Project details	Environmental Permit Variation Application – EPR BB3103MJ/A002 Grundon Sand and Gravel Limited – Kennetholme Quarry Recycling Facility
Applicant details	Grundon Sand and Gravel Limited Thames House Oxford Road Benson Wallingford Oxfordshire OX10 6 LX
Report details	**EP Variation Application – Appendix 9: Dust Management Plan** **Document reference: GR_2021.02/04_v1**
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1. Introduction

Grundon Sand and Gravel Limited (the 'applicant') has requested that Reva Environmental Ltd (the 'agent') prepares an Environmental Permit (EP) variation application, for its Kennetholme Quarry Recycling Facility on Colthrop Lane, Thatcham, Berkshire, RG19 4NT. The centre of the site is as NGR SU 54098 66170.

The facility is located immediately south of the Kennet and Avon Canal on the former Water and Effluent Treatment Plant site, approximately 2.5 km east of the town Thatcham, within the West Berkshire Council administrative area.

The River Kennet is located approximately 200 m south, and Aldershot Water is located to the east of the site connecting the River Kennet to the Kennet and Avon Canal. The River Kennet is classed as a Site of Special Scientific Interest (SSSI) due to the river showing a downstream transition from chalk to a lowland clay river with species rich flora and fauna.

The existing EP boundary is limited to an area in the centre of the site as shown on Figure DMP1. The facility currently operates in accordance with a Tier 2 bespoke EP (a Waste Operation) for the treatment of inert waste (glass, and C&D waste) to produce soil, soil substitutes and aggregate up to 15,000 tonnes per year.

The area to the east is currently used to process virgin aggregate excavated from the adjacent Kennetholme Quarry. This does not require an EP and has planning permission (and the capability) to process up to 200,000 tonnes per year. The quarry is approaching the end of its life; hence the EP variation application is being made to utilise (and augment) the existing processing plant to treat waste materials to produce a secondary aggregate. The proposal is to process up to 120,000 tonnes of waste per year under the varied EP; within the existing processing capacity of the plant.

The move into the unpermitted area requires an increase to the existing EP boundary. The proposed amended EP boundary is shown on Figure DMP1 below, alongside the site ownership boundary.

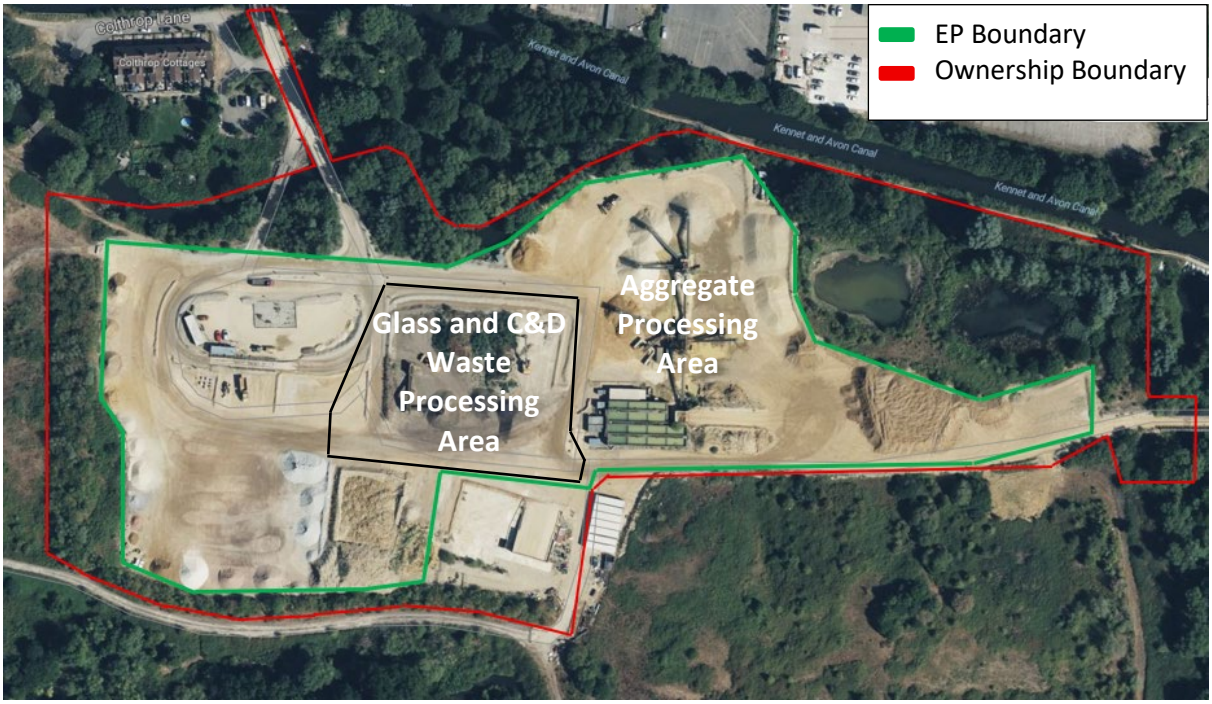

Figure DMP1: Site Location and EP Boundary

The EP facility will comprise the existing glass and C&D Waste Operation, the proposed secondary aggregate Waste Operation which is the screening, wash plant and WTP, and areas for the storage of

waste pending processing and secondary aggregate/soil substitute (product) following treatment.

Access to the facility is from Colthrop Lane to the north; this is the current access route for existing operations.

The facility is located within the West Berkshire Council administrative area. It is not located within an Air Quality Management Area. The closest designation is for NOx (as NO_2) which covers the M4 corridor to Reading, more than 10 km to the northeast. There is no designation for PM_{10} at or close to the site. There are no known planning constraints for the site which relate to the control of dust emissions.

As detailed in the Environmental Risk Assessment (ERA) submitted with the EP variation application, the proposed operations are considered likely to generate dust emissions that are above that currently assessed for the permitted activities. The EP boundary change also brings the permitted operations closer to the nearest residential receptor.

This dust management plan (DMP) is aligned with the ERA (which follows the source, pathway, receptor model) and forms part of the Management System and, in the same way as other procedures are, it will be reviewed on a regular basis in accordance with the EP and also updated as required following any substantiated complaints, emission events, changes to process, or to reflect changes in legislation or best practice. It outlines the procedures that are in place to ensure that dust is managed at the site and that dust nuisance does not arise as a result of the operations.

All employees have a stake in dust control at the site, and training is therefore provided to all staff. A copy of the DMP is made available at the site in both hard copy in the Manager's Office, and electronically.

1.1 Sensitive Receptors

Key sensitive receptors for dust emissions are considered to be those within 1 km of the site.

The potential impact from dust to these will depend on the weather conditions; the perceived impact at receptors located down-wind are likely to be more than at those located cross or up-wind. Some receptors are more sensitive than others, for example a residential area is likely to be more sensitive than an industrial estate.

Table DMP1: Sensitive Receptors

Receptor Ref	Boundary	Closest Receptor Location	Distance at closest point (m)
R1	North	Colthrop Cottages (residential)	60
R2	North	Colthrop Industrial Estate	120
R3	North	Kennet and Avon Canal	Immediately adjacent
R4	South	River Kennet	200
R5	Southwest	Crookham Manor (residential)	400

These features are shown on Figure DMP2.

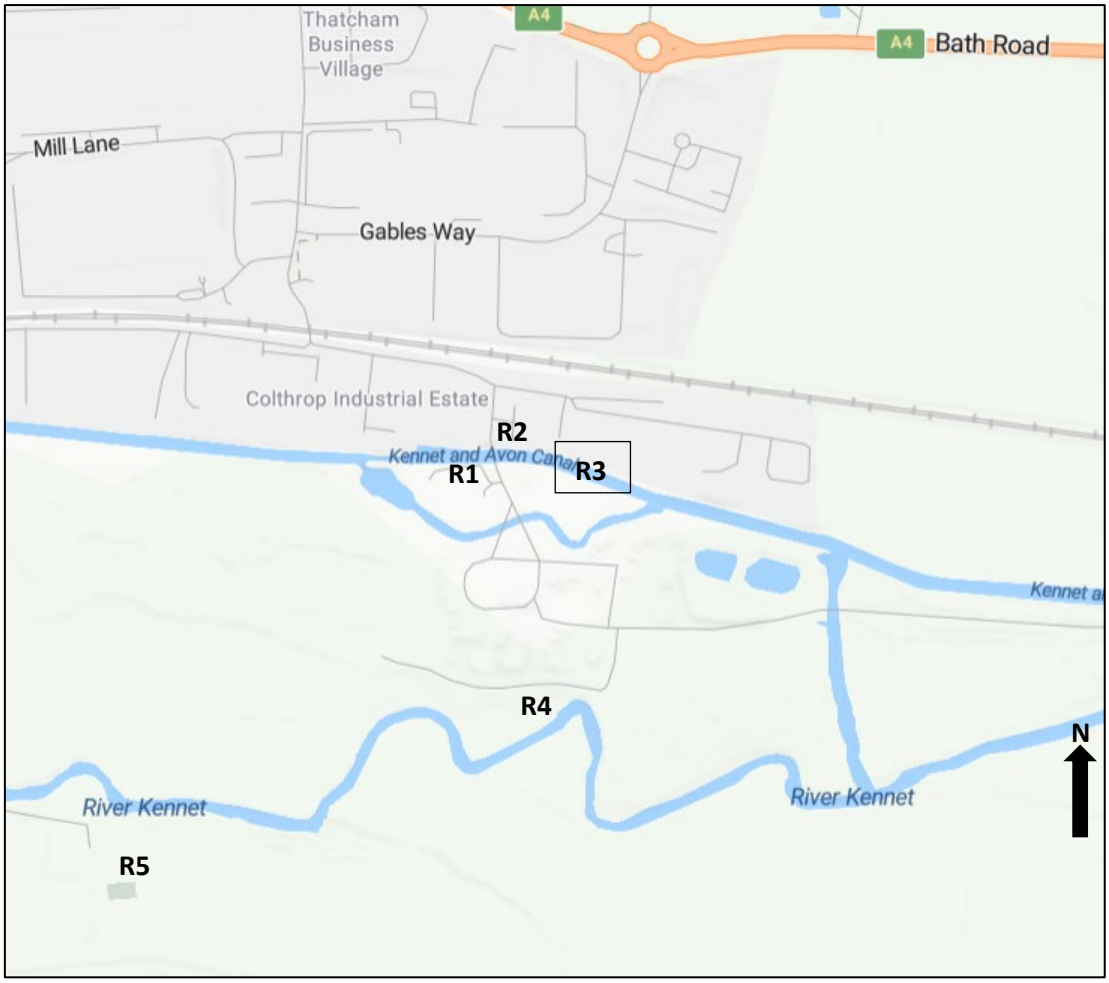

Figure DMP2: Sensitive Receptor Locations

Figure DMP3 presents the wind rose for the area. This is from a meteorological station located at RAF Benson located approximately 26.3 km north of the site and is based on data for a 5 year period, 2017 - 2022. This is the most local weather station and conditions at the site can be considered to be a fair reflection of the data received at it.

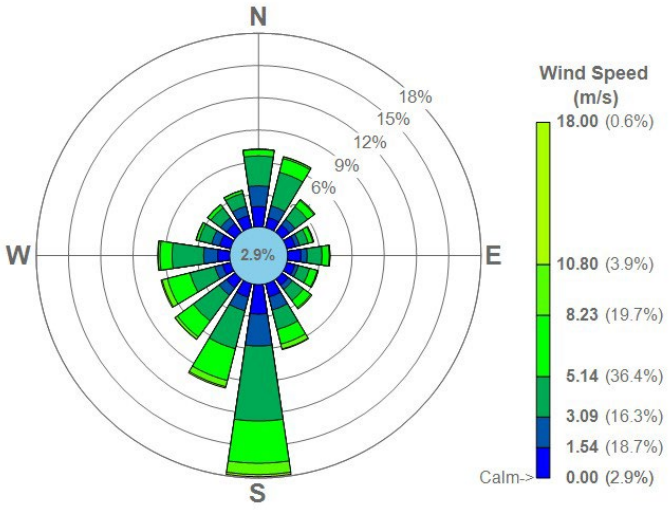

Figure DMP3: Wind Rose

It can be seen that the prevailing wind originates strongly from the south, and therefore it is considered that receptors located to the north of the site would be the most likely to experience an impact from any issue on site and that receptors to the south of the site would be the least likely to experience an issue.

The site is located within a mixed rural and commercial/industrial area that comprises a number of facilities that operate 24/7. These other sources of dust are considered to be relevant when considering the potential impact from the Kennetholme facility.

2. SITE OPERATIONS

2.1 Waste Receipt

Access to the site is to the north, off Colthrop Lane. Waste is primarily delivered via Colthrop Lane, in rigid tipper trucks. These are not owned or operated by Grundon, but the applicant will ensure that all vehicles entering and leaving the site are netted.

The waste comprises loose material, with varying moisture content depending on the source/producer site.

Standard duty of care paperwork (in this case waste transfer notes) will accompany all deliveries to site; this will be retained as per permitting and other legal requirements regarding waste records, in addition to invoices and daily records pertaining to waste receipt, unloading, handling and storage.

Table DMP2 describes the wastes that will be received and how they will be handled/processed.

Table DMP2: Wastes Processed

EWC	Description	Throughput	Destination	Process
01 04 08 & 09 10 11 12 10 12 08 10 13 14 15 01 07 17 01 01, 02, 03, 07 17 02 02 19 12 05, 09, 12 20 01 02 20 02 02	Glass, and C&D waste suitable for processing to produce secondary aggregate and segregate recyclables	<120,000 tpa *19 12 12 is limited to <75 tpd*	Central glass / C&D treatment area (Waste Operation 1)	Stockpiling, crushing and screening
17 05 04, 06, 08 17 09 04 19 08 01, 02 20 02 02	Inert waste suitable for processing to produce secondary aggregate/soil substitute	<120,000 tpa	Waste processing plant (Waste Operation 2)	Stockpiling, screening and washing

2.2 Overview of Waste Processing and Dust Emission Controls

The site layout is presented on a set of drawings provided in Appendix 5 of the variation application; a simplified operational layout plan is reproduced in Figure DMP4.

Figure DMP4: Site Layout Plan – Waste Activities

Waste destined for Waste Operation 1 (glass and C&D waste) is unloaded into a stockpile in that processing area, pending treatment. It is then moved to the screening equipment for processing. Waste destined for Waste Operation 2 is unloaded into the feedstock storage area to the east of the processing plant, at the eastern boundary of the EP area. Waste is moved to the smaller feedstock storage area on a continuous basis to ensure there is material in place ready for processing during operational hours. The layout and process flow avoids any unnecessary double handling of materials.

A copy of the process flow diagram from Appendix 5 of the application is presented in Figure DMP5.

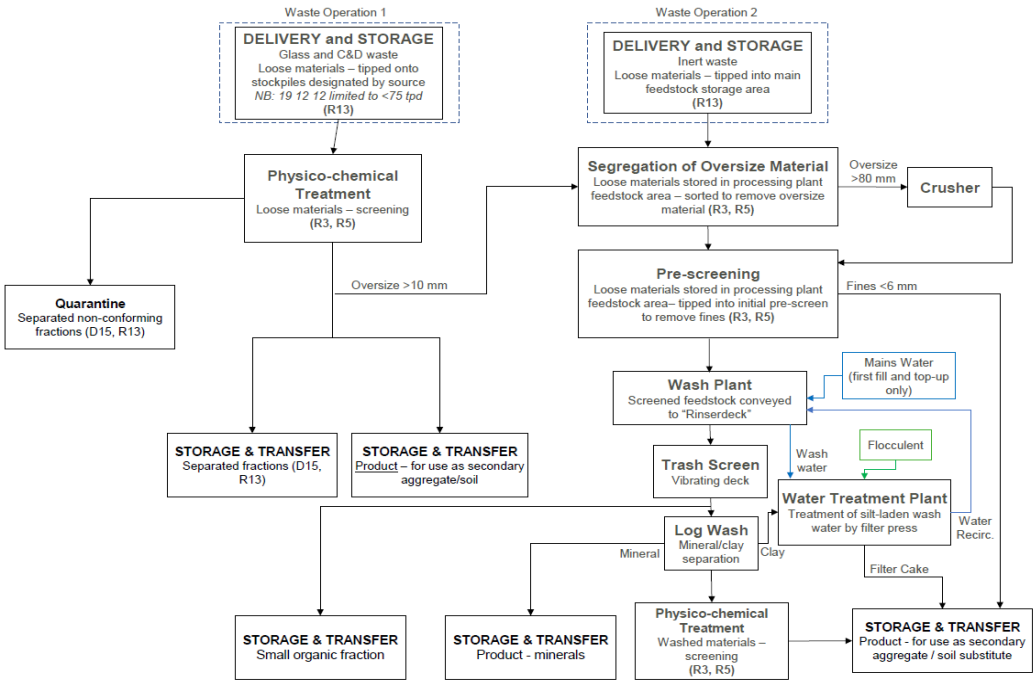

Figure DMP5: Process Flow

The surface of the entire site is unpaved as it has been designed to allow all surface water run off to infiltrate into the underlying ground. As the surfacing presents a potential dust source, dust control measures are in place at the site. These are considered relevant and applicable to the proposed operations and comprise regular cleaning, and visual assessment. A mobile water bowser is available on site, should it be required to dampen the surfaces and/or stockpiles.

Mobile plant used at the site, for moving the waste and handling products is stored in front of the weighbridge office when not in use. Plant is subject to routine service and maintenance in accordance with the manufacturer's specification. Speed restrictions apply on site to avoid unnecessary raising of dust through vehicle movements. The proposed treatment of waste through the existing virgin aggregates processing plant includes the use of a wash plant. Whilst the primary purpose of this is to ensure quality of the product, it does also serve to dampen the waste so provides a level of dust control from this process. Table DMP3 lists the types of plant that are and will be used on site.

Table DMP3: Mobile Plant and Equipment

Description	Make	Model	Emission Rating
Excavator	Caterpillar	CAT329	Tier 4
Bulldozer	Caterpillar	CATD6	Tier 4
Loading shovel	Liebherr	R956	Tier 4

3. DUST & PARTICULATE MANAGEMENT

3.1 DMP Responsibilities

The site is operated in accordance with the company wide certified management system, the implementation of which is the responsibility of, and led by, the management team. It is their responsibility to ensure that the system is understood and complied with at all levels of the organisation. The Site Manager and Team Leaders / Supervisors all have responsibility for emissions management at the site; this includes consideration of, compliance with, and implementation of this DMP. All employees have a stake in emissions control at the site and training is therefore provided to all staff via safe systems of work / tool box talks. Refresher training is provided if assessed as being required and/or in light of any changes made to the DMP.

The DMP, as for all EMS documents, is considered a 'live' document and is reviewed on a regular basis. Circumstances that would initiate an extraordinary review of the DMP would include a significant change to operations, the introduction of any new control measures, the introduction of a new dust source, a change to the site layout or changes to the sensitive receptors.

3.2 Sources and Control of Fugitive Dust / Particulate Emissions

The potential dust sources (materials and processes) are set out in Table DMP4.

Table DMP4: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of Impact	Source-Pathway-Receptor Link Breakage
Mud	Tracking mud on wheels and vehicles – dust-generating materials deposited during transit	R1 & R2	Visual soiling, re-suspension of mud as airborne particles	Waste received are dusty/likely to generate mud. A wheel wash can be used by all vehicles exiting the site, as required. The site is not paved; there is no engineered hardstanding – rain water is able to infiltrate the underlying ground.
Waste Storage	Atmospheric dispersion of dusts from waste materials	R1 – R5	Airborne particulates	A mobile water bowser is available on site, should it be required to dampen the surfaces and/or stockpiles.
Conveying/Moving Waste	Delivery of waste, escape from conveyors, loading of vehicles with materials - subsequent atmospheric dispersion	R1 – R5	Airborne particulates	Wash plant on the Waste Operation 2 dampens the waste being conveyed.
Crushing of Waste	Atmospheric dispersion	R1 – R5	Airborne particulates	A mobile water bowser is available on site, should it be required to dampen the surfaces and/or stockpiles.
Screening of Waste	Escape from screens, subsequent atmospheric dispersion	R1 – R5	Airborne particulates	A mobile water bowser is available on site, should it be required to dampen the surfaces and/or stockpiles. Wash plant on the Waste Operation 2 dampens the waste being screened.
Heavy Plant/Machinery Exhaust	Atmospheric dispersion	R1 – R5	Airborne particulates	Regulatory controls (e.g. use of low sulphur fuels) for vehicles are employed. Movements are minimal; double handling of waste is avoided. Speed limits apply on site. Plant and machinery is maintained and serviced in accordance with supplier guidelines.

Table DMP5 describes the control measures in further detail.

Table DMP5: Dust Control Measures

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
A) Preventative Measures			
Site layout	The primary potential dust sources are the two processing activities where the waste screening and crushing is taking place. These are located in the centre of the site, benefiting from planted screening between them and the off-site receptors.	Opportunities for sensitive layout of process and storage have been optimised with the current design.	Applicable during all operations
Site vehicles rules	The site has a speed limit, strictly enforced, of 10 mph. No vehicles are permitted to idle whilst loading/unloading.	Site rules, including those for visitors to site/contractors, are included in the working procedures which form part of the EMS.	Applicable during all operations
Good housekeeping	Regular inspections of the site form part of the EMS; these ensure areas are kept clean and accumulation of any dusts is avoided.	Formal inspections are carried out daily and findings documented on an inspection check sheet. Findings requiring action are followed up within 24 hours. The inspection covers the full extent of the EP area and focuses on the primary dust sources (stockpiling and processing areas).	This is a standard operating procedure and will apply during all operations
Wheel wash / jet washing of vehicles on exit	If required, mud accumulations can be removed from exiting vehicles to avoid it being taken on to the main roads	Due to the nature of the wastes and the process, a wheel /jet wash is considered necessary and proportionate to the risk.	Applicable during all operations
B) Remedial Measures			

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Cessation of operations	Ceasing crushing/screening operations during periods of high winds in particular when the prevailing wind direction is towards sensitive receptors	Not a long-term solution but will provide control if ever required. If necessary, a procedure will be produced to define 'high winds' i.e. the trigger point for cessation of operations.	Complaints of dust emissions – substantiated; in-house inspections identifying fugitive dust emissions

3.3 Other Considerations

In the event that any of the standard control measures in place to prevent fugitive emissions from the site fail; the EA will be informed within 24 hours.

The dust control measures in place rely on water, however continuity of operations even in abnormal circumstances is enabled through the storage of water in a series of buffer tanks and the use of the WTP to allow wash water from the wash plant to be recirculated. Natural events such as drought, which could impact the availability of water, are considered in the Climate Change Risk Assessment for the site (included in the MS).

3.4 Visual Dust Monitoring

Daily in-house visual inspections are carried out, not just limited to dust but the inspection does include identifying any fugitive dust emissions. This comprises a point in the EP area alongside each of the two process areas, a point at the boundary by the site entrance, and a point at the boundary down-gradient of the prevailing wind at the time of monitoring. The latter is to identify any potential dust emissions beyond the EP boundary. Inspections take place during operational hours only.

Inspections are recorded and the record kept on site for review and trending (and interrogation if related to a complaint) as required. Additional visual dust monitoring will be carried out in response to any complaint received that relates to dust emissions. This will aim to substantiate or otherwise the complaint. If the complaint is upheld, the subsequent investigation will consider operations at the time of complaint in order to identify the possible cause. Remedial action will be taken, and consideration will be given as to whether quantitative dust monitoring is required to be carried out.

4. PARTICULATE MATTER MONITORING

No quantitative monitoring of dust emissions is proposed for this site. Should dust issues arise (e.g. substantiated complaints, unexpected operational conditions) monitoring may be required. Any monitoring will be carried out in accordance with EA guidance, specifically regarding MCERTS, and details will be provided to the EA for agreement prior to undertaking monitoring.

5. REPORTING AND COMPLAINTS RESPONSE

The site will be operated in accordance with an MS. Included in the MS is a process for managing non-conformances and incidents; this also includes management of complaints. Complaints will include those made my members of the public who may perceive there to be an emission from the site; a regulatory body either as the complainant or following receipt of a complaint from a third party that could relate to the site; or contractors/visitors to site who may perceive there to be an emission from the site.

Complaints may be received in person, by telephone, email or letter. Upon receipt of a complaint of dust emissions, an incident report will be completed. This will record details of the complaint, time and date of perceived emission, and contact details for the complainant (including address, and location of the complaint if that is different). Whilst all complaints received will be recorded, not all will be substantiated as relating to activities at the site.

In order to identify if a complaint is substantiated, an investigation will be carried out. This will include, but not be limited to, the following:

- The activities that were being undertaken at the time of the complaint/perceived emission (e.g. any machinery in use, vehicle movements);
- The weather conditions at the time of the complaint/perceived emission (e.g. wind direction, speed, temperature, humidity);
- The location of the complainant/perceived emission; and
- Whether other complaints of a similar nature have been received or whether it is an isolated incident.

The completed incident reporting form will be kept alongside any other supporting information relating to the complaint for example photographs, copies of emails/letters, print outs of weather conditions at the time of the suggested emission etc. This will facilitate the investigation stage of the complaints process.

Findings of the investigation will be provided to the complainant within 2 working days. Where required by the EP (i.e. if the complaint is substantiated), the EA will also be notified.

Records of complaints are retained for a period of at least 6 years. It is noted that the permitted site has not received any dust or environmental complaints since the operations commenced.

5.1 Community Engagement

Communication lines are maintained between Grundon and its neighbouring businesses; this ensures that pertinent information is shared. This includes notifying those premises of any potential or actual issues (e.g. dust emission) that could have an environmental impact on them and may require them to take action to prevent or minimise impact.

It is also important to engage with other interested parties; this raises their awareness of the activities being carried out and provides comfort to them that the site can be approached if there are any concerns.

5.2 Reporting of Complaints

Findings of investigation will be provided to the complainant within 2 working days. Where required by the EP (i.e. if the complaint is substantiated), the EA will also be notified in writing, using the form provided in the EP.

Complaint records sit within the MS and are therefore subject to regular review by Top Management as part of the annual management review process and performance assessment.

5.3 Management Responsibilities

The site is operated in accordance with the certified management system, the implementation of which is the responsibility of, and led by, the management team. It is their responsibility to ensure that the system is understood and complied with at all levels of the organisation. All employees have a stake in emissions control at the site and training in the DMP is therefore provided to all staff.

Any member of staff may receive a complaint and is trained to record the correct details on the incident reporting form; this is then given to the Site Manager for follow up and investigation.

5.4 Summary

This DMP identifies potential dust and particulate sources at the site, seeks to break the source-pathway-receptor model and define control measures that must be implemented, and remain operational, in order to appropriately control emissions of dust.

It has been written in support of the EP variation application for the site; at the request of the EA.

This DMP, as for all EMS documents, is considered a ‘live’ document and is reviewed on a regular basis. Circumstances that would initiate an extraordinary review of the DMP would include a significant change to operations, the introduction of any new control measures, the introduction of a new dust source, a change to the site layout or changes to the sensitive receptors.