: LMM/041/01
Rev: A