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Consulting Engineers Limited

Chirk Particleboard Facility

Kronospan

Dust Management Plan

ENGINEERING CONSULTING

Document approval

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Contents

1 Introduction

Kronospan is the UK's leading manufacturer of high quality wood-based panels and associated products and has been operating in the UK since 1970. The main products manufactured by Kronospan at the Chirk site (the Facility) are particleboard, medium density fibreboard (MDF) and laminate flooring.

Following issue of the consolidated Environmental Permit (EP) (Ref: EPR/BW9999IG) by Natural Resources Wales (NRW) the Facility is required to produce a standalone dust management plan (DMP) as part of Improvement Condition (IC) 38. The IC requires that the DMP is in accordance with Environmental Agency (EA) Emissions Management Plan for Dust online guidance and addresses the delivery of all relevant Production Wood-based Panels BAT Conclusions.

The purpose of the DMP is to demonstrate that the control of dust and particulate emissions has been taken into account in the operation of the Facility.

This DMP is a working document and is updated and refined as required throughout the operation of the Facility. The DMP forms an integral part of the site Environmental Management System (EMS) and operational staff have easy access to the document via the site internal computer systems. Further to this the DMP sets out operational procedures to control and mitigate dust and particulate emissions from the Facility, made available to all operational staff working at the Facility.

In developing this DMP, Kronospan understands its responsibilities for controlling dust generated by the Facility and is committed to ensuring that its operations do not result in unacceptable dust impacts at off-site receptors. Kronospan is committed to ensuring that all dust control equipment and measures are designed, operated and maintained appropriately to ensure that dust is effectively controlled at all times.

As explained within, Kronospan will undertake regular and periodic review of the DMP to ensure that it is effective at controlling dust and mitigating the impact of dust generated by the Facility.

For the purpose of this report, "dust" refers to the course fraction which can deposit and cause annoyance, whereas "particulates" refers to the finer particulates which are suspended in the air and can cause respiratory health impacts. These are generally PM_{10} or smaller.

This has been updated to include for the activities arising as a result of the proposed EP variation. Full details of the EP variation can be found in the Supporting Information for the EP application.

1.1 Report structure

This report has the following structure broadly in line with the template DMP guidance provided by the EA, as referred to in the IC by NRW:

- Details of the site location including site address are presented in section 2.
- Review of sources, pathways and receptors, including meteorological data are presented in section 3.
- A dust risk assessment including measures for dust and particulate management at the Facility are outlined in section 4.
- Proposals for monitoring at the site are described in section 5.
- Further details on the reporting and complaints procedures to be implemented at the Facility are provided in section 6.
- Actions in the case that unacceptable dust has been monitored or complaints have been received in included within section 7.

- Improvements are included in section 8.

2 Site location and description

2.1 The site

The currently Facility extends to around 40 hectares and comprises a number of large industrial process buildings housing the main manufacturing processes, storage areas for raw materials, warehouse buildings for manufactured products, together with other facilities associated with a discrete manufacturing business.

The western perimeter of the Kronospan site is formed by the Shrewsbury to Chester railway. Improved railway siding facilities have been constructed within the Kronospan site to enable an increased volume of timber to be imported by rail and the new rail sidings are now operational. The Shropshire Union Canal is located to the west of the railway line. Water is abstracted from the canal for use in the manufacturing process. The eastern perimeter of the site is formed by Holyhead Road (B5070). An earth bund, planted with trees, has been developed along the eastern perimeter of the site in order to reduce the visibility, noise and dust impacts of the site operations from neighbouring properties on Holyhead Road

A sewerage pumping station (not owned by Kronospan), training centre and one property (owned by Maesgwyn Estate), are located to the immediate north of the site. To the immediate south of the site is the Mondelez factory and the Chirk recreational ground.

The main residential area of Chirk is located to the east of the site with residential properties lining the majority of the eastern side of Holyhead Road. Chirk town centre is located approximately 500 m to the south east of the site.

The wider area beyond the urban settlement of Chirk is dominated by agricultural fields and woodland. Chirk Castle and its grounds are located to the west of the site, beyond the Llangollen Canal.

The Facility location in the context of the wider area is displayed in Figure 1 of Appendix A.

2.2 Site address

The site address is as follows:

Kronospan Ltd,

Maesgwyn Farm, Chirk,

Wrexham,

LL14 5NT,

United Kingdom

2.3 Summary of operations

The panel board manufacturing process incorporates a detailed multi-step set of operations including creation of sawdust and wood chips, drying processes, pressing, resin manufacture, resin impregnation, packing and storage. The Facility is operated in accordance with the extant varied and consolidated EP (Ref: EPR/BW9999IG), which was granted by NRW on 4th October 2022. A full summary of operations is detailed within the EP, and further details are provided within section 3.2 (potential emissions sources) and section 4.2 (control of fugitive dust and other emissions).

3 Review of sources, pathways and receptors

3.1 Dust

Emissions of dust to air can give rise to annoyance due to soiling of surfaces by dust. Very high levels of soiling can also damage plants and affect the diversity of ecosystems. Long term exposure to elevated concentrations of particulates is associated with a range of health effects.

3.2 Potential sources

The management of the Facility is split into departments. A register of dust sources within the Facility is contained in Appendix B. This includes potential dust associated with raw materials, the production process, maintenance, abnormal activities and waste management for each department. This dust register is linked to each departmental aspect register (which forms part of the EMS). This sets out the maintenance frequency of each identified piece of equipment.

The following section provides additional information on the Log Yard given this has been identified as the most significant source of fugitive emissions of dust from the Facility.

The Log Yard is the reception and storage area for wood-based raw materials and contains compounds dedicated to boiler fuel processing and storage. It is situated to the north west of the site with industrial buildings and infrastructure surrounding its southern and eastern boundaries and a 4 m high fence along the western boundary. The area identified as the Log Yard is shown on Figure 5. All external stockpiles are partially shielded within containment walls, also shown on Figure 6.

The wood-based raw material residues from the Facility are listed in the table below.

Table 1: Wood-Based Raw Material Residues

Raw material type	Grade and specification	Average annual moisture content (%)	Average fines content (% by weight)	Particle size distribution
Recycled timber (RCT) – chipped	B Grade, <100mm chip size	31.3	4.6	>80mm – 1.93% 80-50mm – 8.67% 50-35.5mm – 9.00% 35.5-10mm – 49.42% 10-6.3mm – 14.30% 6.3-3.15mm – 12.07% <3.15mm – 4.61%
Recycled timber (RCT) – pre-crushed	B Grade, 100-300mm particle size	37.1	2.3	100-300mm, no visible fines (<3.15mm)
Virgin wood chip	Green logs residue, G50 chip size	92.0	5.9	>80mm – 0.05% 80-50mm – 2.06% 50-35.5mm – 0.72%

Raw material type	Grade and specification	Average annual moisture content (%)	Average fines content (% by weight)	Particle size distribution
				35.5-10mm – 62.56% 10-6.3mm – 25.56% 6.3-3.15mm – 6.38% <3.15mm – 2.67%
Virgin sawdust	Green logs residue, granular size	90.5	99.0	99% granular <10mm, 1% assorted shaving particles

Residues are transported to site in two types of heavy goods vehicles; walking floor trailers or curtain-side trailers. Walking floor trailers are directed to the relevant offload location by Log Yard employees where the haulier will then commence offloading of material onto the relevant stockpile mechanically via the trailer rear doors. However, once curtain-side trailers are directed to the relevant offload location, they require residues to be removed from the vehicle manually. This is carried out by Kronospan employees using a wheeled bucket loader that pushes residues off the flat bed and onto the relevant stockpile or directly on to the Pre-Screening walking floor, a sheltered structure with water suppression.

As vehicles exit the Log Yard they are required to stop at the designated sweep off area to clean any remaining residues from their vehicles, as described in KC/LOGY/DOC/005. Curtain-side trailers are then utilised by Logistics to transport finished goods to customers, reducing the number of vehicle movements to site. The Log Yard is managed on a first-in-first-out system to ensure stability throughout further processes on site. The different residue stockpiles are segregated by 7 m high log walls with a width of 3 m for virgin residues and 6 m for recycled residues. Table 2 contains pertinent stockpile information during normal operations. Figure 6 shows the layout of the Log Yard.

Table 2: Stockpiles during normal operations

Stock	Width (m)	Length (m)	Average height (m)	Maximum height (m)	Max stock holding (tonnes)	Shielded sides
RCT <100mm	73.6	39.5	4.0	6.0	2,160	S, E, W
RCT 100-300mm	59.6	29.6	4.0	6.0	1,170	N, S, W
RCT overflow	75.5	15.3	4.0	6.0	990	N, S, W
Sawdust	17.3	66.8	4.0	7.0	1,180	N, S, W
Virgin wood chip	47.3	54.2	4.0	7.0	2,550	N, S, W
Chip (Sawmill)	21.4	24.4	4.0	7.0	470	E, S
Chip overflow	28.6	66.8	4.0	7.0	2,320	N, S, W
Unprocessed boiler fuel	31.0	22.0	2.0	4.0	770	N, W
Processed boiler fuel	25.9	21.5	2.0	4.0	250	N, S, W

Due to the shortage of supply over the Christmas period within the timber industry, Winter Operations for the Log Yard requires increased stock levels to maintain production. In order to achieve this, between 01 November to 01 January, residue stock levels are gradually increased, as detailed in the below table.

Table 3: Maximum stockpiles during winter operations

Stock	Width (m)	Length (m)	Average height (m)	Maximum height (m)	Max stock holding (tonnes)	Shielded sides
RCT <100mm	73.6	39.5	6.0	7.0	3,925	S, E, W
RCT 100-300mm	59.6	29.6	6.0	7.0	2,380	N, S, W
RCT overflow	75.5	15.3	6.0	7.0	1,560	N, S, W
Sawdust	17.3	66.8	6.0	7.0	1,770	N, S, W
Virgin wood chip	47.3	54.2	6.0	7.0	3,830	N, S, W
Chip (Sawmill)	21.4	24.4	6.0	7.0	700	E, S
Chip overflow	28.6	66.8	6.0	7.0	3,480	N, S, W
Unprocessed boiler fuel	31.0	22.0	3.0	4.0	1,155	N, W
Processed boiler fuel	25.9	21.5	3.0	4.0	370	N, S, W

In addition to the external stockpiles, wood residues are also housed within silos throughout various stages of processing on site. The recycled timber is processed and transported via conveyors into one of two 8,000m^3 storage silos, containing approximately 1,840T. Chips are stored in one of two 10,000m3 silos, containing 2,900T. Sawdust is stored within a 500m^3 silo, containing 80T.

Materials are transferred through various enclosed conveyors and blowlines as part of the site operations. The majority of these assets are within the Particleboard Pre-Production (cleaning, flaking, and drying) processes as well as within the MDF Refiner and Biomass Boiler processes. Residue handling within conveying systems occurs internally, externally and at varying heights.

Blowlines and conveying systems are environmentally critical assets and are identified within the site's computerised maintenance management system (KSoft CMMS) to ensure that preventative maintenance regimes are implemented. See Appendix B for further detail on residue conveying systems.

3.3 Pathways

Dust released from the sources or fugitively from the Facility is released to air and has the potential to be conveyed to nearby receptors via transfer through the air. The extent to which dust is detectable or of nuisance at sensitive receptors is dependent upon the pathway. This is influenced by meteorological conditions, for example wind speed, wind direction and rainfall as well as the location and height of the source.

3.3.1 Meteorological conditions

The nearest World Meteorological Organisation (WMO) meteorological station representative of conditions at the Chirk site is at RAF Shawbury, located approximately 30 km south east of the Facility. Wind roses for the years 2018 to 2022 (See Figure 2 of Appendix A) show that the predominant wind direction is from the south west, so receptors to the north east of the Facility are at greater risk of nuisance from dust emissions.

Rainfall acts as a natural dust suppressant. The Met Office climate averages for 1991-2020 from Shawbury[1] have been reviewed to show that there is an average of 131 'wet' days out of 365 days in the year (it has been assumed that a 'wet' day is one where there has been >1mm of rainfall). This indicates that there is an average of 234 days in a year in which supplemental dust control measures may need to be applied in the absence of sufficient rainfall to control fugitive dust emissions.

In addition, the air quality monitoring sites in Chirk (Chirk Green and Chirk Hospital) operated by Wrexham County Borough Council (WCBC) includes a monitors for wind speed and direction, temperature and humidity. This is reported on the AirQWebsite (https://www.airqweb.co.uk) and is regularly accessed to provide immediate data if required.

Site management is responsible for monitoring weather forecasts to determine if long dry spells are forecast – this enables the proactive application of dust control measures (for example, using a water bowser to dampen down site roadways).

3.4 Receptors

A human sensitive receptor is any location where a person may experience the annoyance effects of airborne dust or dust soiling or may be exposed to PM_{10} over a period of time relevant to the air quality objectives. Sensitive human receptors can include:

- Residential dwellings;
- Schools;
- Hospitals;
- Care homes;
- Childcare facilities;
- Hotels;
- Gardens (where relevant public exposure is likely i.e. excluding extremities of gardens or front gardens);
- Sensitive commercial premises including; vehicle showrooms, food manufactures; and electronics manufactures.

In addition to the above, amenity impacts of dust and other emissions must be considered. These impacts could arise on neighbouring 'clean' industry and manufacturing processes, such as paint shops, offices, food manufacturing and food outlets, agricultural land, areas of car parking, etc. Cumulative impacts should also be considered in relation to neighbouring generators, busy roads, power stations, etc. Furthermore, environmental or ecological receptors sensitive to dust and particulates must be considered – such as environmental habitats sites or protected species sites.

[1] Source: https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gcqh76ug7 {accessed 09/03/2023)

According to the EA's DMP template and guidance, receptors up to 1 km from the Facility should be included, as these are considered to be the most likely to be impacted by dust and particulates (such as those resulting from generators, mobile plant and road vehicles) from the site. For the Facility, there are several receptors located within the village of Chirk to the east. A selection of these has been chosen as to be representative of receptors within each wind direction. The receptors used within this DMP are consistent with the receptors used within air quality assessments associated with the EP. It is recognised that they are not an exhaustive list and that consideration of impacts across the area should also be considered.

It is also important to consider ecological receptors. Ecological receptors could include internationally, nationally or locally designated sites. There are 2 ecologically designated sites within 1 km of the installation boundary.

The sensitive receptors are tabulated in Table 4 and shown in Figure 3 of Appendix A. As shown in Figure 3, the closest sensitive receptors to the Facility are to the east along the B5070. There is some potential for cumulative dust emissions from the Facility with any dust emissions produced from traffic along the B5070 and other residential roads.

Table 4: Selected representative receptor locations

Ref	Name	Type	Distance from Installation Boundary (m)	Direction from Facility
R1	Afron Bradley Farm	Residential/farm	550	NW
R2	Lodge Farm	Residential/farm	670	NE
R3	Lodgevale Park	Residential/farm	360	NE
R4	Rhosywaun	Residential	85	E
R5	Chirk Community Hospital	Hospital	460	NE
R6	Chirk Infant School	School	160	E
R7	Highfield Farm	Residential/farm	760	E
R8	Maes-y-Waun	Residential	53	E
R9	Colliery Road	Residential	290	SE
R10	St Mary's Church	Community	1,300	SE
R11	Station Avenue	Residential	390	S
R12	Llwyn-y-cil	Residential	430	SW
R13	New Hall	Residential	890	W
R14	Chirk Court	Residential (care home)	30	E
E1	River Dee and Bala Lake SAC, SSSI	Ecological (SAC and SSSI)	1,000	S
E2	Chirk Castle SSSI	Ecological (SSSI)	500	W
E3	Ceod-Y-Canal Wood	Ecological (LWS)	<50	W

4 Dust and particulate management

4.1 Responsibility for implementation of this plan

This DMP is a working document. Initially, it is intended to demonstrate that the control of dust and particulate emissions has been considered as part of the day to day operation of the Facility. This DMP references procedures which are contained within the EMS. It is not intended to replace these procedures but sufficient information has been provided to describe the principles.

Kronospan has responsibility for the implementation, reviewing and updating of the DMP. Reviews are undertaken on an annual basis, and whenever new equipment or mitigation measures are implemented at the Facility, or following the receival of complaints.

Kronospan aims to ensure that any persons performing tasks for it, or on its behalf, which have the potential to cause significant environmental impact, are competent on the basis of appropriate education and training or experience. Key management roles at the Facility include the Senior Management Team, the Environment, Health & Safety (EHS) Department and the Departmental Managers. The EHS Department Management are responsible for ensuring that procedures are in place for dust, noise and odour management on site and responsible for responding to and investigating off-site environmental complaints. The Departmental Managers are responsible for ensuring that dust, noise and odour control measures are in place in their department, and for investigating any justified environmental complaints that have been caused by dust, noise or odours originating in their department. The managers are responsible for ensuring that all employees are fully trained on dust and particulate control, with all employees at the Facility responsible for following site procedures.

Systems to assess competence and provide training for relevant staff is provided. Skills, competencies and training requirements for staff (such as understanding and implementation of the DMP) are documented and recorded as part of the internal EMS at the Facility. The EMS contains an archiving procedure to ensure all training (including refresher training) is recorded and all associated records are retained.

The Facility is split into the following departments, for which the Departmental Manager is responsible.

1. Logyard
2. Paper Impregnation
3. Particleboard
4. Biomass Boilers
5. Finishing Lines
6. Formalin
7. MDF
8. OSB
9. Melamine Facing (MF)
10. Resin
11. Sawmill
12. Kronoplus

Where dust is generated by contractors working at the Facility, Kronospan acknowledges responsibility for ensuring that dust impacts are minimised. Procedures for the control of contractors are included within section 4.3.2.

The EMS includes procedures for the control of contractors. This includes providing contractors details of the health and safety risks on site and the procedures which need to be complied with. This includes procedures to minimise dust impacts. Contractors are required to confirm that they will adhere to the site rules and pass the site induction prior to working on site. Where a contractor has been found not to comply with the site rules, fines can be issued and repeat offenders refused access to the site.

4.2 Control of fugitive dust and other emissions

The sources of emissions have been listed in section 3.2. Control of the impact of dust involves breaking the source-pathway-receptor links. Therefore, for each of these sources, a breakdown of the source-pathway-receptor model is presented within the Tables within section 4.3.1 with the final column in the table setting out details of where relationship can be interrupted. Table 18 provides general measures of mitigation/control measures that are in place at the Facility. Should control measures fail and pose a significant risk of dust and particulate emissions, operations at the Facility will be ceased and the NRW will be informed. These tables are reviewed by management as part of periodic reviews of the DMP. This ensures that sources, pathways and receptors of dust and particulates are regularly examined, so that there are no 'gaps' in abating the sources of dust and particulates at the Facility, and as part of Kronospan's aim for continual improvement of management systems.

4.2.1 Permit requirements

The Facility has an EP to operate. Section 3.2 of the EP includes conditions regarding the emissions of substances not controlled by emission limits, this condition states:

> *"3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.*
> *3.2.2 The operator shall:*
> *(a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;*
> *(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales."*

"*Pollution*", other than in relation to a water discharge activity or groundwater activity, is defined in the Environmental Permitting Regulations as:

> "*Any emission as a result of human activity which may-*
>
> 1. *Be harmful to human health or the quality of the environment;*
> 2. *Cause offence to a human sense;*
> 3. *Result in damage to material or property; or*
> 4. *Impair or interfere with the amenities or other legitimate uses of the environment."*

> *In addition condition 2.3 referring to operating techniques states:*
> *2.3.1*

(a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.

(b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

2.3.2 Wood particles, including woodchip and sawdust, that may become wind-entrained, shall be stored in such a manner (for example, enclosed storage areas, screened, covered, by conditioning and height management of stockpiles etc) to prevent as far as is reasonably practicable, the emission of wind-blown particulates.

2.3.3 External stockpiles shall be suitably conditioned and managed to prevent, as far as is reasonably practicable, the emission of wind-blown particulates.

2.3.4 External stockpiles shall not contain MDF Fibre or Sander Dust. The only exception to this is where non-dry MDF Fibre, mixed with other wood residues, is stored within the K7 boiler fuel compound.

Therefore, the EP controls emissions from all activities on-site. The measures should not only prevent harm to human health but also damage to property which includes dust nuisance. As such, to comply with the requirements of the EP, there are a number of dust and particulate emissions control measures in place at the Facility, including both physical measures and management techniques. These are detailed further in Table 18.

4.2.2 Planning requirements

A review of the planning consents for the site has not identified any conditions relating to dust from operational activities, with the planning permissions noting that this would be controlled via the permitting regime.

4.2.3 Appropriate measures and best available techniques (BAT)

In respect of the EU BAT `Reference Document for the Production of Wood-based Panels' and the associated BAT Conclusions for the Kronospan site, the response below is provided in addition to the detail within the Dust Register in Appendix B.

BAT 1. In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features (I to XIV with XIV being a dust management plan).

Kronospan operations adhere to the EMS which has been accredited to ISO 14001 standard and includes all the features listed under BAT 1. This DMP has been produced to satisfy requirement XIV.

The management team, including senior management have made a commitment to ensure that the EMS is adhered to, and this includes a sustainability policy (KC/SHEQ/POL/0002) which includes a commitment to improving environmental performance by employing best available techniques for the measurement and control of emissions and wastes. In addition, a commitment is made to

being a good neighbour to the local community and reducing the environmental impacts from business operations.

BAT 2 In order to minimise the environmental impact of the production process, BAT is to apply good housekeeping principles using all of the techniques given below.

(a). Careful selection of control of chemicals and additives.

Changes made to chemicals / additives are assessed through the Chemical Purchasing Procedure (KC/PURC/PRO/0003). Significant changes are also assessed through the site's Management of Change Procedure (KC/EHS/PRO/008).

(b). Application of a programme for the quality control of recovered wood used as a raw material and/or as fuel (EN 14961 -1:2010 can be used for the classification of solid biofuels), in particular to control pollutants such as As, Pb, Cd, Cr, Cu, Hg, Zn, chlorine, fluorine and PAH.

All recycled timber is purchased for Particleboard production and undergoes quality control upon arrival at site. The following documents within the EMS detail the control measures in place for recycled timber receipt:

KC/LOGY/PRO/0003 – Procedure for Recycled Timber Control

KC/LOGY/WI/0001 – Moisture Content of Timber Raw Materials

KC/LOGY/WI/0006 – Visual Inspection of Recycled Wood

KC/PURC/DOC/0008 – RCT Suppliers Specification

KC/PURC/DOC/0021 – Pre-Crushed RCT Specification

(c). Careful handling and storage of raw materials and waste.

Storage of raw materials is maintained as described in Section 3.2. Material that does not meet specification is rejected upon receipt at the Log Yard and returned to the supplier. The Timber Complaint / Reject Advice Form (KC/LOGY/TEM/0016) is completed for all rejected loads.

In addition to the detail above regarding wood residues, other raw materials that could generate dust are listed in Table 5.

Table 5: Other raw materials which could generate dust– storage and handling arrangements

Material	Description / form	Location	Storage arrangements	Handling arrangements
Urea	Prilled	Resin	Housed within dedicated storage silo	Minimal handling for personnel safety, offloaded directly into silo from vehicle, bucket elevator and screw feed directly into process
Melamine	Odourless white powder	Resin	Contained within sealed flexible intermediate bulk containers, stored within the building	Minimal handling for personnel safety, discharge directly into process and transported via fork lift
Calcium hydroxide	Fine powder	K8	Housed within dedicated storage silo	Minimal handling for personnel safety, offloaded directly into storage silo from vehicle

Waste materials that may give rise to dust emissions are contained within bulk containers or skips or shielded within compounds. Details are provided in Table 6.

Table 6: Waste materials – storage and handling arrangements

Waste	Description / form	Location	Storage arrangements	Handling arrangements
Air Pollution Control (APC) Residues	Fine powder containing calcium hydroxide	K8 Biomass Boiler	Contained within sealed flexible intermediate bulk containers	Minimal handling for personnel safety, discharge directly into container from process and transported via fork lift
Boiler fuel	Reject material and process byproducts	Log Yard	Shielded within 7 m high log wall compound	Transported via wheeled bucket loaders where drop heights are minimised
Boiler ash	Wet ash from the combustion of biomass	K7, K8 and Preproduction	Contained within skips and shielded within 3-sided concrete block compound with roof and sloped entrance to provide bunding	Skips are transported via fork lift to the designated storage compound, handled by wheeled bucket loader for off-site disposal
Process residues throughout production	Wood-based residues	MDF and Particleboard	Contained within skips or shielded within storage compounds, depending on the moisture content / dust generation	Minimal handling for personnel safety, skips and transported via fork lift and residues within compounds are handled using wheeled bucket loaders or smaller mobile plant

(d). Regular maintenance and cleaning of equipment, transport routes and raw material storage areas.

Good housekeeping practices are employed to reduce the risk of fire across site and provide a safe and healthy workplace. Cleaning schedules are in place in all production areas through two processes to ensure equipment is operated safely, these include the Operational Protection Scheme (OPS) checks performed by all Operators and routine shutdown maintenance programmes.

Operator OPS checks are completed during each shift and reviewed by their relevant Management Teams to ensure that housekeeping standards are maintained. In high risk areas, for example where dust build-up may result in resident complaints, photographs are required and reviewed by Management daily. Some cleaning activities require plant shutdown to be performed safely and are therefore carried out on a periodic basis. These two avenues ensure that housekeeping is maintained on a continual basis.

Transportation routes are kept clean by use of a road sweeper. It is the responsibility of the EHS Manager to ensure a suitable frequency is maintained within the contract and that the external service provided is to a satisfactory level. This is usually a minimum of 3 days per week during winter and may be increased to 5 days per week during summer months. During periods of dry, warm weather the site employs a water bowser to dampen the site transport routes down to prevent the generation of dust from vehicle movements. This is performed by employees within the Site Services Team that are under the supervision of the EHS Manager.

(e). Review options for the reuse of process water and use of secondary water sources.

Dust suppression systems utilise recycled water wherever possible and are not utilised during wet weather in order to minimise water use.

BAT 23 In order to reduce diffuse dust emissions to air from the transport handling and storage of wood materials, BAT is to be set up and implement a dust management plan, as part of an environmental management system (see BAT 1) and to apply one or a combination of techniques given below:

(a). Regularly clean transport routes, storage areas and vehicles.

Transportation routes are kept clean by use of a road sweeper. It is the responsibility of the EHS Manager to ensure a suitable frequency is maintained within the contract and that the external service provided is to a satisfactory level. During periods of dry, warm weather the site employs a water bowser to dampen the site transport routes down to prevent the generation of dust from vehicle movements. This is performed by employees within the Site Services Team that are under the supervision of the EHS Manager.

Vehicles are cleaned by Operators on each shift and a record of this is maintained within the site OPS checks.

(b). Unload sawdust using covered drive - through unloading areas.

The majority (77%) of sawdust consumed on site is produced by the Sawmill or the Chipper processes. The remaining 23% is received on the Log Yard, as described in section 3.2, and stored in an external stockpile.

Sawdust produced on site is contained within covered conveyors prior to storage within a 500m^3 storage silo where it is then fed mechanically into the processes.

(c). Store sawdust, dust - prone material in silos, containers, roofed piles, etc. or enclose bulk storage areas.

The most dust-prone residue on site is recycled timber (<100mm) due to the low moisture content. The storage area for this material is on the southern boundary of the Log Yard where there is the most shielding provided from site infrastructure to provide the best guarding from the prevailing wind direction. In addition a 7m high, 3m wide log wall extends around the south, east and west sides of the stockpile.

The external stockpile provides raw material for approximately 1.6 days of production. Recycled timber is then, processed through the Pre-Screening plant prior to being housed within one of two storage silos (8,000 m^3).

Sawdust bought into site has a high moisture content and does not generate large amounts of dust when stored or handled.

(d). Suppress dust emissions by water sprinkling.

Water suppression systems are utilised across site at various locations, details of these are provided in Appendix B.

A further assessment of BAT is provided within the Dust Register within Appendix B.

4.3 Dust Risk Assessment and mitigation

Table 7 to Table 17 provide detail of each of the dust sources within each department and the potential impact they could have on local receptors. The tables include measures used to manage the risk and the overall perceived risk. The perceived overall risk is 'insignificant', 'not significant' or 'significant' in line with the EA's H1 guidance.

Table 18 provides further general measures which are practiced across site.

4.3.1 Department specific source receptor pathway routes and risk assessment

Table 7: Source-Pathway-Receptor routes – Logyard

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Timber transportation to site and empty vehicles from site	All receptors and receptors along roads (B5070).	Atmospheric dispersion – low level.	Rail deliveries of roundwood utilised to reduce road traffic. Designated sweep-off area for exiting vehicles which are inspected on exit from the site and returned to site if not sufficiently cleaned. Water bowser used if necessary. Weather forecast used to inform water bowser operator by 08:00 on weekdays. Minimal traffic at weekends.	Low	Visual soiling, airborne particulates, resident complaints	Not significant
Offloading of wood residue deliveries and movement of material within the Logyard (e.g. stock rotation).	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to predominant wind direction and proximity	Atmospheric dispersion – low level.	Reception facility provides windbreak from prevailing wind and mist air systems are used to contain material within. Residues not discharged at the reception facility are offloaded within three sided bays to the far west of the site. Loading shovel drop height is minimised. External stockpile heights are monitored and maintained.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
	to the Logyard.					
Chipping of oversize material.	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to predominant wind direction.	Atmospheric dispersion – low level.	Water sprays are used to control dust from shredding processes.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Cleaning chipper roof	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to predominant wind direction.	Atmospheric dispersion – roof level (8m).	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Movement of heavy vehicles on Logyard roadways.	Limited impact to receptors due to level of operation and layout of site – limited potential for windblown.	Atmospheric dispersion – low level.	Logyard roadways scraped clean on regular basis. Road sweeper utilised during the week. Water bowser used if necessary. Weather forecast used to inform water bowser operator by 08:00 on weekdays. Minimal traffic at weekends.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 8: Source-Pathway-Receptor routes –Paper Impregnation

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
VITS dryers – failure of wet scrubber.	Limited impact to receptors as central area – limited potential for windblown.	Atmospheric dispersion – roof level (15m).	Preventative maintenance schedules in place. LEV testing on a regular basis to indicate if there are any blockages. Fault alarms audible in the plant area. Low water level alarms on the scrubber tanks.	Low	Visual soiling, airborne particulates.	Not significant

Table 9: Source-Pathway-Receptor routes –Particleboard

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Transfer and processing of recycled timber.	All receptors.	Atmospheric dispersion – mixed levels (low and up to 26m).	Dry, dusty material is transferred within sealed systems. Parts of the material preparation is contained within plant buildings.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Discharge of material into skips / dumps.	Limited impact to receptors due to level of operation and layout of site– limited potential for windblown.	Atmospheric dispersion – low level.	Drop heights are minimised and strip curtains utilised as necessary. Dryer 4 ash discharge via pendulum flaps to control amount of material released.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Storage and transfer of sawdust, fines, and recycled timber in silos.	All receptors.	Atmospheric dispersion – high level (26m).	Level indicators and 3D measuring equipment on storage silos and indicators to detect blockages. High level trip in place to stop feeding of material.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Storage and transfer of ash into storage compound.	Limited impact to receptors due to level of operation and layout of site –	Atmospheric dispersion – low level.	Drop heights minimised. Covered area for storage. Ash is wetted prior to discharge into skips and transfer to storage area.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
	limited potential for windblown.					
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – mixed levels.	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – mixed levels. Filters: B07, B08, B09, B10, B11, B12, B20, B21, B23, B24, B25, and B26.	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that stops feed into filter box and requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Unblocking or failure of rotary valves, conveyors, chutes, screws, or blowlines.	All receptors.	Atmospheric dispersion – mixed levels.	Preventative maintenance in place for rotary valves, conveyors, screws and blowlines. Blockage indication installed within chutes. Pressure indication installed on blowlines. Process stopped once leak identified to make repairs. Bends are undergoing a programme of replacement with ceramic lining.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
Dryer 4 – failure of WESP 21 (A32).	All receptors.	Atmospheric dispersion – high level (52m).	Preventative maintenance schedules implemented. Cyclone abatement for particulate remains in the event of failure of the WESP.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
PB press – failure of the wet scrubber abatement.	All receptors.	Atmospheric dispersion – high level (62m).	Extraction ducting cleaned monthly. Faults on the abatement system alarm within the control room. LEV inspections carried out on regular basis that would detect blockages. Quarterly emissions monitoring carried out.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Roof / high level cleaning.	All receptors.	Atmospheric dispersion – mixed levels.	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised. Cleaning schedules are implemented.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 10: Source-Pathway-Receptor routes –Biomass boilers

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Release of lime dust during transfer to silo.	Limited impact to receptors as central area – however material very buoyant and will disperse easily.	Atmospheric dispersion – high level (10m).	Level probe in silo, high level alarm when at 90%. Driver in attendance during offload. Filter unit in operation for filling operation.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Release of ash into skips.	Limited impact to receptors due to level of operation and layout of site– limited potential for windblown.	Atmospheric dispersion – low level.	Blowline system to deliver dry ash to wet ash conveyor to absorb moisture before discharging in to skip. Drop height into the skip is minimised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Release of fly ash (A26 / A27).	All receptors.	Atmospheric dispersion – high level (30m).	K7 and K8 heat / emissions are used within the MDF dryers under normal operation. Regular maintenance and inspections of the K7 filter, K8 filter, and K8 Cyclones. Emissions are tested quarterly as part of the permit.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
			K8 has continuous monitoring after the filter box which would highlight any issues. In an emergency, boilers would be shut down in a controlled manner. Any leaks or spillages are recorded as an environmental incidents.			
Failure or unblocking of rotary valves, conveyors, chutes, screws, or blowlines	All receptors.	Atmospheric dispersion – mixed levels.	Preventative maintenance in place for rotary valves, conveyors, screws and blowlines. Blockage indication installed within chutes. Pressure indication installed on blowlines. Process stopped once leak identified to make repairs. Bends are undergoing a programme of replacement with ceramic lining.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Storage and handling of APC residues in flexible IBC bags.	Limited impact to receptors as central area – however material very buoyant and will disperse easily.	Atmospheric dispersion – low level.	Bags clipped onto discharge pipework to ensure system is sealed. Level indication on the bag filling station, visible in the control room. Regular inspections of the area made by boiler operators who would detect any leakage.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 11: Source-Pathway-Receptor routes –Finishing lines / T&G

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Sanding and cutting of boards.	Limited impact to receptors due to location of operations.	Atmospheric dispersion – sanding / cutting operations take place within plant buildings.	All saws / sanders are fitted with extraction which are subjected to LEV extraction testing on a regular basis. Pressure trending is monitored by skilled operators to detect blockages.	Very low	Visual soiling, airborne particulates.	Insignificant
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – roof level (16m).	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – roof level (16m). Filters: B01, B02, B13, B14, B15.	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that stops feed into filter box and requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Roof cleaning.	All receptors.	Atmospheric dispersion – roof level (11m).	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 12: Source-Pathway-Receptor routes –MDF

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Storage and transfer of wood chips in silos.	All receptors.	Atmospheric dispersion – mixed levels (33m at highest).	Level indication on silos with high level trip Enclosed conveying systems Brushes and scrapers on return belts to de-dust wood chip material.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Transfer and processing of wood fibres.	All receptors.	Atmospheric dispersion – mixed levels.	Sealed system preventative maintenance cleaned monthly to prevent build up	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Discharge of material into dumps.	Limited impact to receptors due to level of operation and layout of site– limited potential for windblown.	Atmospheric dispersion – low level.	Dumps are enclosed where possible. Drop heights are minimised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Dryers – failure of MDF 1 / MDF 2 cyclones (A29 and A30).	All receptors.	Atmospheric dispersion – high level (58m).	All drier emissions pass through the cyclones which cause the heavier particles to drop out whilst venting the clean gas to atmosphere. Emissions from the Cyclones are monitored quarterly subject to permit.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
			Preventative maintenance on rotary valves, seals etc. to ensure good operations cyclones			
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – mixed levels.	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – roof level (14m). Filters: B03, B04, B05, and B06.	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Unblocking or failure of rotary valves, conveyors, chutes, screws, or blowlines.	All receptors.	Atmospheric dispersion – mixed levels.	Preventative maintenance in place for rotary valves, conveyors, screws and blowlines. Blockage indication installed within chutes. Pressure indication installed on blowlines. Process stopped once leak identified to make repairs.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
MDF 1 / MDF 2 presses – failure of the wet scrubber abatement.	All receptors.	Atmospheric dispersion – high level (62m).	Extraction ducting cleaned monthly. Faults on the abatement system alarm within the control room. LEV inspections carried out on regular basis that would detect blockages. Quarterly emissions monitoring carried out.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Roof / high level cleaning.	All receptors.	Atmospheric dispersion – high level (58m).	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised. Material is bagged to prevent escape. Cleaning schedules are implemented.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 13: Source-Pathway-Receptor routes –OSB

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Storage and transfer of hacker chips.	All receptors.	Atmospheric dispersion	Level indication on silos with high level trip Enclosed conveying systems Brushes and scrapers on return belts to de-dust wood chip material.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Transfer and processing of wood strands.	All receptors.	Atmospheric dispersion – mixed levels.	Sealed system preventative maintenance cleaned monthly to prevent build up	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Discharge of material into dumps.	Limited impact to receptors due to level of operation and layout of site– limited potential for windblown.	Atmospheric dispersion – low level.	Dumps are enclosed where possible. Drop heights are minimised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Dryers – failure of WESP 32.	All receptors.	Atmospheric dispersion – high level (65.5m).	All OSB drier emissions pass through the WESP 32 which cause the heavier particles to drop out whilst venting the clean gas to atmosphere. Emissions from the WESP are monitored quarterly subject to permit.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
			Preventative maintenance on rotary valves, seals etc. to ensure good operations cyclones			
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – mixed levels.	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – roof level (14m). Filters: XXX	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Unblocking or failure of rotary valves, conveyors, chutes, screws, or blowlines.	All receptors.	Atmospheric dispersion – mixed levels.	Preventative maintenance in place for rotary valves, conveyors, screws and blowlines. Blockage indication installed within chutes. Pressure indication installed on blowlines. Process stopped once leak identified to make repairs.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
OSB presses – failure of the wet scrubber abatement.	All receptors.	Atmospheric dispersion – high level (62m).	Extraction ducting cleaned monthly. Faults on the abatement system alarm within the control room. LEV inspections carried out on regular basis that would detect blockages. Quarterly emissions monitoring carried out.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Roof / high level cleaning.	All receptors.	Atmospheric dispersion – high level (58m).	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised. Material is bagged to prevent escape. Cleaning schedules are implemented.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 14: Source-Pathway-Receptor routes –Melamine Facing

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Sanding and cutting of boards.	Limited impact to receptors due to location of operations.	Atmospheric dispersion – sanding / cutting operations take place within plant buildings.	All saws / sanders are fitted with extraction which are subjected to LEV extraction testing on a regular basis. Pressure trending is monitored by skilled operators to detect blockages.	Very low	Visual soiling, airborne particulates.	Insignificant
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – roof level (16m).	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – roof level (20m). Filters: B16, B17, B18, B19.	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that stops feed into filter box and requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Roof cleaning.	All receptors.	Atmospheric dispersion – sanding / cutting operations take place within plant buildings.	Debris is removed using water to mitigate potential for dust generation and off site release and where possible, vacuums are utilised.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Table 15: Source-Pathway-Receptor routes –Resin

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Urea offload during the movement and storage of material	All receptors	Atmospheric dispersion – low level.	Training and procedure. Housekeeping procedures and dust extraction on tipping pit and silo.	Low	Visual soiling, airborne particulates, resident complaints	Not significant
Melamine offloading and storage	All receptors	Atmospheric dispersion – storage area within plant building.	Stored in warehouse out of wind.	Low	Visual soiling, airborne particulates, resident complaints	Not significant
Process dust release	All receptors	Atmospheric dispersion – roof level (15m).	All fumes from reactor vented via the wet scrubber system. Faults on the scrubber system alarm in the control room.	Low	Visual soiling, airborne particulates, resident complaints	Not significant

Table 16: Source-Pathway-Receptor routes –Sawmill

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Movement of sawmill wood chips and wood dust.	All receptors	Atmospheric dispersion	Low risk of release to air due to high moisture and density. Conveyor heights restrict stack height to 6m. The storage area has a north and east wall to prevent wind blow. Gravity conveyors.	Low	Visual soiling, airborne particulates, resident complaints	Not significant
Process of round wood	All receptors	Atmospheric dispersion	All doors kept closed.	Low	Visual soiling, airborne particulates, resident complaints	Not significant

Table 17: Source-Pathway-Receptor routes –Kronoplus

Source of dust impact			Managing the risk	Assessing the risk		
Source	**Receptor**	**Pathway**	**Risk management**	**Possibility of exposure**	**Consequence**	**What is the overall risk? (balance of probability and consequence)**
Cutting of boards.	Limited impact to receptors as contained within buildings – limited potential for windblown.	Atmospheric dispersion - cutting operations take place within plant buildings.	All saws / sanders are fitted with extraction which are subjected to LEV extraction testing on a regular basis. New clean air monitors installed in exhaust system. When dust is detected, showing that the filter socks have failed, the entire extraction system goes into automatic shutdown to mitigate any releases.	Very low	Visual soiling, airborne particulates.	Insignificant
Activation of explosion relief panels.	All receptors.	Atmospheric dispersion – roof level (13m).	Activation switches present on explosion relief panels. Process stopped on detection to prevent further material entering the system.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
Failure of dust extraction filter boxes / blockages within / replacement of filter socks.	All receptors.	Atmospheric dispersion – roof level (13m). Filters: B27, B28, B29, B30, and B31.	Normal access is on the clean side of the filter for inspection / maintenance. Minimise dust release from used socks by placing them in bags once removed. Maintenance regime in place to reduce frequency of sock changes and failures with filter boxes. Pulse air failure trip that requires Operator intervention. Blockages can initially be attempted to be cleared via controlled emptying, only if this fails is opening of physical hatches required. New clean air monitors installed in exhaust system. When dust is detected, showing that the filter socks have failed, the entire extraction system goes into automatic shutdown to mitigate any releases.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Discharge of material into trailers.	All receptors	Atmospheric dispersion – roof level (13m)	Extraction system switched off when lines are being changed from normal line to trailers.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant
Unblocking or failure of rotary valves,, chutes, screws, or blowlines.	All receptors.	Atmospheric dispersion – roof level (10m).	Preventative maintenance in place for rotary valves, conveyors, screws and blowlines. Blockage indication installed within chutes. Pressure indication installed on blowlines. Process stopped once leak identified to make repairs.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

Source of dust impact			Managing the risk	Assessing the risk		
Dust handling systems - potential for dust or smoke from fires.	Limited impact to receptors as contained within buildings – limited potential for windblown.	Atmospheric dispersion – mixed levels.	Preventative maintenance in place to prevent fires due to friction (e.g. failed bearings / belt tracking) or degradation of equipment. Regular housekeeping inspections. Automatic spark detection and extinguishing systems in place within dust handling systems. Manual fire suppression systems also installed.	Low	Visual soiling, airborne particulates, resident complaints.	Not significant

4.3.2 General measures

Table 18: General measures that are used on site to control dust/particulates and other emissions

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Preventative measures			
Various fire procedures – no smoking on site, fire audits, fire team, heat systems and automatic sprinkler units, prevention of fires through stock rotation and log yard procedures, regular housekeeping, automatic spark detection and extinguishing systems in place within dust handling systems, all operators are aware of the procedures for raising the fire alarm / internal fire team to contain the fire.	Systems in place to prevent fires and to control fires should they occur. Prevention and control of any dust and particulates caused by fire.	Implemented at the site irrespective of dust release.	N/A – this is a continuous measure.
Enclosure within a building where possible.	This creates a solid barrier between the source of dust/particulates and receptors. This is considered to be the most effective method of control (i.e. control at source).	Implemented where possible for processes and storage, such as the RCF Tower.	N/A – this is a continuous measure.
Implementation of a speed limit for vehicles at the site, a 'no idling' policy, and minimisation of vehicle movements at the site.	Reducing vehicle movements and idling should reduce emissions from vehicles. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	This is implemented at the site as part of good practice. The speed limits are clearly established and signposted around the site. The no idling policy is identified in the site management system. The site layout (including internal roads) has been designed to minimise	N/A – this is a continuous measure.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
		unnecessary vehicle movements.	
Minimising drop heights	Minimising the height at which ash is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds.	This is implemented at the site as part of good practice. For example, at the exit of conveyors from process equipment, and from loading shovels.	N/A – this is a continuous measure.
Use of enclosed conveyors	This prevents the escape of dust during transport within the site.	Sawdust and boiler fuel is transported via tubular enclosed conveyors. Blowlines are also utilised for fine particulate dusts. Other material (larger fraction sizes such as chips) are transported in covered conveyors that are not fully enclosed.	N/A – this is a continuous measure.
Good housekeeping	A consistent, regular housekeeping regime supported by management ensures the site is regularly checked and issues remedied to prevent and remove dust and particulate build up.	It can be confirmed that good housekeeping is employed at the site, with a regime set out within the documented management systems. Regular washdown of process and storage areas are undertaken, along with visual inspections by staff.	Housekeeping is undertaken in accordance with a documented regime, with additional washdown undertaken following any visual inspections which have identified a build up of dust/litter.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Sheeting/covering of vehicles	This prevents the escape of debris, dust and particulates from vehicles as they travel to/from the site.	This is a requirement for vehicles entering/exiting the site and is identified in the site management systems. Visual inspections of vehicles before they leave the site ensure that sheeting is sufficiently fitted, reducing the potential for fugitive emissions during travel.	This is a continuous requirement for vehicles entering/exiting the site. This may not apply to vehicles moving around the site.
Designated sweep off area for vehicles. Weighbridge operators will turn vehicles away from exiting site unless they are clean. On site vehicles routinely cleaned at the Garage with a jet wash and interceptor.	This removes some of the dust/dirt/particulates from vehicles.	Continuous implementation and routine cleans. Site roads are damped down during extended periods of dry weather.	Used on all heavy vehicles exiting the site.
Surfacing the site with easy-to-clean, impermeable concrete surfaces	This should reduce the amount of dust and particulate material generated at ground level by vehicles and site activities and ensure washdown and housekeeping activities are effective.	It can be confirmed that the site is surfaced in impermeable concrete hardstanding. Maintenance and cleaning procedures / regimes are defined in the site management systems.	N/A – this is a continuous measure.
Minimisation of timber storage heights and volumes on site	Minimising the height at which timber is stored and handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds.	Maximum heights for stockpiles are clearly established and not exceeded. Walls/shields around stockpiles reduce	N/A – this is a continuous measure.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
		the potential for wind-whipping and atmospheric dispersion.	
Installation of walls/bank surrounding the site	Walls can disrupt wind flow across the site and reduce the generation of dust.	The Logyard has concrete barrier walls on the external western boundary and along the northern edge. Site buildings to the south and east provide protection. The main site has a high eastern bank with tree planting to provide visual and wind shield.	N/A – this is a continuous measure.
Use of high integrity equipment	Selection of high integrity, modern and advanced equipment can reduce the generation of particulates and dust.	High integrity equipment is installed at the Facility, with additional mitigation such as dust suppression sprays installed on processing equipment where technically/economically feasible. Regulatory controls and best-practice measures are implemented for vehicles/mobile plant to confirm they comply with	High integrity equipment has been selected by the technology provider when undertaking the detailed design of the Facility. Should it be identified during the lifetime of the Facility that equipment is no longer 'fit-for-purpose' or is otherwise resulting in significant fugitive emissions, it will be repaired or replaced as appropriate.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
		relevant emissions standards.	
Regular visual inspections	This allows for timely mitigation / remediation once build-ups of dust and litter have been identified.	Regular visual inspections are undertaken as part of documented procedures at the site. This extends to periodic inspections of site access roads and haul routes within the vicinity of the site for trackout/spillage of materials from vehicles. Inspections and subsequent actions are recorded in a log book, with mitigation measures implemented if necessary. Visual checks are also undertaken on HGVs leaving the site at the weighbridge and vehicles only allowed to leave if they are clean.	Inspections are undertaken on a periodic basis in accordance with documented procedures.
Minimising the amount of movement of ash once outside	Minimising the amount of ash movement can reduce the quantities of dust and particulates generated at the site.	Ash is directly transported from storage to transport off site.	N/A – this is a continuous measure.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Regular preventative maintenance	Regular preventative maintenance can help to maintain the integrity of plant and equipment, and as such reduce the generation of dust and particulates.	Regular preventative maintenance is undertaken for all plant and equipment (including conveyors, processing equipment, mobile plant).	Preventative maintenance is undertaken on a periodic basis in accordance with documented procedures.
Control of contractors	Kronospan are responsible for ensuring that contactors adhere to measures and practices to minimise dust impacts. Construction and maintenance activities that could generate dust may be performed by contractors. Prior to the commencement of any large construction projects, a risk assessment is undertaken to ensure that dust control and mitigation measures are identified and implemented.	Only personnel who have passed the site induction are permitted to work on site. Kronospan supervise all work undertaken by external contractors. Unsatisfactory environmental performance may incur financial penalties or result in individuals / companies being removed from site.	Control of contractors activities is undertaken on a daily basis. Should any complaints be received that may be due to contractor activities, these will be ceased until suitable control measures can be implemented.
Remedial measures			
Environmental incident and near miss reporting	Prompt response to a dust release will limit the impact. All employees are responsible for reporting and stopping any process incidents that may give rise to emissions of dust. This is established during site induction and regular refresher training sessions.	KC/EHS/PRO/010 describes the process for reporting environmental incidents and near misses.	Continuous
On-site sweeping	Effective in managing larger debris e.g. on roads, but may re-suspend smaller particles	Road sweepers are employed for site and	The sweepers are implemented when it has been identified (from

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
	(however this can be mitigated against using spray bars/filters etc on the sweepers).	village clean weekly and smaller sweepers are in use on site by departmental managers.	visual inspections) that there is a build up of dust/debris/litter.
Water suppression	Damping down of site areas (using hoses) can reduce dust and particulate re-suspension and may assist in the cleaning of the site.	During periods of dry weather, site roads are damped down to reduce the potential for fugitive dust emissions.	Implemented during extended periods of dry weather.
Spill kits/cleaning equipment	The provision of easily accessible spill kits and cleaning equipment can ensure that spills are readily mitigated, hence reducing the quantity of time available for dust/particulates to be further dispersed off-site.	Equipment is readily available on site to clean any spillages (including wet cleaning methods) as soon as reasonably practicable after the event. The EMS includes procedures to follow in the event of a significant spillage.	Spill kits/cleaning equipment are available at the site at all times. The equipment is also used in the event of a spill.
Cleaning of roofs	Water bowser used on-site during dry conditions and roofs regularly inspected and cleaned to remove dust and debris.	Frequent roof cleaning to avoid build up of dust and debris.	Implemented on visual inspection or at higher frequencies to avoid build up of dust and debris.

4.3.3 Specific dust prevention equipment

The items of equipment with dust prevention equipment are listed within the site Dust Register. The Dust Register will be updated regularly to ensure that all dust sources are identified and included within the ongoing assessment process that drives the continual improvement programme for the site. Dust prevention equipment is also listed within the departmental aspects registers.

4.3.4 Dust Risk Assessment Summary

The risk assessment and management measures have shown that the perceived risk of dust from the Facility is 'not significant' or 'insignificant'. Should the monitoring (see section 5) or complaints procedure (see section 6) prove otherwise, appropriate action will be taken to identify and stop the source of the dust. Following this, the risk assessment and DMP will be reviewed and updated accordingly to ensure its effectiveness.

4.4 Abnormal operations

The above sections consider normal operations. It is possible that abnormal operations (equipment failure, weather, emergencies), such as those listed in Table 19 could increase the risk of dust impacts. Management for the following abnormal situations is as listed in Table 19.

Table 19: Abnormal Events and Response Measures

Event	Location	Likely Effect	Response Measures	Timescales for Response
Fire	Site-wide	Products of combustion released to atmosphere	Fire prevention and mitigation plan in place. Emergency plans are implemented to ensure situation is brought under control as efficiently as possible.	Immediate
Prolonged periods of high winds	Site-wide	Increased likelihood of residues being windblown	Increased inspection frequency of on-site processes.	Throughout duration
Prolonged periods of dry weather	Site-wide	Increased likelihood of residues being windblown due to reduced moisture content	Increased use of the site water bowser to dampen roadways and reduce dust generated by traffic movements. Utilisation of the site mobile water cannons, as required.	Throughout duration
Activation of explosion panels	Site-wide on dust extraction /	Release of process residues to atmosphere to avoid	Explosion panel activation switches are interlocked with the relevant	Immediate

Event	Location	Likely Effect	Response Measures	Timescales for Response
	abatement systems	catastrophic structural failures	process(es) to ensure safe and efficient shutdown. Area is dampened down to prevent material becoming windblown.	
Failure of residue conveying systems	Site-wide	Release of process residues to atmosphere that may result in complaints	Process is stopped immediately.	Immediate

4.5 Management of change

When equipment is to be replaced a decision is made as to whether to replace like-for-like or whether different equipment is more appropriate. As part of this decision-making process consideration is made of dust impacts of the equipment and whether an alternative option could be used which would reduce off-site dust impacts.

4.6 Other considerations

4.6.1 Water use

Kronospan ensures an adequate water supply/use of process water is provided at the Facility for effective dust/particulate matter mitigation, with recycled water used where possible. There are two mobile water cannons on site at all times which can be put into service as needed.

5 Monitoring

As explained within section 5.6, due to the low baseline concentrations of particulates, additional emissions monitoring equipment is not proposed at the Facility. Furthermore, there are no AQMAs for particulates within 5 km of the Facility.

There are a number of alternative monitoring methods which have been implemented to demonstrate compliance with the EP conditions. These include the following:

- Documented management systems;
- Visual dust monitoring;
- Weather monitoring;
- QA/QC and record keeping; and
- Reporting of data.

5.1 ISO accredited EMS

An EMS is in operation which includes a range of monitoring and recording procedures. This DMP forms part of the EMS and is reviewed and updated accordingly. The EMS includes procedures for managing external complaints. Further detail on the complaints procedures at the Facility are presented within section 6.

5.2 Visual dust monitoring

An EMS is in operation which includes a range of monitoring and recording procedures. This DMP forms part of the EMS and is reviewed and updated accordingly.

The Departmental Managers undertake visual inspections of the site on a daily basis, to monitor compliance with air quality and dust control procedures, although these are not formally recorded. Recorded environmental audits and checklists are implemented weekly. This includes, but is not limited to, the road network on-site and the off-site roads in the vicinity of the Facility. The procedure is detailed in the EMS. The EHS Manager ensures road sweepers and water bowsers are operated if required.

The frequency of visual inspections is increased when activities with a high potential to produce dust and emissions are being carried out, and during prolonged dry or windy weather conditions. Any exceptional incidents that cause dust and air quality pollutant emissions (such as spillages) are recorded in an environmental incident and near miss log, alongside any remedial actions. Remedial actions may include road sweepers being operated if required.

The purpose of the monitoring is to ensure that dust impacts at local receptors does not result in unacceptable impacts. Following a dust complaint, the frequency of monitoring will be increased.

5.3 Weather monitoring

As detailed within section 0, the site management is responsible for monitoring weather forecasts to determine if long dry or windy spells are forecast – this enables the proactive application of dust control measures (for example, damping down of site roads). In the case of extreme weather conditions, or following a serious complaint, activities at the Facility may be temporarily put on hold.

5.4 QA/QC and record keeping

As detailed within section 5.2, records of monitoring are kept in accordance with procedures documented in the site EMS. Monitoring records are regularly reviewed with the aim of improving dust management measures at the site and reducing the frequency of periods of high dust levels.

5.5 Reporting of data

Reporting of data to NRW is undertaken as required in accordance with the conditions of the EP for the Facility. Any complaints received are reported to NRW in accordance with the reporting and complaints procedure for the site – refer to section 6 for further details.

Environmental incidents that impact off-site receptors are investigated and reported to the regulator in accordance with the conditions of the EP using the Part A/B form.

5.6 Existing monitoring data

In order to assist local authorities with their responsibilities under Local Air Quality Management, Defra provides modelled background concentrations of pollutants throughout the UK on a 1 km by 1 km grid. This model is based on known pollution sources and background measurements and is used by local authorities in lieu of suitable monitoring data. A summary of the available mapped background data for particulates is presented in Table 20. The mapped background concentrations are well below the relevant Air Quality Assessment Levels (AQALs).

Table 20: Mapped background data

Pollutant	Annual Mean AQAL (µg/m³)	Concentration (µg/m³)		Dataset
		At Facility	Max within 2 km of the site	
Particulate matter (PM_{10})	40	10.94	15.39	DEFRA 2018 Dataset
Particulate matter ($PM_{2.5}$)	20	7.58	10.94	DEFRA 2018 Dataset

Source: © Crown 2023 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

This demonstrates that the background concentration in the area is low and well below the AQALs.

WCBC operate two continuous monitoring stations within Chirk:

1. Chirk, an urban industrial site, set up 22 July 2020; and
2. Chirk Community Hospital, an urban background site, set up 29 November 2021.

The location of both sites is shown on Figure 4 of Appendix A. Both sites monitor for particulates (as PM_{10}, $PM_{2.5}$ and PM_1), including temperature, humidity, wind direction and speed.

The following tables presents a summary of the particulate monitoring from these sites, noting that both sites include a contribution from the operation of the Facility.

Table 21: Local monitoring data

Pollutant	Parameter	AQAL (µg/m³)	Concentration (µg/m³)		
			Chirk 2021	Chirk 2022	Chirk Hospital 2022
Particulate matter (PM_{10})	Annual mean	40	8.3	11.4	10.4
	Max. daily mean	-	24.4	36.9	39.1
	90th %ile of daily mean	50	13.4	18.4	16.5
Particulate matter ($PM_{2.5}$)	Annual mean	20	2.9	4.3	5.4

This shows that background concentrations are well below the AQALs, even with the contribution from the Facility.

6 Reporting and complaints response

The measures outlined in this DMP are aimed at preventing emissions of dust and particulates to the extent where complaints may be made regarding dust and/or particulates by nearby sensitive receptors. Nevertheless, it is considered that having an established complaints procedure is an essential part of implementing a successful DMP.

As such, the EMS (see document KC/EHS/PRO/016) includes procedures for managing external complaints. This includes complaints in relation to dust and particulate emissions from the Facility. The procedures include those for the recording of the initial complaint, the approach to investigation of the possible cause, and determination of actions to prevent recurrence. This aligns with the requirements of the EP. The EHS Department and Departmental Managers are responsible for handling any complaints that are received and for logging any complaints received in the site's incident reporting system. Complaints may be received directly by the site or through the NRW Incident Communications Centre. They are also responsible for investigating potential sources of the complaints and providing detail to NRW on the outcome of the investigation and whether any remedial actions have been implemented.

Public comments, complaints and concerns could be received by email, telephone or letter, either directly to the site or via the relevant authorities (such as the Local Planning Authority or NRW). Kronospan aims to respond to complaints within 2 working days of receipt, with a maximum time of 7 days implemented to respond to a complaint. An example resident complaint form is included within Appendix C.

6.1 Engagement with the community

Kronospan hosts quarterly Kronospan Liaison Group meetings with WCBC, NRW, Chirk Town Councillors and Unite the Union. These meetings are occasionally followed by drop in sessions at the Parish Hall, which are open to all. The aim of the meeting is to inform stakeholders on work that is upcoming, the status of ongoing improvement programmes, and to understand if stakeholders have any concerns including dust. If as a result of the meeting with the Liaison Group noise issues have arisen the EHS team will investigate the issue following the environmental incident procedure. In line with this the departmental manager will be required to investigate the cause of the dust, identify what remedial actions are required and implement these.

Other contact to Kronospan should be made via the main site contact number or via NRW incident Communication Centre.

7 Actions

Should there be any unacceptable emissions of dust identified by the monitoring, a complaint, or departmental managers, the source and reason for the dust will be investigated and any relevant mitigation arranged. Under certain abnormal operations direction will be sought from Senior Management Team. This may involve the shut-down of operations causing the dust until a suitable mitigation measure can be put into place. However, a judgement will need to be made to ensure that any equipment can be safely shut-down.

The source and mitigation measures will be monitored by the departmental managers for as long as necessary to ensure that the mitigation measures have been successful and the unacceptable dust has been halted.

8 Improvements

All elbows on high and medium risk blow lines have, or will be, lined with a ceramic tile of at least 12 mm thickness and 2-part Ceramic Epoxy Wear Compound.
All none-ceramic lined elbows will receive a thickness measurement check before and after each elbow at least every six months. Ceramic lined elbows will receive check of at least once per year.

9 Summary

This DMP has been prepared to set out operational procedures to control and mitigate dust and particulate emissions from the Facility. It is to be refined and updated on an annual basis as part of periodic reviews of the documented management systems at the Facility. Reviews will serve to confirm the identification of any new sensitive receptors, sources of dust, monitoring equipment or changes to relevant procedures (such as complaints handling and reporting).

Appendices

A Plans and drawings

Legend

Installation Boundary

Client:	Kronospan
Site:	Chirk
Project:	Management Plans

Title:

Figure 1 - Site Location Plan

Drawn by: RSF	Date: 22/12/2023

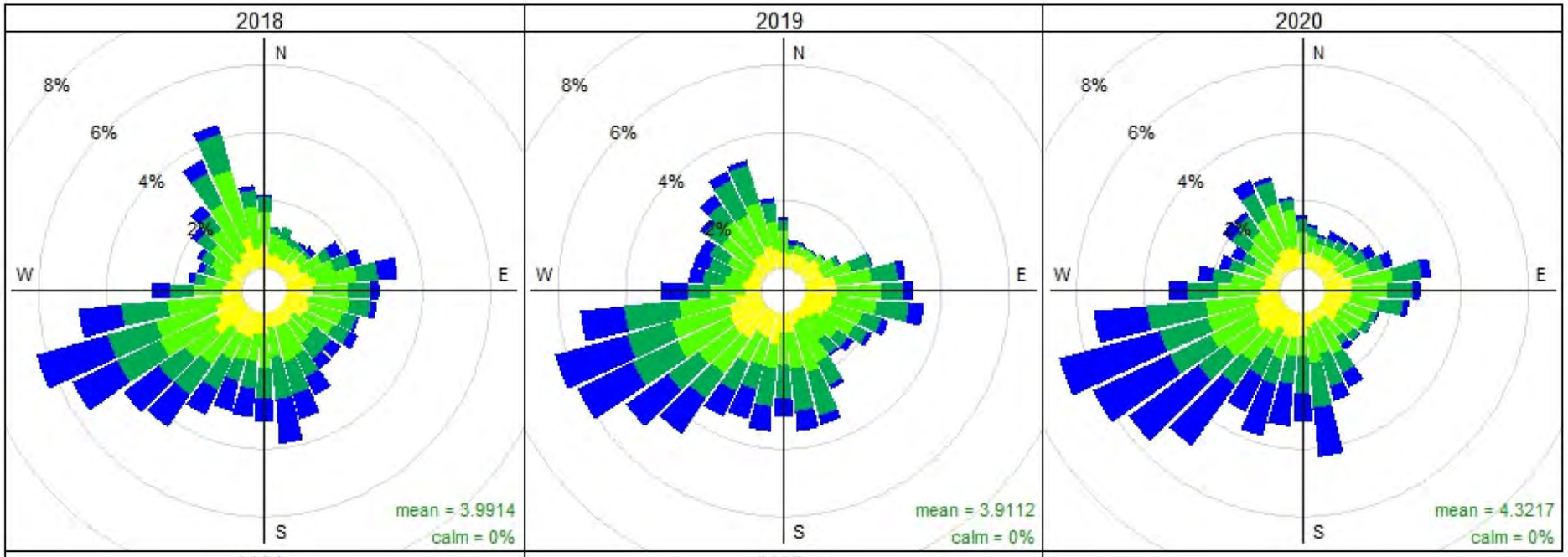
0 0.1 0.2 0.4 km

Scale: 1:10,000

N

FICHTNER
Consulting Engineers Limited

Kingsgate, Wellington Road North,
Stockport, Cheshire, SK4 1LW
Tel: 0161 476 0032
Fax: 0161 474 0618



Frequency of counts by wind direction (%)

Title:

Figure 2 - Shawbury met data wind roses

Drawn by: RSF | Date: 03/04/2023

Scale:

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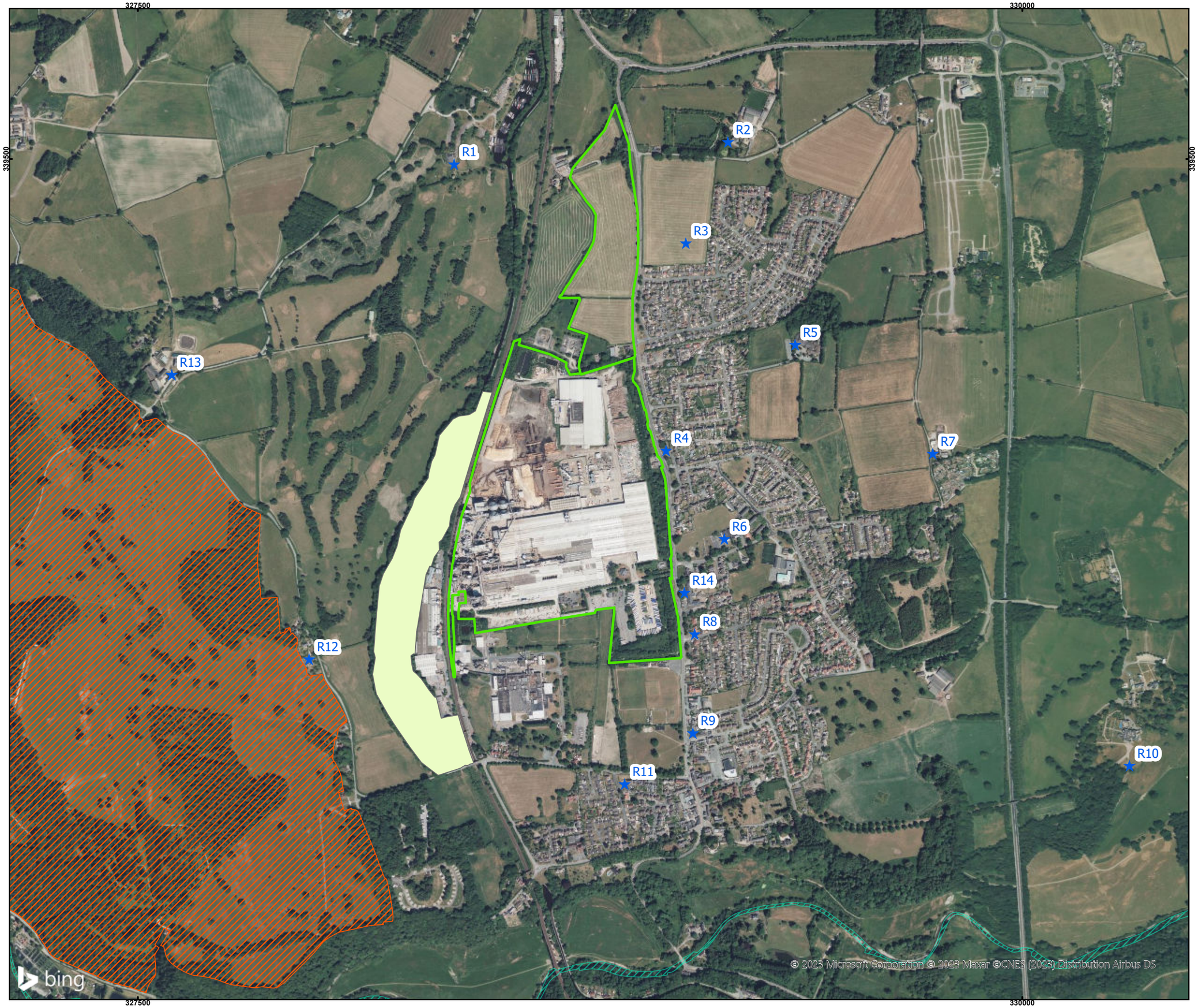
Consulting Engineers Limited

Kingsgate, Wellington Road North,
Stockport, Cheshire, SK4 1LW
Tel: 0161 476 0032
Fax: 0161 474 0618



Legend

- Installation Boundary
- Sensitive Receptors
- E1
- E2
- E3

Client:	Kronospan
Site:	Chirk
Project:	2376_Kronospan_Management_Plans
Title:	Figure 3 - Sensitive Receptors (DMP)

Drawn by: RSF	Date: 03/04/2023

0 0.1 0.2 0.4 km

Scale: 1:10,000

N

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Stockport, Cheshire, SK4 1LW
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Fax: 0161 474 0618

Legend

- WCBC Air Quality Monitoring Stations
- Installation Boundary

Client:	Kronospan
Site:	Chirk
Project:	2376_Kronospan_Management_Plans
Title:	Figure 4 - Local Monitoring Locations
Drawn by: RSF	Date: 03/04/2023

0 0.1 0.2 0.4 km

Scale: 1:10,000

N

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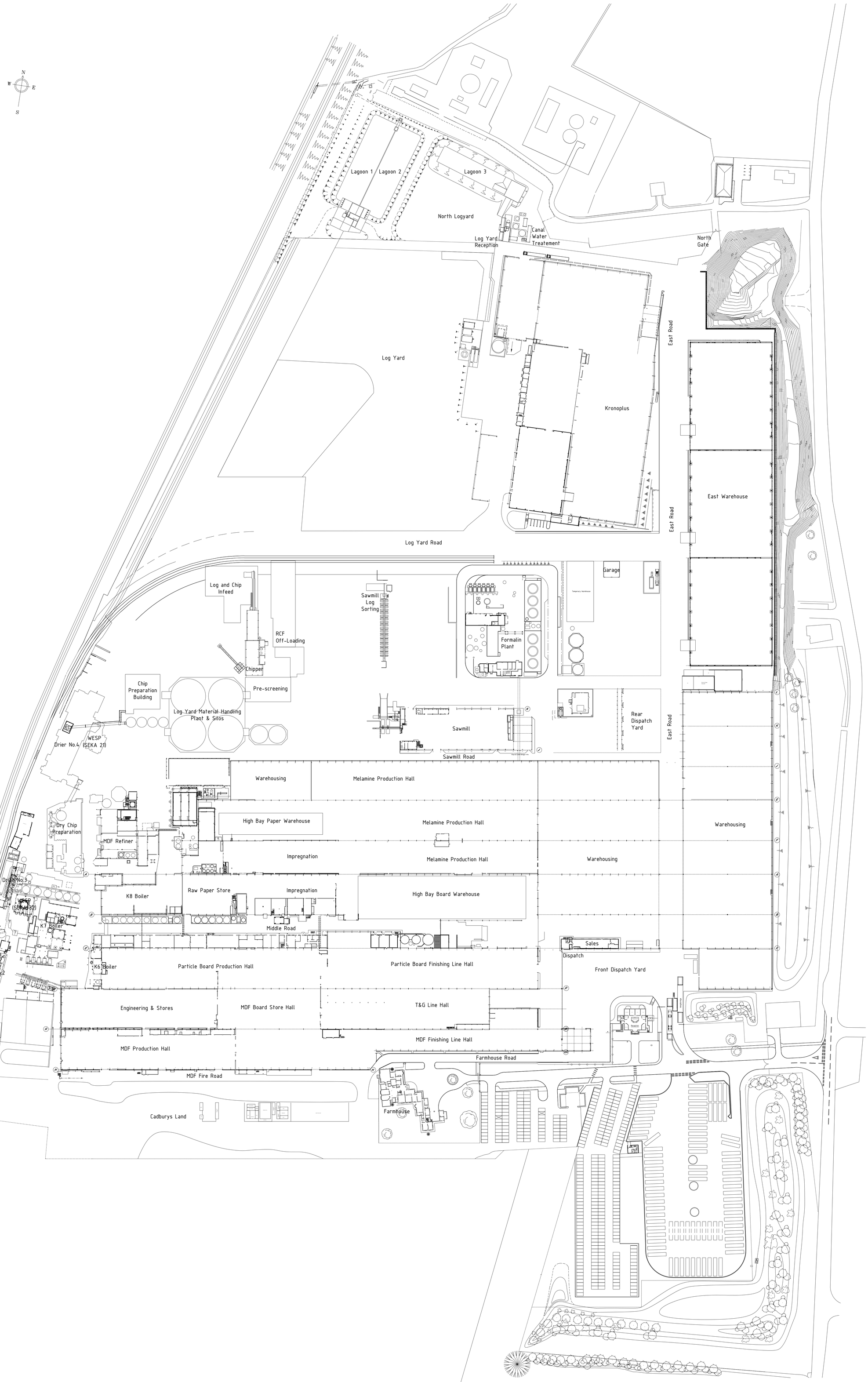
Kingsgate, Wellington Road North,
Stockport, Cheshire, SK4 1LW
Tel: 0161 476 0032
Fax: 0161 474 0618



Site Plan - Buildings & Structures Only (7000/508) Replaces Drawing No. 7000/236

Revision	Description	Date	Name
E	Site Plan Reverted back to original layout without machinery	13.02.2020	M.Welch
D	Hatch areas updated	07.10.2019	A.H
C	Schrader water treatment plant added. MFC offloading structure on Middle Road removed	30.05.2019	M.Welch
B	Hatches removed and outline of Drier No.4 & Dry Chip Prep standardised	03.04.2019	M.Welch
A	Main areas updated with hatches	22.01.2019	R.Z.

Status

	Date	Name
Project leader		
Drawn	18.01.2017	M.W.
Checked		

Size: A0 | Scale: 1:1000 | origin | Norm: ISO

Project number | Projekt name

.

Description

Kronospan Chirk

Site Plan - Buildings & Structures Only

Drawing number: 7000/508 | Index: E | Sheet/Number: /

kronospan
Limited Chirk
Chirk
Wrexham
LL14 5NT
Tel: 0044 (0)1691 773361

N
W E
S

KEY

- Roundwood
- RCT Overflow
- Chip / Chip Overflow
- Sawdust
- RCT
- Processed Boiler Fuel
- Unprocessed Boiler Fuel
- Bark
- Area of Log Storage Soft Standing
- Lorry Sweep-off Area
- Dust Supression
- Log Wall

Lagoon 1
Lagoon 2
Lagoon 3
North Logyard
Log Yard Reception
Canal Water Treatement
North Gate
ROUNDWOOD 2365m²
RCT OVERFLOW 1129m²
CHIP OVERFLOW 2009m²
SAWDUST 951m²
RCT 100-300mm 1343m²
CHIP 2238m²
PROCESSED BOILER FUEL 559m²
UNPROCESSED BOILER FUEL 559m²
BARK 490m²
QUARANTINE AREA
Log Yard
ROUNDWOOD 9502m²
Kronoplus
East Road
Sweep-off Area
Sweep-off Area
Log Yard Road
Log and Chip Infeed
RCT <100mm 2282m²
RCF Off-Loading
Chipper
Chip Preparation Building
Pre-screening
Log Yard Material Handling Plant & Silos
WESP Drier No.4 (SEKA 21)
ROUNDWOOD 2917m²
Sawmill Log Sorting
ROUNDWOOD 3848m²
CHIP 410m²
Sawmill
Sawmill Road
Formalin Plant
Garage
Temporary Warehouse
Rear Dispatch Yard
East Road
East Wareho
Warehousi
Warehousing
Melamine Production Hall
High Bay Paper Warehouse
Melamine Production Hall
Dry Chip Preparation
MDF Refiner
Impregnation
Melamine Production Hall
Warehousing
Drier No.3
WESP (SEKA 32)
K7 Boiler
K8 Boiler
Raw Paper Store
Impregnation
High Bay Board Warehouse
Middle Road
Sales
Dispatch
K6 Boiler
Particle Board Production Hall
Particle Board Finishing Line Hall
Front Dispatch Yard
Engineering & Stores
MDF Board Store Hall
T&G Line Hall
MDF Finishing Line Hall
MDF Production Hall
MDF Fire Road
Farmhouse Road
Reception
Weighbridge
Farmhouse

Index	Modification	Date	Name
.	.	.	.
B	Material areas added	21.11.2023	M.Welch
.	.	.	.

Status .

	Date	Name	Size
Project leader	.	.	A1
Drawn	03.10.2023	C.Emery	origin .
Checked	03.10.2023	A.Hilditch	

Scale 1:1000
Norm ISO

Xylo Technologies AG
Rüthofstrasse 1
CH-9052 Niederteufen
Schweiz

Technology
kronospan
Kronospan Ltd
Maesgwyn Farm
LL14 5NT Chirk, Wrexham
United Kingdom

Project number .
Projekt name .
Description
Logyard
Proposed Stock Layout
Drawing number 7000_738
Index B
Sheet/Number ./.

Sub Category .
Division .
Process .
Subprocess .

KRONOSPAN STATUS
Date 21-11-2023

STATUS	WAITED COMMENTS
By KRONOSPAN	Deadline YYYY-MM-DD
Date YYYY-MM-DD	By
Ref	By
DISTRIBUTION	**WAITED APPROVAL**
Date YYYY-MM-DD	Deadline YYYY-MM-DD
Attn #####	By
Ref	By
Ref	By
WARNING	
CERTIFIED Date YYYY-MM-DD	

B Dust register

C Resident complaint form

DATE		**TIME**		**Record fully at time of call**
CALLER'S NAME		**ADDRESS**		
TELEPHONE		**CAR REG.**		
CALL TAKEN BY		**INVESTIGATED BY**		
WEATHER CONDITIONS				
COMPLAINT				
INVESTIGATION & CORRECTIVE ACTION (what was investigated; and what actions were taken)				
ROOT CAUSE				**Complete within 7 days**
PREVENTIVE ACTION (agreed process changes or management controls)				
RESPONSE TO CALLER				
DATE CLOSED		**REF NO.**		
Circulate immediately to: **B Spruce M Jones C Barker, C Prystaz, J Morris, C Emery, J Ewing, J Greenhalgh, D Speed, & V Smith**				

ENGINEERING + CONSULTING

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