DUST & EMISSION MANAGEMENT PLAN

Operators Name:	Morris Recycling Limited
Site Name:	Morris Recycling
Address:	Unit 34 Coneygree Industrial Estate, Tipton, DY4 8XP
Grid Reference:	SO 95764 90998
Permit No:	EPR/QP3725SW

Revision History

Issue	Date	Comments	Author	Approved by
1	Jan 2024	Dust Management Plan created	Vicki Cooper	Andy Morris

1 INTRODUCTION

1.1 Dust Management Aims

The following document outlines the Dust Management Plan (DMP) that has been put in place for the monitoring and control of dust at Morris Recycling Ltd at Unit 34 Coneygree Industrial Estate, Tipton, DY4 8XP. The DMP forms part of the environmental management system that Morris Recycling operates to ensure their operations comply with environmental permit conditions. The DMP is a living document subject to on-going review, with updating as appropriate.

This DMP has been produced in accordance with the Environment Agency's (EA) Control and Monitor Emissions for your Environmental Permit[1] guidance and relates to the uPVC and PVC plastic waste materials accepted, stored and treated at the site which may produce fugitive emissions.

The site only handles PVC and uPVC plastic waste. Unplasticized polyvinyl chloride, sometimes known as uPVC, is a kind of plastic that is frequently used in doors and windows.

The following treatment is performed on site:

- uPVC window frames:
  - Hammermill in open fronted building to sort and separate the plastic, metal, rubber, glass and other contaminants on a window frame
- uPVC and PVC plastics
  - Granulation in building
  - Colour sort/Hamos in building
  - Extruder in building

The treatment operation produces plastic granulate and pellet for new PVC plastic products.

When the waste is received, it is whole window frames or lengths of profiles and therefore the received waste will not be dusty. Processing of PVC and uPVC could cause dust when shredded or granulated, which could have an impact which if it does, can cause complaints. Dust is small particulate matter between 1 and 75 microns and is produced by the processing of PVC and uPVC by the action of shredding or granulation. The amount of dust generated is a factor of the control measures in place during the treatment activities.

Dust emission is the process by which the dust becomes airborne. The most significant cause is windblown. Once dust is created and becomes airborne, air currents disperse it. Fine dust particles can be deposited over a wide area. Obviously, the production of dust is not welcomed. In addition to being an irritant and health hazard, dust is a loss of product and can impact equipment resulting in additional plant breakdown, repair and maintenance. It is in Morris Recycling's interest to control and reduce dust to a minimum. The control of dust at a site is based on the effective implementation of best practices. This assessment identifies the causes of dust and describes the methods which will be involved in the management of dust at the site to reduce the likelihood of dust being produced, and blown within or beyond the boundaries of the site to a minimum.

1.2 Dust Management Aims

The aim of the DMP is to:

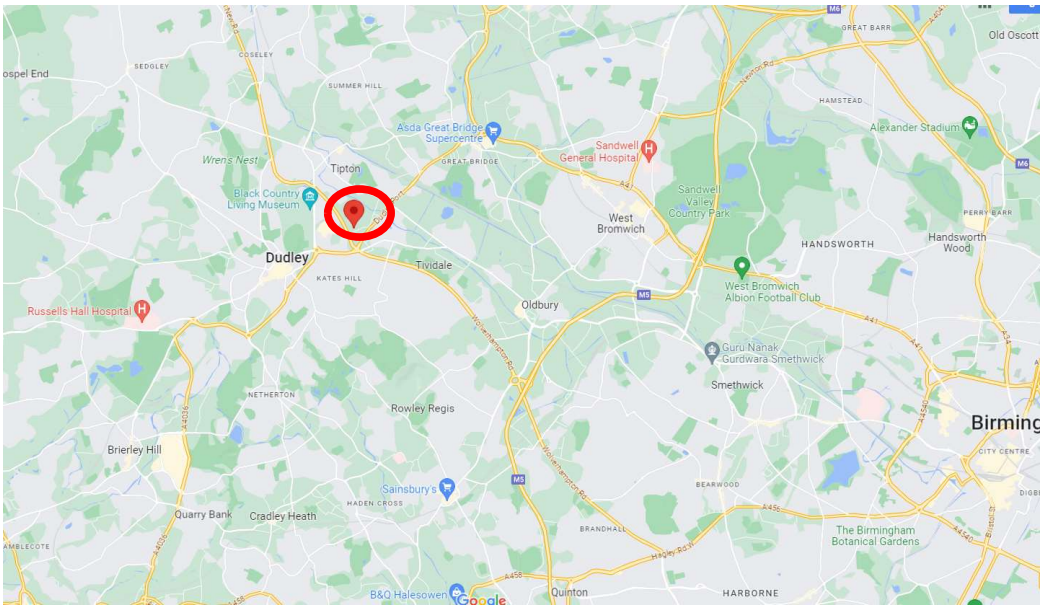
a) Minimise dust generation and migration from the site
b) Ensure nuisance caused to nearby receptors from dust is kept to a minimum
c) Ensure that operations at the site have consideration for potential dust generation
d) Specify monitoring and record keeping requirements

[1] https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#history

1.3 Site Setting

The site is located on an existing industrial area on Coneygre Industrial Estate, Tipton, DY4 8XP.

The site is located with easy access to the dual carriageway A4123 New Birmingham Road, connecting to the A4036 Bypass and M5 road networks. It is a self-contained property with office space and rear and side yards. The external space includes designated staff parking spaces at the front and a secure fenced rear yard with gated access. Storage of whole window frames is done in the external yard, all treatment of waste is performed in a building.



1.4 Site Drawings

The following drawings support the Dust Management Plan:

Drawing Title	Drawing Number
Site Location Plan	01
Environmental Permit Boundary	02
Site Infrastructure Plan	03
Site Storage and Internal Layout Plan	04
Site Drainage Plan	05
Fire Protection Plan and Fire Hydrant Locations	06
Water Pooling Plan	07
Receptor Plan 1km	08
Block Material Flow Diagram	09
Severn Trent Waste Water Map	569353-1

1.5 Sensitive Receptors

For the purpose of this assessment, a radius of 1km has been adopted to identify potential receptors. Please see Receptor Plan drawing no: 08 at Annex 1 below.

The site is located in an industrial area. The nearest receptors are:

- Houses on Newcome Drive, the closest of which are approximately 200 metres north east of the site; and
- Houses on Burnt Tree, the closest of which are approximately 230 metres to the south east of the site.
- There are 8 schools, academy's or colleges within 1km of the site, the closest being 580 metres north east of the site.

Table 1.1 Distances to Selected, Representative Sensitive Locations

Boundary	Closest property	Approximate distance to Morris Recycling site boundary (m)
North East	Houses on Newcome Drive	200
South East	Houses on Burnt Tree	230
North	Sacred Heart Primary School	790
North	Coneygre Community Centre	740
South East	Burnt Tree Primary School	645
South East	Tividale Hall Primary School	995
South West	Beechwood CE Primary School	780
South West	St Joseph's Catholic Primary School	845
West	NHS Guest Outpatient Centre	875
North	Silvertrees Academy	995
North	Tipton Green Junior School	980
West	Black County Institute of Technology	945

Table 1.2 Sources of Dust and/or other Emissions

The site is located on an industrial estate which includes heavy industrial processes i.e foundry.

Company	Address	Type of Business	Distance from Morris Recycling site boundary (m)
Charterbrae	Coneygre Ind. Est.	Manufacturers	10
New Design	Coneygre Ind. Est.	Furniture Manufacturers	10
Prestige Motoring Group	Coneygre Ind. Est.	Car sales and Repairs	10
Active Carriers	Coneygre Ind. Est.	Haulage/Couriers	20
RS Recovery	Coneygre Ind. Est.	Vehicle Recovery	100
Britmet	Coneygre Ind. Est.	Roof Tile Manufacturers	100
Screwfix	Coneygre Ind. Est.	Builders Supplies	250
Thomas Dudley	Birmingham New Rd	Foundry	400

1.6 Wind Direction

The following section identifies the prevailing weather conditions on site, in particular the wind direction in order to predict the path of likely aerial dispersion of dust generated on site.

Information on wind direction has been derived from https://www.wunderground.com/ using the nearest weather station at Birmingham International Airport, Birmingham.

Results of data 19th Jul 2023–19th Jan 2024, frequency of wind direction relating to wind speed

Wind Speed	North	North East	East	South East	South	South West	West	North West
0-4 mph	0.00%	0.00%	0.00%	0.30%	0.30%	2.10%	0.30%	0.60%
5-9 mph	0.00%	0.00%	1.50%	3.29%	5.39%	23.65%	12.57%	8.68%
10-14 mph	1.80%	0.00%	0.30%	7.19%	2.10%	17.96%	2.99%	6.59%
15-24 mph	0.30%	0.00%	0.00%	0.30%	0.00%	1.20%	0.00%	0.60%

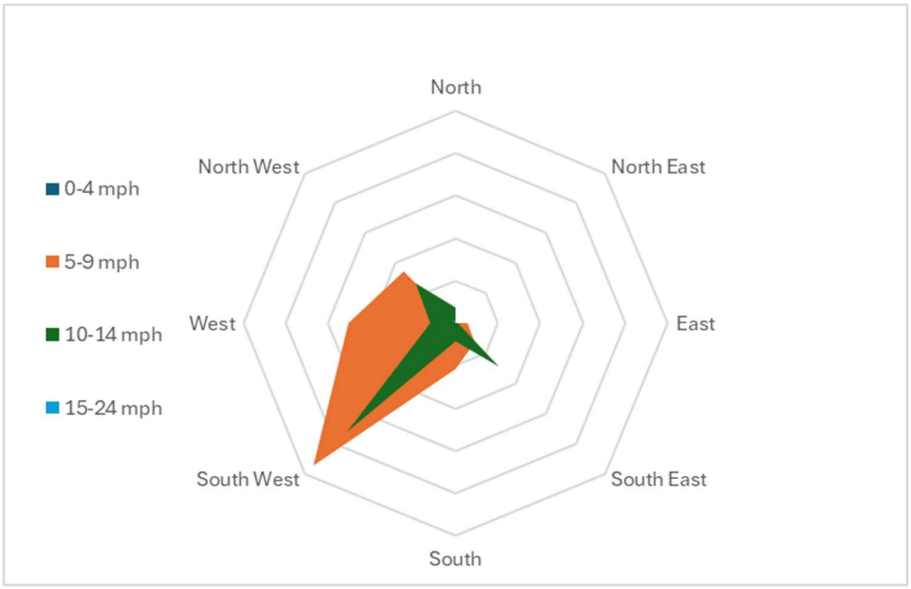


Figure 1 – Wind Direction Rose relating to wind speed (19 July 2023 – 19 Jan 2024)

2 OPERATIONS AT MORRIS RECYCLING

2.1 Plastic deliveries to Morris Recycling

uPVC window frames and Clean upvc off-cuts and profile are delivered to site in sheeted roro skips or box (panel) vans. The emission rating of the vehicles are Euro 5 or Euro 6.

The waste received is whole window frames or plastic profiles, which is not dusty upon arrival and a heavy waste so it would not cause dust. Due to this there is no requirement to provide customers or vehicle drivers with any special instructions about dusty loads.

The following records are kept to show the waste in and out of site: Duty of care notes. Delivery/Collection notes, weighbridge tickets.

2.2 Waste Processes and Types

The following treatment is performed on site:

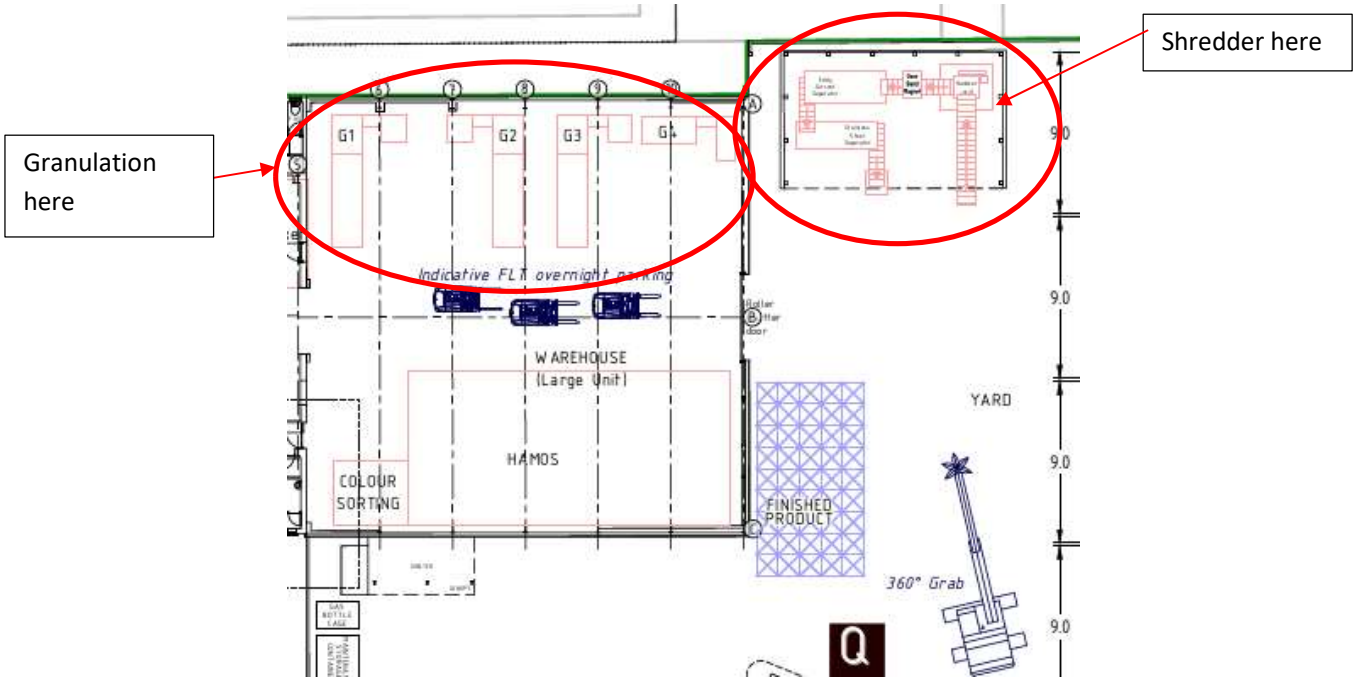
- uPVC window frames:
  - Hammermill in open fronted building to sort and separate the plastic, metal, rubber, glass and other contaminants on a window frame
- uPVC and PVC plastics
  - Granulation in building
  - Colour sort/Hamos in building
  - Extruder in building

The treatment operation produces plastic granulate and pellet for new PVC plastic products.

There are 2 treatment activities where dust might be created:

- Shredding of whole window frames
- Granulation of plastic

The location where these activities are undertaken on site are shown below. The image taken from Site Storage and Internal Plant Layout Plan drawing no: 04



Please see below the waste treatment activities where dust could be an issue, the risk of dust and the controls in place:

Process	Waste	Stored / Treated	Risk of dust	Summary of controls (further details section 3)
Shredder	uPVC window frames	Stored whole - dedicated external area Treated in 3 sided building	Low risk Storage - Whole window frame material is heavy, not dusty and will not become airborne. Small enclosed shredder, all treatment equipment is within building. 3 sides of the building that houses the shredder are to the ground. Full roof in place 	Bay for storage of inbound uPVC windows is next to shredder thus reducing transfer of material to shredder. The shredder is an enclosed shredder with a hood over the top. Start of conveyor into shredder at ground level meaning low loading height. The conveyor is loaded with a forklift truck. Conveyor belt is within conveyor frame, sides of conveyor is approx. 150mm deep meaning wind can not whip material off it. The window frames are loaded single layers on the conveyor, i.e not piled up, as this is needed for the

				equipment to adequately shred the frames. Transfer points and processes reduced to a minimum. Housekeeping and a maintenance safety check is performed every time the shredder is used at the end of the shift.
Granulation	uPVC and PVC	Stored – material before and after granulation is stored inside main building Treated – inside main building	Low Risk	The building is an enclosed brick and cladding building with roller shutter door. Treatment is performed at the rear of the building away from door aperture. The granulation system has de-dust units which includes dust bags and dust socks to collect dust from granulation system (see 3.4 below). After every bag of material is processed, the de-dust unit bags are emptied. The dust is emptied into an enclosed bin located in the building and the bags refitted. No material is processed without the bags being fitted. Full clean down is performed weekly, including dust socks and these are replaced monthly with new socks.
Unloading / loading plastic waste	uPVC and PVC		Very Low Risk Vehicle movements do not cause dust as the site has no internal roadways.	Waste IN – the waste in is heavy window frames or profiles which do not cause dust. All granulate stored in enclosed bags before it goes to the next stage of the process. Waste OUT – the pellets are bagged. Skips with dust unit bags is a fully enclosed skip.

2.3 Mobile Plant and Equipment

The following table lists the type, mobile and emission ratings for the mobile plant and equipment used on site:

Description	Make	Model	Emission Rating
360 Grab - Diesel	JCB	20MH	Emission level IV
Fork lift truck – gas	Doosan	G30P-7	N/A gas powered
Alligator shears	McIntyre	320	N/A Electric

3 DUST CONTROL MEASURES

The following section outlines the control measures that are undertaken on site to mitigate dust emissions from the identified sources of generation. Morris Recycling recognise that where possible dust should be minimised or prevented.

3.1 Responsibility for Implementation of the DEMP

The SHE Manager is responsible for the DEMP and making sure it works, this role is supported by the Production Manager. The DEMP is reviewed annually or sooner if dust complaints are received.

Upon induction, staff on site are explained about the importance of notifying management if dust is escaping the site. Staff who operate the shredder, granulator and associated granulation dust system are trained on the SOP (standard operating procedures) for key pieces of equipment and inhouse training is performed on the granulation dust system and changing of dust socks. Housekeeping training is performed via toolbox talks.
Refresher training is provided at least annually.

3.2 Dust Generating Activities

Potential dust emissions for the site may be generated from activities associated with:

- Processing
  - Shredding of uPVC window Frames
  - Granulation

3.3 Dust Control

In order to minimise potential generation of dust from the site, the following preventative or reactive control measures shall be implemented for the separately identified potential dust generating activities. In addition to these, general measures shall also be undertaken.

The management of dust within the site is undertaken by:

Avoidance/Containment

- All material entering and leaving site in fully enclosed or sheeted vehicles
- Material received is whole window frames which are heavy and not able to blow around.
- All shredding activity performed inside a building with a complete roof and 3 sides which go to the floor
- All granulation of plastic is performed inside a building with roller shutter door
- Good housekeeping to keep clean and tidy site. Housekeeping performed in the shredder building after every shift and in the main building every night.

- Full clean down of the granulation dust system is performed weekly, including dust socks and these are replaced monthly with new socks.
- The boundary to the site is fully enclosed with a combination of 16.4ft walling, wooden railway sleepers and the main building.
- Transfer points and processes reduced to the minimum.

Dust Control

- The shredder is an enclosed shredder with a hood over the top.
- Start of conveyor into shredder at ground level meaning low loading height. The conveyor is loaded with a gas powered forklift truck.
- The window frames are loaded single layers on the conveyor, i.e not piled up.
- The granulation system has de-dust units[2] which includes dust bags and dust socks to collect dust from granulation system.
- After every bag of material is processed, the de-dust unit bags are emptied. The dust is emptied into an enclosed bin located in the building and the bags refitted. No material is processed without the bags being fitted.

Other

- Maintain all dust control equipment and record any maintenance activities.
- Daily inspection of yard recorded on the Environmental Site Checklist.
- Waste acceptance procedures only permit window frame and profiles onto site.
- Plant is kept clean to avoid a build up of dust on the machines which may be dropped on yard areas or cause wind-blown dust.

Handling and movement of stockpiles - Dust from the handling of material on site and movement of stockpiles will be reduced or controlled by:

- Regular sweeping of roads and operational yard areas.
- Conveyor belt is within conveyor frame, sides of conveyor is approximately 150mm deep meaning wind can not whip material off it.
- Material is loaded in low even levels, not piled up, as this is needed for the equipment to adequately treat the frames.
- Double handling of material will be avoided where possible.
- The inbound waste window frames and profiles are stored in 3 separate dedicated bays in the external yard area and the outbound whole window frames are stored in 1 dedicated bay in the external yard area.

Vehicles movements in/out of the site

- The small yard and narrow space means vehicle speeds are reduced to 5mph or below, as generally it is only a vehicle reversing into the bay.
- Yard surfaces are concreted

[2] See section 3.4

3.4 Dust Control Unit – Granulation Process

A single stage portable dedust unit is positioned on each granulator.

Illustration of single stage portable dedust unit used on site:	Single-Stage Dust Collector Illustration
	 Single-stage dust collectors illustration

Characteristics of the single-stage dust collectors:

- The airflow capacity of a typical single-stage dust collector is around 500 CFM (Cubic feet of air per minute)
- Their filter bag/canisters are rated between 10-30 microns (i.e the size of fine dust they can screen out)

4 MONITORING AND REPORTING

4.1 Dust Monitoring

The following steps are taken:

- Dust monitoring at the site boundary will be carried out as part of the routine daily site inspections with any observations recorded on the Environmental Site Checklist and retained onsite.
- All plant is inspected daily and cleaned down regularly after use to prevent the build up of dust on machinery parts and hot exhausts.
- Operational staff remain vigilant for visual dust and particulate emissions during the treatment process.

4.2 Response to Dust Events

Where dust is identified as an issue at the site during daily site inspections, an inspection will be carried out by the SHE Manager or Production Manager to determine the cause.

Visual monitoring along the site boundary will be increased to twice daily until the issue is resolved.

Due to the height of the boundary wall around the site and the treatment of shredding and granulation performed inside a building, the likelihood of dust and particle emissions impacting sensitive receptors in close proximity to the site is considered LOW and therefore no other form of dust monitoring is proposed for the site.

Where dust emissions are continually identified as an issue at the site and complaints are received as a result, the SHE Manager or Production Manager will review the mitigation measures and monitoring techniques detailed in this DMP in order to improve detection and prevent emissions discharging from the site.

4.3 Records

The following records are maintained and held for 6 years:

- results of the daily inspections are recorded on the Environmental Site Checklist
- Plant and equipment maintenance is recorded on the Maintenance and Service Record

4.4 Complaints

Any complaint will be record on the Environmental Compliant Record, investigated with a record of any likely causes noted at the time, actioned accordingly and a concluding record made.

The Environment Agency will be informed within 24 hours of detection of any emissions which has caused, is causing or may cause significant pollution. Any complaints received by the Environment Agency relating to dust emissions from the site will be dealt with as soon as is reasonably possibly upon notification.

4.5 Emergencies and contingencies

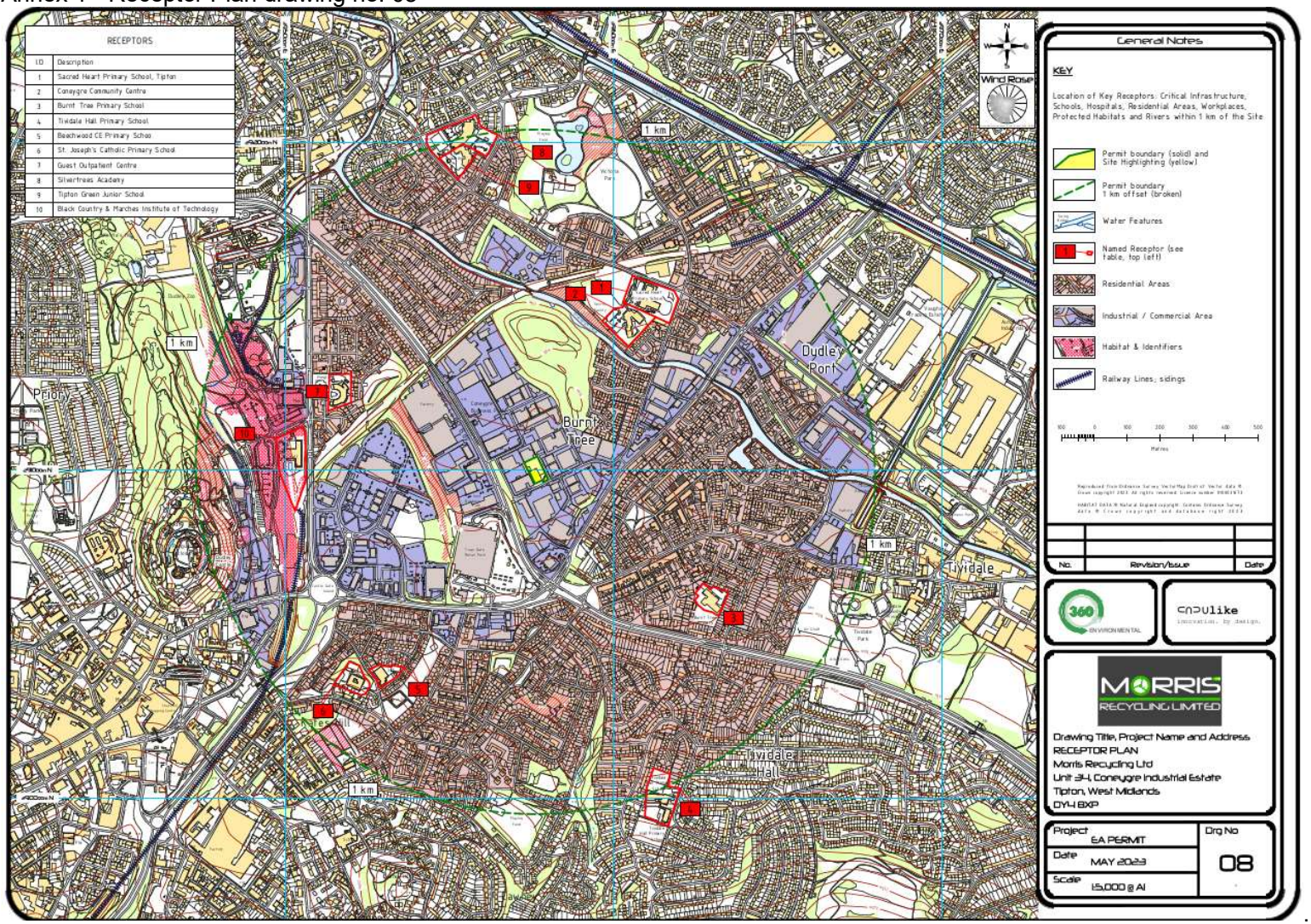
In the event of severe weather conditions i.e.high winds, the site manager will decide whether to cease activities/all operations and the main emphasis on site will be to reduce any dust impacts.

In the event of any unforeseen circumstances i.e. faulty equipment, the site manager will make an assessment of whether to cease activities/all operations with the main emphasis on site will be to reduce any dust impacts.

Should the Met Office issue a weather warning for high wind, it would not be necessary to reduce stockpiles as the externally stored waste is window frames and profiles which are heavy non-dusty waste and the pellet produced is stored in the building.

If operations are completely ceased, the Environment Agency will be informed.

Annex 1 - Receptor Plan drawing no: 08



Annex 2 – Site Storage and Internal Plant Layout Plan drawing no: 04