APPENDIX E

DUST AND EMISSIONS MANAGEMENT PLAN (DEMP)





AN APPLICATION FOR A BESPOKE ENVIRONMENTAL PERMIT FOR THE TREATMENT OF UP TO 100,000 TONNES OF WASTE PER YEAR TO PRODUCE AGGREGATE AT NORTHAMPTON RAILHEAD, SEGRO LOGISTICS PARK, NORTHAMPTON, NORTHAMPTONSHIRE

DUST AND EMISSIONS MANAGEMENT PLAN VERSION 1.0

Report reference: GRS/NOR/PF/5737/01/DEMP December 2023



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APPENDICES

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This report has been prepared by MJCA with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between MJCA and the Client. This report is confidential to the client and MJCA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by MJCA beforehand. Any such party relies upon the report at their own risk.



1. Introduction

- 1.1 MJCA is commissioned by GRS (Roadstone) Limited (GRS) to prepare a dust and particulate matter emission management plan (DEMP) for the incinerator bottom ash aggregate (IBAA) blending facility operated by GRS at Northampton Railhead, Segro Logistics Park, Northampton, Northamptonshire (the site). The purpose of this document is to identify the operations at the site which may have the potential to have an impact on air quality as a result of emissions of particulate matter, to present the management techniques that are used at the site to minimise the potential for particulate matter emissions, to describe the monitoring which is carried out to confirm the effectiveness of the management controls and to present an action plan which is implemented in the unlikely event that there is a significant emission of particulate matter from the site. The DEMP forms part of the environmental management system (EMS) under which the site is operated.
- **1.2** The DEMP has been prepared based on the guidance presented in the relevant sections of the following documents and guidance:
 - Environment Agency Control and monitor emissions for your environmental permit. (the emissions guidance).
 - Environment Agency internal guidance template entitled "Dust and emission management plan" (Version 10 dated October 2018).
 - Environment Agency guidance 'Non-hazardous and inert waste: appropriate measures for permitted facilities²' (the Appropriate Measures guidance).
- 1.3 The activities with the potential to generate and/or release dust and particulate matter are identified in Section 2 of this document. The locations of potential receptors are identified in Table DEMP 1, are shown on Figure DEMP 1 and are discussed in Section 2 together with the potential pathways for linkage of the sources and receptors.

² Available at: https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities. Last updated 8 December 2022. Last accessed 31 July 2023.



¹ Available at https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit. Last updated 24 November 2022. Last accessed 31 July 2023.

- 1.4 In Sections 3 and 4 of this document the management techniques that are used at the site to minimise the potential for dust and particulate matter emissions from the site are set out and the monitoring undertaken to confirm the effectiveness of the management techniques is specified. In Section 5 details are presented of how GRS engage with the local community together with details of the procedure for reporting and responding to complaints. An action plan which is implemented in the unlikely event that there is the potential for a significant emission of dust or particulate matter from the site or if a complaint regarding dust or particulate matter is received is presented in Section 6.
- 1.5 The DEMP comprises a living document and is reviewed on an annual basis as part of the environmental performance audit or as required by the action plan. The review will include consideration of the results of dust and particulate matter monitoring and progress with any improvements that may be identified. A review of the effectiveness of dust and particulate matter monitoring techniques is undertaken and changes made to monitoring techniques if the review identifies any improvements that can be made.

2. Operations at Northampton Railhead (sources, pathways and receptors)

Sources

- approximately 5.5km south of the centre of Northampton and 1km west of Junction 15 of the M1 Motorway. The location and boundary of the site is shown on Figure DEMP 1 and covers an area of approximately 2.2 hectares. The site is located at a railhead in an area which is being developed as a storage and distribution facility. The boundary of the site covers the whole of the GRS Northampton Railhead. The operations the subject of this DEMP are limited only to the waste related operations and not the wider railhead operations. The mainline railway line runs in a generally north—south direction approximately 180m to the west of the site. The closest residential receptors to the site are located beyond and to the west of the railway line, approximately 250m west of the site. It is considered that the site is not located in a sensitive location.
- 2.2 The IBAA activities undertaken at the blending facility comprise the acceptance, under List of Waste Code (LoW) 191212, of up to 100,000 tonnes per annum (tpa) of IBAA that has been processed elsewhere to meet the BS13242 specification. The IBAA is stored on site before being blended with primary aggregates or aggregates produced in accordance with the Aggregates Quality Protocol³. The IBAA is blended to form an aggregate output to meet a required specification which is sent off site for use. The processed IBAA is imported to the site by road and the aggregate product is predominantly exported from the site by road. It is possible that aggregate product may also be exported by rail. Primary aggregates or aggregates produced in accordance with the Aggregates Quality Protocol are predominantly imported to the site by rail although they may also be imported to the site by road.
- 2.3 The layout of the site is shown on Figure DEMP 2. The site, including the IBAA storage and blending area is located in the open air. The surface of the site including the IBAA storage and blending area comprises an impermeable surface with a sealed drainage system. The IBAA storage and blending areas are delineated on three sides by concrete block walls up to 4m high. In summary the IBAA blending operations are

³ WRAP (Waste & Resources Action Programme) Quality Protocol for Aggregates from inert waste, end of waste criteria for the production of aggregates from inert waste published on 22 October 2013 (Aggregates Quality Protocol).



carried out by loading shovels and the placement in bays of alternative layers of IBAA and aggregate. Effective dust suppression is provided.

- The waste type accepted at the site is specified in the permit and is reproduced in Table 2 of this DEMP. Wastes comprising solely or mainly dusts, powders or loose fibres are not accepted at the site. All heavy goods vehicles entering or exiting the site carrying waste or processed materials are instructed to sheet or otherwise contain their loads (for example a fully enclosed container/wagon) to minimise the potential for the release of dust or particulate matter. If vehicles enter the site with their load uncovered a 3-strike policy is employed. The first strike is a verbal warning; the second a written warning explaining that any further breach will result in a ban from entering the site and the third strike is a permanent ban.
- 2.5 Waste acceptance at the site is controlled by the waste acceptance and rejection procedures which are implemented at the site. Pre-acceptance checks of information provided by the producer or holder of the waste are undertaken by the technically competent manager (TCM) or a suitably trained person instructed or managed by the TCM. The pre-acceptance checks are used to identify waste that is suitable for acceptance at the facility. Waste acceptance checks are carried out for all waste loads delivered to the facility to confirm that the load is consistent with the preacceptance information. The acceptance checks undertaken by suitably trained site personnel include inspection of the Duty of Care documentation and a visual inspection of the load to confirm that the load is consistent with the Duty of Care documentation. In the event that unsuitable materials are delivered to the site. including wastes comprising solely or mainly dusts, powders or loose fibres, the load is rejected and arrangements are made to remove the load from the site. Measures are taken, for example damping down of the material, to minimise the potential for release of particulate matter from the load whilst collection is awaited. Key staff hold a relevant qualification under the approved CIWM/WAMITAB competence scheme appropriate to the waste operations conducted at the site.
- 2.6 A schematic flow diagram in which the operations at the site are summarised is presented below. The schematic flow diagram should be read in conjunction with the site layout plan.





- 2.4 As explained above and as shown in the schematic flow diagram, IBAA is unloaded and stored on site before being blended with primary or recycled aggregates to form an aggregate output to meet a required specification which is sent off site for use. Dust suppression is available at each stage of the process either by fixed and/or mobile dust suppression sprays supplemented as necessary by mobile suppression using a water bowser or manual spraying using hosepipes. Each of the steps in the process are described below giving consideration to the potential for the specific activity to generate or release particulate matter.
- 2.5 The activities with the potential to generate and/or release dust and particulate matter comprise the following:
 - Vehicles entering, travelling within, and/or leaving the site with mud or debris
 on their wheels.

- The release of dust, particulate matter and debris from material loads as they are delivered to the site.
- The resuspension of dust and particulate matter on roads and site surfacing by vehicles.
- The release of particulate matter when material loads are deposited or set down at the site.
- The release of particulate matter when an excavator and/or loading shovel dig into the materials prior to blending IBAA.
- The release of particulate matter when material is loaded into the bays in which IBAA is blended.
- The release of particulate matter when blending IBAA.
- The release of particulate matter when moving product material at the site.
- The release of particular matter when material is loaded onto transport vehicles for removal from site.
- The release of particulate matter from stockpiled materials. Wind whipping of materials stockpiled at the site.
- Particulate emissions from the exhausts of vehicles and plant on site.
- 2.6 The management techniques employed at the site to control dust and particulate matter with reference to the specific items identified in the bulleted list above are discussed in Section 3 of this document having regard to the measures presented in the Environment Agency guidance which is summarised in Table DEMP 3. Where specific activities have the potential to generate or release particulate matter, the proposed control measures are described and are summarised in Table DEMP 4 Source Pathway Receptor linkages.

Pathways

2.7 Dust and particulate matter have the potential to be dispersed from the source to potential receptors by the wind. A wind rose for Bedford is presented at Appendix

DEMP A. Based on the wind rose the prevailing wind direction is from the southwest and therefore areas to the north east of the site are generally down prevailing wind direction of the site.

Receptors

- 2.8 The potential receptors in the vicinity of the site are shown on Figure DEMP 1. The receptor type, distance and direction of the receptors closest to the site are listed in Table DEMP 1.
- 2.9 According to the DEFRA UK Air Information Resource website⁴ the site is not located in an Air Quality Management Area (AQMA) for PM₁₀.

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⁴ https://uk-air.defra.gov.uk/

3. Dust and particulate management

3.1 Particulate matter at the site is controlled by a combination of measures relating to waste delivery and receipt at the site, site infrastructure and operational techniques employed at the site. The techniques selected for use at the site are based on wellestablished techniques to control the emissions of particulate matter which have been demonstrated to be effective at other GRS sites. Collectively the techniques amount to good housekeeping. Reference has been made where relevant to the Environment Agency Technical Guidance Document (Monitoring) M175 entitled 'Monitoring of particulate matter in ambient air around waste facilities' (M17) and appropriate measures for control of dust and mud presented in Environment Agency guidance "Control and monitor emissions for your environmental permit". A variety of techniques are used at the site based on site specific circumstances.

Responsibility for implementation of this plan

3.2 The Technically Competent Site Manager (TCM) is responsible for the management of particulate matter and site staff are trained appropriately. The TCM appoints a suitably trained deputy to oversee the management of particulate matter at the site during operational periods when the TCM is not present at the site. The TCM provides the training for the deputy. The training includes refresher training where appropriate however during the course of routine operation of the site the experience of the site staff, including the deputy, comprises on the job training which complements the refresher training.

Sources and control for fugitive dust and other emissions

3.3 For all anticipated road-based deliveries of waste to the site, transporters are instructed to cover the loads with a sheet or otherwise contain their loads during transport to the site to minimise the risk of particulate emissions. Incoming roadbased loads remain sheeted or contained until such time as they are inspected and/or discharged. Following completion of the visual waste acceptance checks, drivers

https://www.gov.uk/government/publications/m17-monitoring-of-particulate-matter-in-ambient-air-around-waste-facilities Published 7 April 2014



delivering waste to the site are instructed to place waste in the appropriate area of the site.

- 3.4 Waste received at the site is subject to pre-acceptance checks and acceptance screening comprising, where appropriate, visual inspection to confirm that the load is consistent with the waste type permitted for acceptance at the site. In the event that unsuitable materials are delivered to the site, including wastes comprising solely or mainly dusts, powders or loose fibres, the load is rejected. Drop heights are minimised during the loading, unloading, processing and transferring of waste.
- In order to minimise the deposition of mud that may subsequently dry and generate particulate matter if disturbed, such as when tracked over by vehicles, hand held high pressure wheel cleaning equipment is available at the site for use as necessary before leaving the site. Vehicles are instructed to use the wheel cleaning equipment if necessary prior to returning to the local road network. The wheel cleaning equipment is maintained in full working order. The site access road is maintained and swept with a road sweeper consistent with minimising the generation of dust and particulate matter.
- 3.6 The movement of site traffic is restricted to defined traffic routes which are maintained. A vehicle speed limit of 9.5mph is imposed on the site for safety reasons and to reduce the potential for significant particulate matter to be resuspended. Insofar as it is practicable all site vehicle exhausts are upward pointing to prevent the disturbance of particulate matter from the road and site surfaces. A no idling policy is implemented at the site for vehicles and plant.
- 3.7 During dry weather conditions fixed and/or mobile water sprays supplemented if necessary by mobile bowsers or manual spraying using hosepipes are used to spray water onto the site including traffic routes and the adjacent access route together with operational and stockpiles areas to minimise the potential for particulate matter to be generated and become airborne. The use of water sprays and if necessary mobile bowsers and manual spraying is a proven effective dust management technique at numerous other aggregate treatment facilities. Operations which may have the potential to generate particulate matter may cease if weather conditions and ground conditions preclude effective dust control. This decision is made at the discretion of the TCM and/or site manager based on the site conditions (dry, damp, wet) giving consideration to the weather conditions (windy, calm, etc) and the type, quantity and

particle size of the waste on site. Additional dampening of waste materials and/or stockpiles may be employed during high winds particularly when the prevailing wind direction is towards potentially sensitive receptors in the vicinity of the site.

- 3.8 In the event that particulate matter control measures fail to the extent that effective dust management cannot be provided then waste related operations at the site are suspended until such time as the control measures can be reinstated.
- 3.9 All relevant site personnel including contractors are trained in working practices and mitigation measures to minimise the generation and release of particulate matter.
- 3.10 The management techniques employed at the site to control dust and particulate matter having regard to the measures presented in the Environment Agency guidance are summarised in Table DEMP 3. Where specific activities have the potential to generate or release particulate matter, the proposed control measures are described and are summarised in Table DEMP 4 Source Pathway Receptor linkages.
- 3.11 Visual monitoring for emissions of particulate matter is undertaken by site personnel.
 Further details are provided in Section 4 of this document.

Water availability/usage

- 3.12 Mains water is used in the dust suppression equipment including the water sprays supplemented if necessary by mobile bowsers or manual spraying using hosepipes. As shown on Figure DEMP 2 a 20,000 litre water tank is available on site as part of the dust suppression system.
- 3.13 The information presented above demonstrates that the site has sufficient water supply to allow use of the dust suppression system whenever the site is operational and in a worst-case scenario. In the unlikely event that insufficient water supply is available to provide effective dust suppression, and dust suppression is required, waste handling activities temporarily cease until such a time that adequate water supply can be restored.



Action plan

- 3.14 The operational controls which are implemented to minimise the release of particulate matter and the generation of dust at the site provide effective control of dust emissions at the site.
- 3.15 A Particulate Matter Management and Monitoring Action Plan is presented in Section6 of this document. The Particulate Matter Management and Monitoring Action Plan is implemented in the event that:
 - i. there is an unacceptable visual emission of particulate matter from the site, or
 - ii. a complaint is received.



4. Particulate matter monitoring

4.1 In TGN M17 it is stated that despite the subjective nature of the visual assessment of dust emissions:

'this simple, cheap and easy to implement assessment approach has the significant advantage of providing instantaneous information on problems (e.g. it may be possible to directly observe the source of the dust emission, such as a particular stockpile) allowing rapid actions to be taken to deal with the problem. Visual assessments therefore complement well other, more-quantitative dust monitoring that may take several weeks to produce results.'

- 4.2 During all site operations continuous visual monitoring for emissions of particulate matter is undertaken by suitably trained site personnel. In addition to the continuous visual monitoring a specific routine monitoring schedule is undertaken comprising visual monitoring at 6 specific on-site locations at least once per day while the site is active. The on-site monitoring locations are shown on Figure DEMP 3. The results of the on-site monitoring of visible dust are recorded on the checklist presented at Appendix B of this DEMP.
- Visual monitoring by suitably trained site personnel is the most effective method of detecting as quickly as possible emissions of particulate matter throughout the working day thereby facilitating promptly the assessment of such emissions allowing the selection and implementation as quickly as practicable of control measures as necessary. The effectiveness of the measures taken in controlling emissions are assessed during inspections undertaken at the site following implementation of the control measures. Any problem that is observed is reported to the site manager who is responsible for investigating the cause and implementing any necessary remedial action. The results of inspections and remedial measures taken are recorded in the site diary.
- 4.4 As part of the daily housekeeping practices, an initial and final site inspection are completed at the start and end of each working day to check that the site is in a condition that has a low potential to release dust including dust as a result of operations outside of normal operational hours. Publicly available weather forecasts are consulted by site staff to identify forecasts of extreme weather events or storms



which may have the potential to increase the risk of the release of particulate matter from the site outside operational hours and additional control measures such as dampening of site surfacing and stockpiles prior to the end of the working day are implemented as necessary. The findings of the visual assessments are recorded in the Site Inspection Checklist presented at Appendix C. Any problem that is observed is reported to the site manager who is responsible for investigating the cause and implementing any remedial action as necessary. Incidents and remedial measures taken are recorded in the site diary.

- 4.5 The site manager uses the Meteorological Office⁶ weather forecast or other forecast to predict weather conditions such as prolonged dry spells which may give rise to particulate matter emissions and implements the appropriate precautionary and or management measures. Qualitative assessments of the on-site conditions are undertaken as necessary and measures are taken to control aerial emissions of particulate matter within the site boundary.
- 4.6 The records of the visual particulate matter monitoring are reviewed periodically to facilitate the review and assessment of operational activities as necessary. The review is carried out in conjunction with a review of meteorological data that are available and the site operations that took place during the monitoring period together with any complaints regarding particulate matter emissions that have been received.
- 4.7 In the event that based on the visual site observations there is an unacceptable particulate matter emission from the site the Particulate Matter Management and Monitoring Action Plan is implemented. The Particulate Matter Management and Monitoring Action Plan is presented in Section 6.



⁶ https://www.metoffice.gov.uk/

5. Engagement with the Community

5.1 GRS is conscious of the potential impact on the environment of its activities and strives to manage and minimise those impacts. GRS recognises the importance of community engagement and has been striving to build a positive working relationship with local residents and businesses. Contact details for the site are displayed on the signage at the site entrance.

Reporting of complaints and management responsibilities

- Any complaints about the site operations and/or their impact on the environment made by third parties (including any complaints identified by the Environment Agency, Health and Safety Executive or Local Authority) are brought to the attention of the TCM in the first instance who identifies and implements the measures needed to resolve the matter as set out in Section 6 of this DEMP. They then make a note of the complaint and the actions taken to resolve it. A register of complaints is maintained onsite in the site diary. Complaints are escalated to senior management at the discretion of the TCM, based on the number and nature of the complaints. Should complaints be escalated the details are recorded in the site diary.
- 5.3 The particulate matter management and monitoring action plan which is implemented in the event that a complaint is received is presented in Section 6 of this DEMP.



6. Particulate matter and dust management and monitoring action plan

Context

6.1 The overriding management principle of the site with respect to dust control is to operate the site in a manner which prevents or minimises the release of dust as set out in the DEMP. If it is considered that the waste stored on the site, the waste being loaded or unloaded at the site or the site surfacing itself is in a condition that has the potential to release a significant quantity of dust such that there is a potential for off site dust emissions, additional dust suppression measures are employed in a manner proportionate to the risk. These actions are undertaken as part of the routine operation of the site. The action plan in this section of the report sets out the additional actions that are taken in the event that conditions are identified whereby the routine measures need to be supplemented or improved.

Introduction

- **6.2** The action plan is implemented in the event that:
 - i) there is an unacceptable visual emission of dust from the site or
 - ii) a complaint is received.
- An unacceptable visual emission of dust from the site comprises a visual observation of dust or particulate matter crossing the site boundary from GRS's operations. The initial visual observation is made by the site operative who has identified the emission and is verified by the TCM. At the first instance of an unacceptable emission of dust or particulate matter from the site, verified by the TCM, the site ceases dust generating activities immediately and the action plan provided below is implemented. If after following the action plan unacceptable emissions continue the site ceases operating until site these emissions can be brought under control.
- 6.4 The timescale for implementation of the action plan varies depending on the circumstances under which it is implemented. If an unacceptable visual emission is observed by site operative there is no delay in implementing the action plan, whereas a complaint may be received by the operator a number of hours or even days after the activity that may have contributed to the complaint has ceased. In the latter case investigation of the complaint is based on a review of the data and observations

recorded at the site corresponding to the time at which the complainant observed the event.

Action plan

6.5 In the event that an unacceptable visual emission of particulate matter from the site is observed by site personnel the event is investigated immediately by the TCM to determine the source as follows:

If it is established that the emissions are attributable to activities being undertaken at the GRS site action is taken to control the emissions including where relevant:

- If emissions are attributable to stockpiled material, the employment of further dust suppression immediately by either repositioning a water spray or if necessary, using a water bowser or manual spraying using a hosepipe to dampen the stockpiles. Dust suppression to provide full coverage of the stockpiles.
- If emissions are attributable to unloading or loading of waste, mobile dust suppression is applied to control the particulate matter emission from the activity being undertaken. The temporary cessation of unloading and loading of waste until the dust suppression is sufficient to ensure that particulate matter emissions are effectively controlled and emissions do not cross the site boundary. Dust suppression provide to full coverage of loading and unloading areas on site.
- If the emissions are attributable to blending operations, the employment of additional suppression immediately such as by repositioning a water spray or if necessary, using a water bowser or manual spraying using a hosepipe to dampen the operational area. Temporary cessation of the processing operations until the dust suppression is sufficient to ensure that particulate matter emissions are effectively controlled and emissions do not cross the site boundary. Dust suppression provide to full coverage of processing areas on site.
- Organising additional mechanical or manual sweeping or cleaning of the concrete surface to ensure surface debris does not give rise to unacceptable emissions of dust or particulate matter.
- Carrying out checks to confirm that vehicles are adequately covering loads and obeying the site speed limits.



- Identify whether there are any other activities being undertaken at locations other
 than the GRS site including the locations with the potential to release particulate
 matter identified in Table DEMP 1 and estimate the extent to which other activities
 may contribute to the visual emissions observed on the site including
 circumstances where windblown dust may be transported across and/or over the
 site from the external sources.
- In the unlikely event that the routine control measures employed at the site are not sufficient to control particulate matter emissions then consideration is given to further measures to minimise and control emissions including relocation of storage areas, temporary reduction in stockpile heights, installation of additional storage bays, installation of additional fixed and/or mobile dust suppression, procurement of additional mobile dust suppression equipment or incorporation of a chemical suppressant into the water sprays employed at the site.
- 6.6 In the event of a complaint associated with particulate matter emitted from the site an investigation is undertaken immediately to determine the source as follows:
 - Identify from the site diary what activities were being undertaken at the time at
 which the complaint event occurred and in which location at the site and review
 the waste types that were accepted and handled at the site on that day.
 - Identify from meteorological data available whether the emissions are potentially a result of the operations at the site.
 - Identify from the site diary whether there were any unusual regional weather events occurring during the day on which the complaint was made such as Saharan dust storms.
 - Giving consideration to the wind direction on the day of the complaint, identify from
 the site diary whether there were any other activities being undertaken at locations
 other than the GRS site for example the neighbouring sites with the potential to
 release particulate matter identified in Table DEMP 1.
 - If it is established that the emissions were attributable to activities being undertaken at the site, review the relevant operational procedures and implement improvements and provide additional training to site personnel and third party



contractors to improve the controls and minimise future emissions. Consideration is given to further measures to minimise and control emissions including relocation of storage areas, temporary reduction in stockpile heights, installation of additional storage bays, installation of additional fixed and/or dust suppression, procurement of additional mobile dust suppression equipment or incorporation of a chemical suppressant into the water sprays employed at the site.

6.7 Appropriate action is taken which includes the cessation of the activity if necessary. In the case of a complaint, the action taken is communicated to the complainant and the Environment Agency. Feedback is provided to the complainant in the form of a letter/email within 28 working days of acknowledging receipt of the complaint. As necessary the relevant operational procedures are reviewed and improvements implemented.

TABLES

Table DEMP 1

Summary of the receptors in the vicinity of the site (including other sources of dust emissions)

Ref	Name or description	Type of receptor	Approximate distance from site (m)	Direction from site
1	Lodge Farm	Farm	>100m <250m	W
2	Rathvilly Farm	Farm / Residential	>250m <500m	NW
3	Manor Farm	Farm / Residential	>500m <1000m	W
4	Maple Farm	Farm / Residential	>500m <1000m	N
5	Maple House	Residential	>500m <1000m	N
6	Manor Farm Bungalow	Residential	>500m <1000m	N
7	Milton Malsor Domestic Dwellings	Residential	>500m <1000m	NW
8	Collingtree Domestic Dwellings	Residential	>500m <1000m	NE
9	TL Marquee Hire	Commercial	>250m <500m	W
10	Teknoroof Ltd / Liquid Bars	Commercial	>250m <500m	NW
11	VerticA Consulting Limited	Commercial	>500m <1000m	N
12	Flowercraft Nursery	Commercial / Garden	>500m <1000m	W
13	Milton Football Club	Recreational	>500m <1000m	NNW
14	Milton Malsor Village Park	Recreational	>500m <1000m	NNW
15	Collingtree Fields	Recreational	>500m <1000m	N
16	The Parish Church of Holy Cross	Religious	>500m <1000m	NNW
17	M1 Motorway	Transport	>500m <1000m	N, NE E
18	A508 Main Road	Transport	>500m <1000m	SE
19	Mainline Railway	Transport	>100m <250m	NW, W, SW, S
20	Collingtree Road/Ash Lane	Transport	>500m <1000m	NW, N, NE
21	Barn Lane/Rectory Lane	Transport	>500m <1000m	W, NW
22	Segro Logistics Park	Construction/Commercial	0m	All directions
23	Protected species, non fish	Woodland	>100m <250m	SE

Note: The shaded boxes comprise activities such as roads and commercial operations in the vicinity of the site which have the potential to contribute particulate matter emissions to local air quality. Receptors within 1km of the site are displayed in Table 1 above. The receptors are measured from their closest point to the site.



Table DEMP 2 The waste type authorised to be accepted at the site

EWC	Description
Code	
19 12 12	Treated bottom ash including IBA/IBAA and slag other than that containing
	dangerous substances only

Table DEMP 3

Measures that are used on site to control emissions of particulate matter

This table considers in turn each of the measures considered in Table 3.2 of Environment Agency internal guidance template entitled "Dust and emission management plan" (Version 10 dated October 2018). Text from the EA guidance document is shown in red.

Abatement Measure	Description / Effect	Overall consideration and implementation
Preventative	Measures	
Enclosure within a building	Creating a solid barrier between the source of dust and particulates and receptors is likely to be the most effective method of control, provided that the building entrances and exits are well managed.	Taking into consideration the waste types accepted at the site it is unnecessary to carry out operations inside a building.
Negative pressure extraction	Within enclosed buildings, controlled extraction can be undertaken to ensure a constant negative pressure relative to the outside air. This system should prevent the emission of particulates from any openings in the building. Extracted air should be treated through a suitable filtration system prior to discharge to atmosphere. This method is more frequently applied for odour control.	As this technique is relevant only to operations undertaken within a building it is not relevant to the operations at the site.
Dust Extraction Systems	A large variety of abatement technologies exist for the removal of dust and particulates from a flowing gas and have typically been applied to combustion plants and other sites	As this technique is relevant only to operations undertaken within a building it is not relevant to the operations at the site.

Abatement Measure	Description / Effect	Overall consideration and implementation
	where controlled emissions of particulates occur. These include Electrostatic Precipitators (ESPs), wet scrubbers, baghouses (bag filters), viscous media (e.g. oil) filters and gravitational settling. Although not all of these may be appropriate for dust and particulate suppression at waste management sites, and they cannot be applied to controlling external fugitive emissions, they may be effective when coupled with local exhaust extraction, ventilation or negative pressure extraction systems from enclosed buildings to remove dust and particulates from the airstream.	
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors may reduce receptor exposure, provided that emissions from the source are not dispersed over significant distances.	The IBAA blending operations are carried out on newly formed areas of impermeable surfacing in the north of the site with each area being surrounded on three sides by concrete block walls up to 4m high. The concrete walls act to minimise dust and particulate matter from the IBAA blending operations. As shown on Figure DEMP 1 the site is located at a railhead in an area which is being developed as a storage and distribution facility. The mainline railway line runs in a generally north – south direction approximately 180m to the west of the site. The closest residential receptors to the site are located beyond and to the west of the railway line, approximately 250m west of the site and not down prevailing wind. It is considered that the site is not located in a sensitive location.
Site speed limit, 'no idling' policy	Reducing vehicle movements and idling should reduce emissions from vehicles. Procurement policy to only	A 9.5mph speed limit is imposed at the site. Insofar as it is practicable all site vehicle exhausts arebe upward pointing to prevent the disturbance of particulate matter from the road surfaces. A no idling policy is implemented at the site.



Abatement Measure	Description / Effect	Overall consideration and implementation
and minimisation of vehicle movements on site	purchase clean burn road vehicles and non-road going mobile machinery. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	
Minimising drop heights for waste. Use of enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Enclosing processes will further reduce dispersion.	Drop heights when loading, unloading and transferring materials are minimised and limited to a maximum of 1 metre across the entire site at all times. Site operational staff are aware of this requirement and training is provided on best practice for handling materials to minimise drop heights. Fixed and/or mobile water sprays and if necessary bowsers and manual spraying with hosepipes are employed to provide dust suppression to minimise the release of particulate matter from the unloading, storage, treatment and loading of waste at the site.
Good house- keeping	Having a consistent, regular housekeeping regime that is supported by management, will ensure site is regularly checked and issues remedied to prevent and remove dust and particulate build up.	Good housekeeping is mandatory at the site and the TCM continuously encourages training of staff. The site surface is assessed daily to ensure there isn't an unacceptable build up of debris on site that is likely to give rise to an unacceptable emission of dust or particulate matter. Vehicles have their wheels cleaned prior to leaving the site using the hand held wheel cleaning facilities.
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	All heavy goods vehicles entering or exiting the site carrying waste or processed materials are instructed to sheet or otherwise contain their loads (for example a fully enclosed container/wagon) to minimise the potential for the release of dust or particulate matter. If vehicles enter the site with their load uncovered a 3-strike policy is employed. The first strike is a verbal warning; the second a written warning explaining any further breach will result in a ban from entering the site and the third strike is a permanent ban.

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Abatement Measure	Description / Effect	Overall consideration and implementation
Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles although likely to be less effective than a more powerful wheel wash.	In order to minimise the deposition of mud that may subsequently dry and generate particulate matter if disturbed, such as when tracked over by vehicles, hand held high pressure wheel cleaning equipment is available at the site for use as necessary before leaving the site. Vehicles are instructed to use the wheel cleaning equipment if necessary prior to returning to the local road network. The wheel cleaning equipment is maintained in full working order.
Ceasing operation during high winds and/or prevailing wind direction	Mobilisation of dust and particulates is likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	GRS cease waste handling operations if weather conditions and ground conditions preclude effective dust control. This decision is made at the discretion of the TCM based on the site conditions (dry, damp, wet) giving consideration to the weather conditions (windy, calm, etc) and the type, quantity and particle size of the waste on site.
Installed wheel wash	Provides a high pressure wash of vehicle wheels and lower parts (including under body) using a series of jet sprays. More effective if vehicles drive through the wheel wash slowly in order that there is sufficient time for dirt to be removed.	In order to minimise the deposition of mud that may subsequently dry and generate particulate matter if disturbed, such as when tracked over by vehicles, hand held high pressure wheel cleaning equipment is available at the site for use as necessary before leaving the site. Vehicles are instructed to use the wheel cleaning equipment if necessary prior to returning to the local road network. The wheel cleaning equipment is maintained in full working order.
Easy to clean concrete impermeable surfaces	Creating an easy to clean impermeable surface, using materials such as concrete as opposed to unmade (rocky or muddy) ground within the site and on site haul roads. This should reduce the amount of dust and particulate generated at ground level by vehicles and site activities.	The IBAA blending operations are carried out on newly formed areas of impermeable concrete surfacing. The concrete surface is maintained in a condition which is consistent with minimising the generation of dust and particulate matter generated at ground level by vehicles and site activities.



Abatement Measure	Description / Effect	Overall consideration and implementation
Minimisation of waste storage heights and volumes on site	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	The principle of the operation of the site is to minimise the timescale during which waste is stored at the site, hence the quantity of waste stored, by maintaining a regular schedule of HGV deliveries from the site.
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, shredding, chipping or screening of high risk loads during windy weather as well as associated traffic movements should result in reduced emissions and resuspension of dust and particulates from a site.	GRS cease waste handling operations if weather conditions and ground conditions preclude effective dust control. This decision is made at the discretion of the TCM based on the site conditions (dry, damp, wet) giving consideration to the weather conditions (windy, calm, etc) and the type, quantity and particle size of the waste on site.
Remedial Me	easures	
Netting / micro netting around equipment	Erecting netting around equipment that could give rise to large amounts of dust and particulates may be effective within the site boundary and prevent their dispersion off-site / their re-suspension within the site.	The IBAA blending operations are carried out on newly formed areas of impermeable concrete surfacing. The concrete surface is maintained in a condition which is consistent with minimising the generation of dust and particulate matter generated at ground level by vehicles and site activities and other mitigation including the use of fixed and/or mobile water sprays supplemented if necessary by mobile bowsers and manual spraying using hosepipes are used to further minimise the generation of dust and particulate matter. The IBAA blending operations are carried out on the newly formed areas of impermeable surfacing with each area being surrounded on three sides by concrete block walls up to 4m high. The concrete walls act to minimise dust and particulate matter from the IBAA blending operations.
On-site sweeping	Sweeping could be effective in managing larger debris, dust and	The IBAA blending operations are carried out on newly formed areas of impermeable concrete surfacing. The concrete surface is maintained in a condition which is consistent



Abatement Measure	Description / Effect	Overall consideration and implementation
	particulates but may also cause the mobilisation of smaller particles.	with minimising the generation of dust and particulate matter generated at ground level by vehicles and site activities.
	Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside.	
	This may generate dust and particulate movement that may become a Health and Safety issue if the filters and spray bars on the sweepers are not maintained.	
Site perimeter netting / micro netting	Erecting netting around the site perimeter may capture released debris and dust and particulates prior to it being dispersed off-site.	The IBAA blending operations are carried out on newly formed areas of impermeable concrete surfacing. The concrete surface is maintained in a condition which is consistent with minimising the generation of dust and particulate matter generated at ground level by vehicles and site activities and other mitigation including the use of fixed and/or mobile water sprays supplemented if necessary by mobile bowsers and manual spraying using hosepipes are used to further minimise the generation of dust and particulate matter. The IBAA blending operations are carried out on the newly formed areas of impermeable surfacing with each area being surrounded on three sides by concrete block walls up to 4m high. The concrete walls act to minimise dust and particulate matter from the IBAA blending operations.
Water suppression with hoses & water jets	Damping down of site areas using hoses can reduce dust and particulate re-suspension and may assist in the cleaning of the site if combined with sweeping.	Fixed and/or mobile water sprays supplemented if necessary by mobile bowsers and manual spraying using hosepipes are used to minimise the generation of dust and particulate matter.

Abatement Measure	Description / Effect	Overall consideration and implementation
Water suppression with mist sprays	Installation of mist sprays around sites, at building entrances/exits and within buildings at point source emissions like conveyors, trommels etc. It can also assist in the damping down of dust and particulates, therefore, reducing emissions from site.	There are no waste storage buildings at the site. It is unnecessary to install any mist suppression in addition to the water suppression described above.
Water suppression with bowser	Using bowsers is a quick method of damping down large areas of the site with large water jets. This method could also be used on easy-to-clean, impermeable concrete surfaces.	Dust suppression is provided at the site by water suppression which is employed to minimise the release of dust from site surfaces and stockpiled materials and operational areas.
Dust and particulate monitor with trigger alarm	Installation of a dust and particulate monitor with specified alarm trigger level can alert site staff when short-term particulate concentrations are elevated in order that site practices can be reviewed or application of mitigation measures increased.	Visual dust monitoring is carried out at the site. Visual dust monitoring undertaken by suitably trained staff, is an effective method of rapidly detecting emissions and facilitates the selection rapidly of an appropriate method of particulate matter control based on observations at the time of the emission.
Shaker grids	Similar to cattle grids, these are installed at a site entrance and exit. The movement of vehicles over the grids shakes dust and particulates from the wheels, thus removing them before vehicles enter the site.	As the entire site comprises a well maintained impermeable concrete surface where the IBAA blending operations are carried out and as hand held high pressure wheel cleaning equipment is available at the site for use as necessary a shaker grid is unnecessary.
Water Cannons	Water cannons provide a means for delivery of powerful water streams from a water truck. With variable nozzles,	Dust suppression is provided at the site by water suppression equipment. As it is considered that the dust suppression system employed at the site provides sufficient suppression capacity it is considered unnecessary to install water cannons at the site.



Abatement Measure	Description / Effect	Overall consideration and implementation
	the spray pattern can be controlled and varied between jet and fog. Typical water flows are up to 5000 litres per minute. Water cannons are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate abatement.	
Screening of buildings / reducing large apertures using plastic strips	Installing plastic strips to cover entrances/exits to buildings may reduce emissions of dust and particulates dispersing through doorways.	As this technique is relevant only to operations undertaken within a building it is not relevant to the operations undertaken at the site.
Application of CMA / chemical suppressant	Diluted Calcium Magnesium Acetate (CMA) or other chemical based dust suppressant is regularly applied by spraying using a back-pack applicator for small areas or by road sweeper to cover larger areas. CMA acts as a suppressant with the aim of reducing dust and particulate re-suspension and hence ambient concentrations.	Dust suppression is provided at the site by water suppression equipment. As it is considered that the dust suppression system employed at the site provides sufficient suppression capacity it is considered unnecessary to use CMA/chemical suppressants at the site.
Heavy Water	Heavy water is used to improve the compaction and stability and reduce dust and particulates on unsealed roads or areas of land. Ideally it is	Dust suppression is provided at the site by water suppression equipment. As it is considered that the dust suppression system employed at the site provides sufficient suppression capacity it is considered unnecessary to use heavy water at the site.



Abatement Measure	Description / Effect	Overall consideration and implementation
	blended into the road construction material as the road is constructed, but where this is not possible it can be sprayed onto the top of the road. Heavy water combines fast acting wetting agents with polymer binders, to allow penetration deep into the material and to 'agglomerate' the dust and particles together.	
Foam Suppression	The aggregate and mining industries frequently use foam suppression for the control of dust and particulate emissions, mixing the foam with broken material to increase efficiency. Foaming agents can be added to increase the efficiency of dust and particulate reduction. Foam suppression has seen increased attention in recent years and has previously been applied to waste transfer facilities where crushing of waste occurs.	Dust suppression is provided at the site by water suppression equipment. As it is considered that the dust suppression system employed at the site provides sufficient suppression capacity it is considered unnecessary to use foam suppression at the site.



Table DEMP 4

Source - pathway - receptor linkages

For each of the sources and pathways included in the table the receptor is considered to be the receptors identified in Table DEMP 1, particularly those located down prevailing wind of the site. The sources in the table comprise those identified in Section 2 of the DEMP. Further details of the techniques employed are presented in Section 3 of the DEMP and in Table DEMP 3.

Source	Pathway	Techniques employed to minimise the emissions of dust
Vehicles entering and/or leaving the site	Tracking out of the site of	In order to minimise the deposition of mud that may subsequently dry
with mud on their wheels	particulate matter and mud	and generate particulate matter if disturbed, such as when tracked
	on vehicle wheels which	over by vehicles, hand held high pressure wheel cleaning equipment
	may drop off and deposit	is available at the site for use as necessary before leaving the site.
	on the public highway	Vehicles are instructed to use the wheel cleaning equipment if
	which may subsequently	necessary prior to returning to the local road network. The wheel
	dry and generate	cleaning equipment is maintained in full working order.
	particulate matter if	
	disturbed such as when	The site surface is maintained in a condition consistent with
	tracked over by vehicles.	minimising the generation of dust and particulate matter.
The resuspension of particulate matter on	Atmospheric dispersion	The site surface is maintained in a condition consistent with
roads and site surfacing by vehicles		minimising the generation of dust and particulate matter. Dust
		suppression sprays together if necessary with bowsers and manual
		spraying with hosepipes are used to dampen down as necessary the
		site surface to reduce the potential for particulate matter to be
The valence of monticulate months and	Follog off delivery or	resuspended by vehicles travelling round the site.
The release of particulate matter and	, ,	All road going vehicles using the site are instructed to sheet or
debris from waste loads as they are	collection vehicles.	otherwise contain their loads prior to arrival at the site to minimise the risk of particulate emissions. Loads are sheeted or contained until
delivered to the site/exported from the		· ·
site.		such time as they are inspected and/or deposited. Outgoing loads are sheeted.
The release of particulate matter when	Atmosphoric dispossion	
The release of particulate matter when waste loads are deposited or set down in	Atmospheric dispersion	Drop heights are kept to a minimum and loads that arrive sheeted are
waste loads are deposited of set down in		kept sheeted immediately prior tipping to minimise the potential for

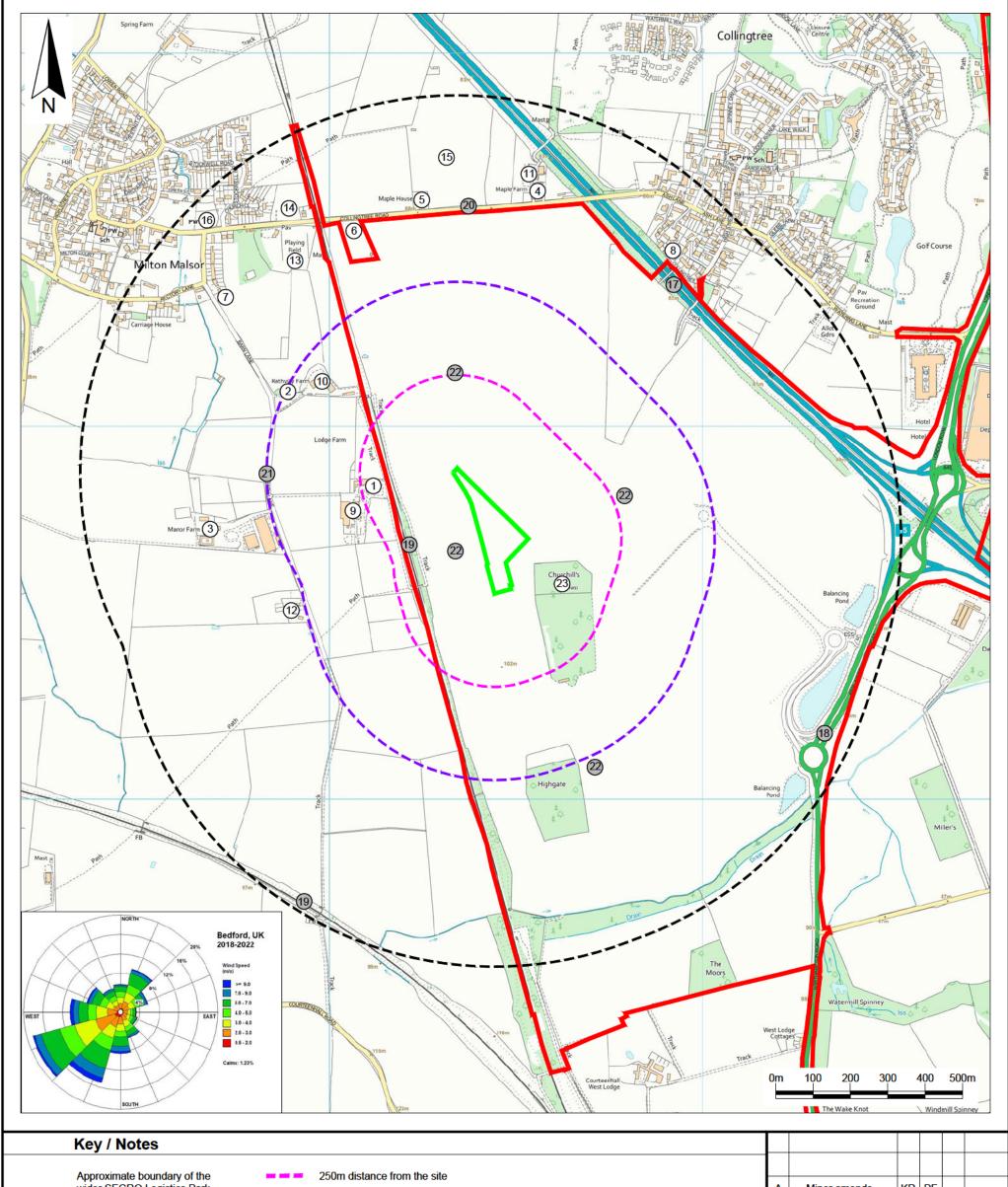
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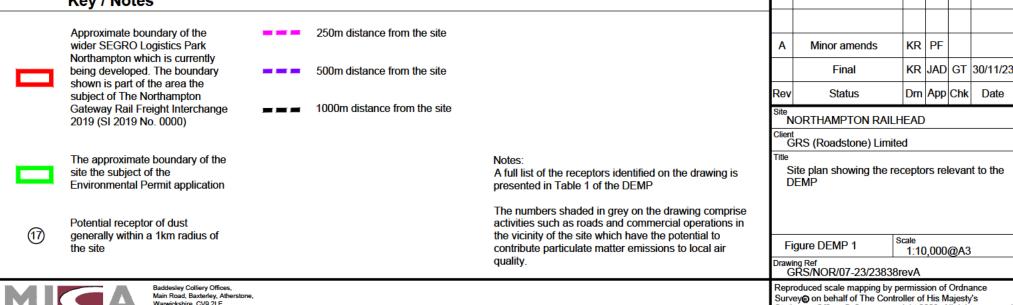
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Source	Pathway	Techniques employed to minimise the emissions of dust
stockpiles on the site or excavated from stockpiles and loaded		release of dust. Dust suppression is provided at the site by fixed and/or mobile water sprays supplemented as necessary by water bowser or hosepipes which are employed to minimise the release of dust from stockpiled waste at the site.
The release of particulate matter when blending IBAA.	Atmospheric dispersion	The blending process is undertaken with dust suppression available and taking into consideration the prevailing weather conditions. The IBAA blending operations are carried out on newly formed areas of impermeable surfacing with each area being surrounded on three sides by concrete block walls up to 4m high. The concrete walls act to minimise dust and particulate matter from the IBAA blending operations. The dust suppression is provided by water suppression which is employed to minimise the release of dust during blending. Drop heights are minimised during the material handling operations.
The release of particulate matter from stockpiled materials. Wind scouring / wind whipping of material stockpiles.	Atmospheric dispersion	Stockpiles have the potential to dry out and release particulate matter by wind scouring. Waste stockpiles are dampened using the water suppression. The IBAA blending operations are carried out on newly formed areas of impermeable surfacing with each area being surrounded on three sides by concrete block walls up to 4m high. The concrete walls act to minimise dust and particulate matter from the IBAA blending operations.
Particulate emissions from the exhaust of vehicles and plant on site.	Atmospheric dispersion	Vehicles and plant on site are maintained to optimise performance and minimise vehicle emissions. A no idling policy is implemented at the site for vehicles and plant.

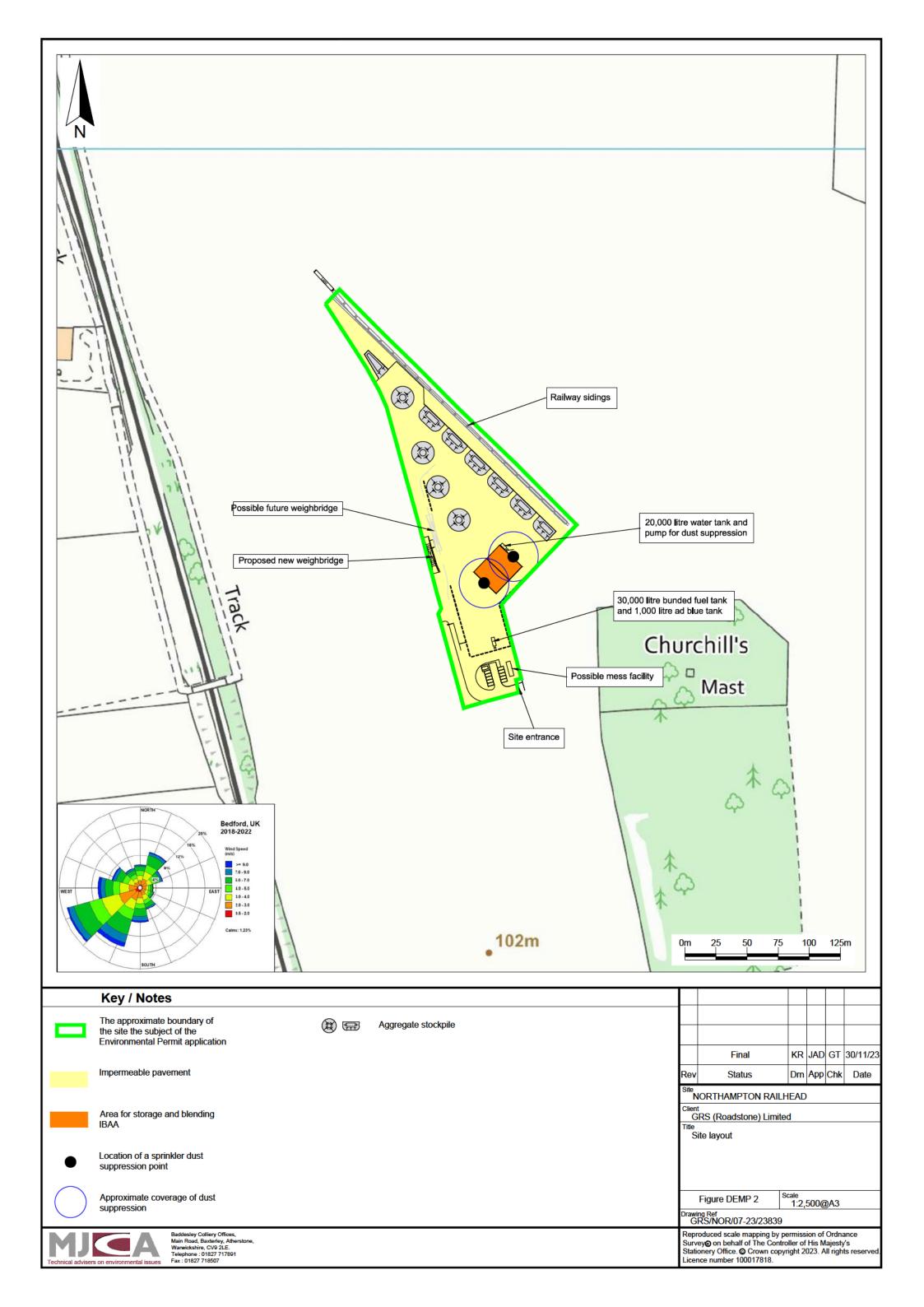


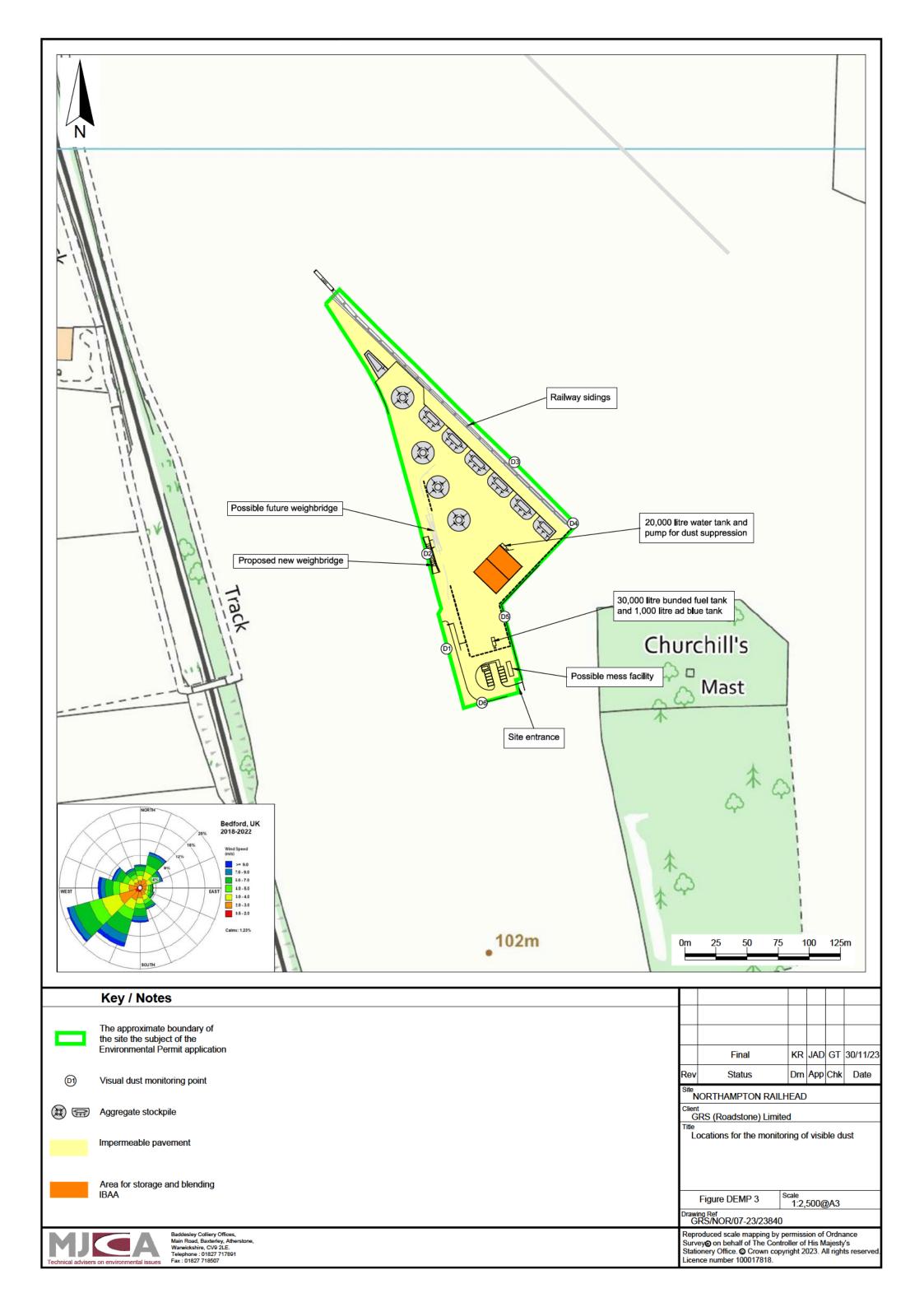
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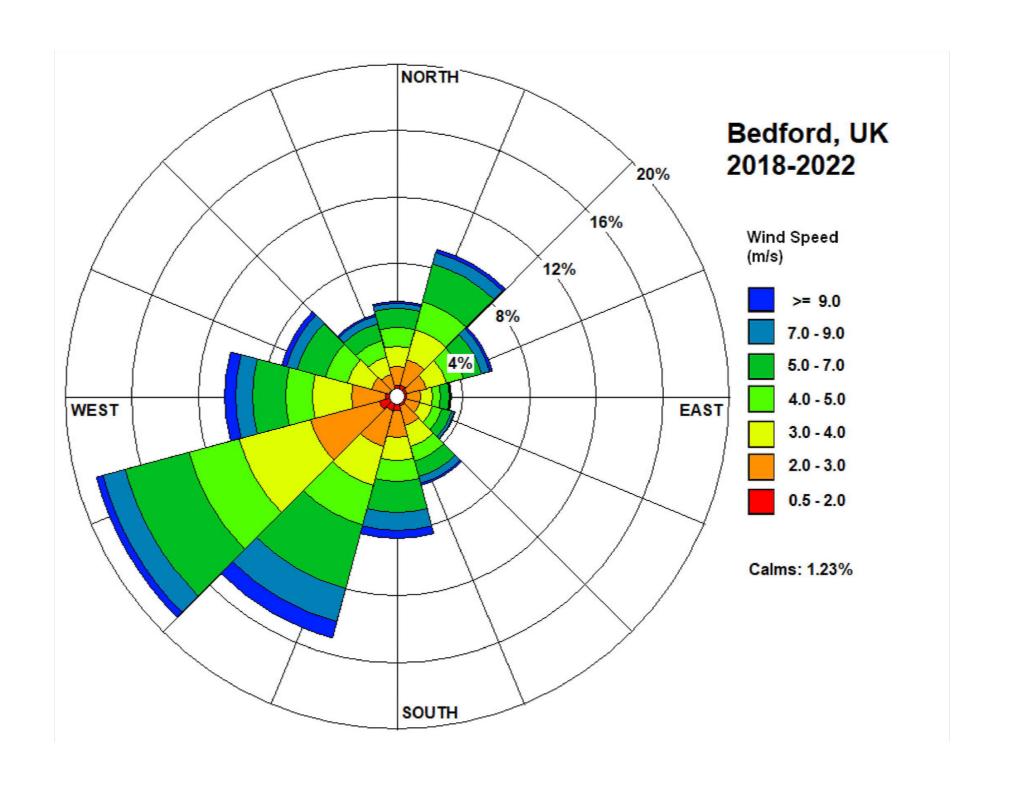


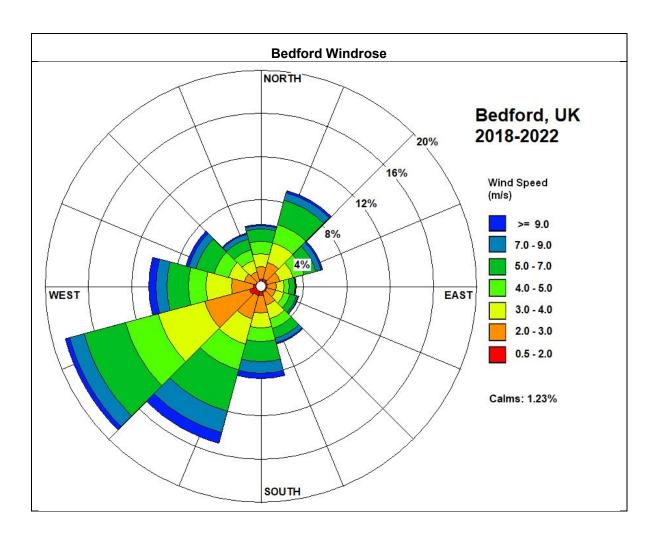
APPENDICES



APPENDIX A WIND ROSE FOR BEDFORD (2018 – 2022)







APPENDIX B VISUAL MONITORING CHECKLIST



Dust Monitoring Form

Week commencing:

Day	Name of assessor	Time	Location	Wind direction	Visual observations / Comments	Action taken
Monday			D1	am o con con		
			D2			
			D3			
			D4			
			D5			
			D6			
Tuesday			D1			
			D2			
			D3			
			D4			
			D5			
			D6			
Wednesday			D1			
			D2			
			D3			
			D4			
			D5			
			D6			
Thursday			D1			
			D2			
			D3			
			D4			
			D5			
			D6			
Friday			D1			
			D2			
			D3			
			D4			
			D5			
			D6			
Additional o	comments	6	D5			

Signed off by	
Management:	

This form should be read and used in conjunction with Figure DEMP 3 which shows the visual monitoring locations D1, D2, D3 and D4

Use as many of these forms as necessary

	Date:	November 2023	Version No	1
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APPENDIX C SITE INSPECTION CHECK SHEET



Site Inspection Check Sheet

Week Commencing:

Daily Check	Mon	Tue	Wed	Thu	Fri	Sat	Sun
TCM signed in?							
Waste/materials stored in correct area?							
Outputs – stored in separate marked areas							
Condition of yard – surface integrity, spillages, debris							
Water storage tank – visual check of integrity							
Dust – visual assessment							
Dust – bowser operational							
Noise – assess operations							
Wheel cleaning equipment - functional							
Mud on road – site entrance checked							
Odour – check for complaints, assess odour							
Litter – check complaints, litter around site							
Security – boundary condition							
Condition of road/site surfaces – cleanliness, surface condition							
☑ if OK or nothing to report							
☑ if not – see facility diary for details							
Weekly Inspections	Comments						
Permit & EMS – available & up to date							
Duty of Care documents – checks current & recorded?							
Mobile & static plant maintenance – checks completed							
Accommodation/welfare facilities – toilets, mess							
Monthly Inspections	Comments						
Warning/information signs – suitability, condition							
Site ID board – condition, still current							
Fire extinguishers / safety equipment	<u> </u>						
First Aid boxes – contents & position							
Plant maintenance schedules							

Issue no: 1 Date: November 2023

Site Inspection Check Sheet						
Comments:						
Checks carried out by:	Print Name		Signed	Date _		
Reviewed by						
Manager/Director:	Print Name		Signed	Date _		
Issue no: 1 Date:	November 2023					