



## **Dust Management Plan for Waste Operations**



**Smith's Aggregates Solutions  
Limited**

Lathbury Quarry,  
Land to the North and East of Lathbury,  
Northampton Road,  
Lathbury,  
Buckinghamshire  
(SP875456)

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This Dust Management Plan for Waste Operations was prepared by Chemical Compliance Services Ltd. on behalf of Smith's Aggregates Solutions Limited.

**Document Control Table**

<b>Project Reference</b>	<b>CCS/Lath/DMP211015</b>	
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Sensitive Receptors Plan	Drawing No. CCS- LATH - 74329050_1_1 – Sensitive Land Uses
Proposed Site Layout Plan	Drawing No. CCS-LATH 001

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# 1. Introduction

- 1.1. Chemical Compliance Services Limited has prepared this Dust Management Plan for Waste Operations on behalf of Smith's Aggregates Solutions Limited to support an application for a bespoke deposit of waste for recovery Environmental Permit.
- 1.2. The site this Dust Management Plan covers is located at Lathbury Quarry, Land North of Lathbury, Northampton Road, (Accessed Via Sherrington Road), Lathbury, Buckinghamshire, MK16 8LE (Site).
- 1.3. This Dust Management Plan only considers the waste operations to be undertaken at the Site. Mineral extraction is currently being undertaken at the Site. Many of the mitigation measures listed in this Dust Management Plan for Waste Operations are in use at the Site already to mitigate the impact of dust from the mineral extraction operations.
- 1.4. The Site is located 0.4km North of Lathbury, Buckinghamshire. Northampton Road runs along the Southwestern boundary of the Site. The Site is accessed via a long (0.5km) haul-road to the SouthEast of the site.
- 1.5. The Site extends to an area of approximately 23.5 Hectares. The boundary of the Site is shown in Permit Boundary Plan, Drawing No. SMLATH2103 and in *Figure 1.0 – Site Location* and *Figure 1.1: "Location and extent of Lathbury Quarry"*. Fencing and hedging exists along the boundaries of the Site.



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Figure 1.0 - Site Location





*Figure 1.1 Location and extent of Lathbury Quarry*

- 1.6. This Dust Management Plan provides detailed information on the sources, risks and mitigation measures related to the potential of dust from the deposit of waste for recovery operations proposed to be undertaken at the Site.

## **Content of the Dust Management Plan**

- 1.7. This Dust Management Plan will form part of the Management Plan for the Site. Procedures and forms referenced within this Dust Management Plan will be included within the Management Plan. Completed forms (records) will be kept, as required by conditions of any Environmental Permit to be obtained for the Site.
- 1.8. This Dust Management Plan for Waste Operations is structured as follows:
  - Section 2 provides a summary of the relevant legislation and guidelines.
  - Section 3 provides information relating to the Site setting, including the location of the Site and nearby sensitive receptors.
  - Section 4 provides a summary of the proposed changes to operations carried out on the Site and the delivery of waste to the Site.
  - Section 5 provides information on the site management and the mitigation measures employed at the Site.
  - Section 6 provides information on how dust emissions are monitored at the Site.
  - Section 7 provides a description of how complaints can be made and how they are addressed by the site management.

## 2. Relevant Legislation

- 2.1. The Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland fulfils the requirement under Part IV of the Environment Act 1995 for a national air quality strategy which sets out policies for improving ambient air quality and keeping these under review. The first strategy, the National Air Quality Strategy (NAQS), was published in March 1997. In January 1999, proposals to amend the strategy were put out for consultation and a consultation document was produced. Following consultation, a revised version of the strategy was published in January 2000. This was further revised in July 2007 and has not been revised since this date.
- 2.2. i) The AQS provides a framework for air quality control through air quality management and air quality standards and objectives for different pollutants (including particulate matter). These air quality standards and objectives were transposed into English Law by the Air Quality (Standards) Regulations 2010.
- ii) The Air Quality Standards Regulations 2010 require that concentrations of PM in the UK must not exceed:
- An annual average of 40 µg/m<sup>3</sup> for PM10;
  - A 24-hour average of 50 µg/m<sup>3</sup> more than 35 times in a single year for PM10;
  - An annual average of 25 µg/m<sup>3</sup> for PM2.5.

### Air Quality Management Area (AQMA)

- 2.3. The system of local air quality management (LAQM) was introduced under the Environment Act 1995. LAQM requires local authorities to periodically review and assess the current and future quality of air in their areas. Where it is determined that an air quality objective is not likely to be met within the relevant time period, the authority must designate an AQMA.
- 2.4. The Site is not located within an AQMA.

### Low Emission Zone (LEZ)

- 2.5. A LEZ is an area that has restrictions on the type and age of vehicles permitted in it, therefore, vehicles emitting high levels of pollution can be prevented from entering and operating within the zone.
- 2.6. The Site is not located within a LEZ.



### 3. Site Location and Sensitive Receptors

#### Site Location

- 3.1. Lathbury Quarry is located to the North of Lathbury, Near Newport Pagnell, Buckinghamshire, MK16 8LE.
- 3.2. The Site is located directly North of Lathbury Village. Northampton Road runs along the Southwestern boundary of the Site. The national grid reference for the centre of the Site is SP 87500 45600.
- 3.3. The Site extends to an area of approximately 25.6 Hectares. The boundary of the Site is shown on Permit Boundary Plan, Drawing No. SMLATH2103. Fencing and hedging exists along the boundaries of the Site.
- 3.4. Soil bunds are also established within the site boundary.
- 3.5. The Site is accessed via Sherrington Road, which runs along to the Southeast of the Site. The access point to the Site is located at grid reference SP 88190 45020.
- 3.6. Land-uses surrounding the Site include residential areas, agricultural land and a woodland of conservational interest.
- 3.7. The proposed site does not fall within a Source Protection Zone (SPZ). The River Great Ouse is approximately 60 m from the edge of the proposed inert waste recovery area at its closest reach
- 3.8. The Site is located within superficial deposits classified as a Secondary 'A' aquifer and overlying bedrock deposits classified as a Principal Aquifer. The limestone aquifer is in hydraulic continuity with the overlying River Terraces aquifer and with springs to the northeast and the River Great Ouse.
- 3.9. The quarry void and Infill area lies entirely within Flood Zone 1. However, the likelihood of fluvial flooding at the site is considered to be 'low' and the overall risk is 'low'.

#### Sensitive Receptors

- 3.10. This Dust Management Plan identifies receptors within 500m of the Site that may be sensitive to dust emissions.
- 3.11. The distance from the Site boundary to the sensitive receptor plays an important role in the potential impact experienced from airborne dust. Concentrations of airborne dust reduce significantly, further away from the source.
- 3.12. Due to the nature of the waste being handled on this Site the particle size of the dust emitted is of intermediate to large particles. Therefore, it can be concluded that these particles are highly likely to be deposited within 50m of the source.

- 3.13. The direction and distances from the boundary of the Site to the boundary of sensitive receptors are provided in Table 3.1 Sensitive Receptors. The references 1-6 are shown on the Sensitive Receptors Plan, Drawing No . CCS- LATH - 74329050\_1\_1
- No statutory or non-statutory sites of conservation interest are located within 500 m of the site other than Ash Spinney. Ash Spinney is a spring-fed broad-leaved woodland of local conservation interest.

Table 3.1: Sensitive Receptors

Potential receptors for Dust			
Ref.	Type	Name	Distance & Direction (m)
1	Closest domestic dwellings	Smith's Red Brick Cottage Lathbury Shaw	<50 m SW
2		Home Farmhouse 1-5 Inn Farmhouse The Old Rectory and the Wing	50 to 250 m SW
3	Offices, industrial units and commercial premises	Office and processing buildings	On-site
4	Sensitive habitats	Ash Spinney Woodland	Adjacent N
5	Major highway and minor roads	Northampton Road	Adjacent SW
6	Farmland		Adjacent

## Meteorology

- 3.14. Unlike many other atmospheric pollutants, the generation of dust is particularly dependent upon weather conditions.
- 3.15. The predominant meteorological conditions at any site will be dependent upon many factors, including its location in relation to macroclimatic conditions as well as more site specific, microclimatic conditions. Clearly the most significant meteorological factor is the predominant wind direction and wind speeds, and consequently data has been collected regarding the predominant wind speeds and directions appropriate to the Site.
- 3.16. Wind speed and direction data have been obtained from Meteoblue website.  
[https://www.meteoblue.com/en/weather/archive/windrose/lathbury\\_united-kingdom\\_2644826](https://www.meteoblue.com/en/weather/archive/windrose/lathbury_united-kingdom_2644826).



Wind rose 1 - 27-09-2021 - 03-10-2021.



Wind rose 2 - 04-10-2021 - 09-10-2021.

Figure 2: Wind roses from Lathbury Observing Station periods:  
Arrow indicates predominant wind direction.

3.17. The predominant wind blows from the south-west towards receptors to the north-east of the Site. There are no sensitive receptors to north-east of the Site (see Table 3.1: Sensitive Receptors). The closest receptor to the predominant wind direction is the Ash Spinney to the North.

- 3.18. It is considered that predominantly it is unlikely that dust from the waste operations at the Site will reach these sensitive receptors. The mitigation measures discussed in Section 5 of this Dust Management Plan should further limit the possibility of dust emissions reaching sensitive receptors around the Site.
- 3.19. An Air Quality and Dust Assessment was completed in October 2017 at the time of applying for planning permission. The Dust Assessment discusses the impact of dust of the mineral extraction operations at the Site and the associated importation of inert material to restore the quarry, see *Appendix 1* Dust Assessment, **Dustscan Ref: GPPLQ**. The Dust Assessment concludes that a series of mitigation measures were proposed at the time of writing to reduce the impact of the Site's operations, including the importation and placement of inert material, on nearby sensitive receptors.
- 3.20. Seasonal variations in wind speed have not been separately considered in this Dust Management Plan. Smith are likely to cease infilling works during the winter time when inclement weather is more likely.

### Other Sources of Dust

- 3.21. There is the potential for dust to be emitted from vehicle movements along Sherrington Road that runs to the Southeast of the site. The mitigation measures employed in *Section 5* should mean that only minimal mud deposition is present and therefore minimising the potential for emission.
- 3.22. It is considered that agricultural activities carried out at particular times of the year on the surrounding agricultural land will have the potential to cause dust emissions.
- 3.23. Mineral extraction is currently undergoing at the Site. This Dust Management Plan relates to the waste operations to undertaken at the Site only. The Dust Assessment Appendix 1) discusses the impact of dust of the mineral extraction operations at the Site and the associated importation of inert material to restore the quarry.

## 4. Operations at the Site

### Waste Deliveries

- 4.1. All waste deliveries will be accompanied by a Waste Transfer Note (WTN) which is obtained from the load driver. The WTN will provide information on the driver, waste haulier name, permit number, description of waste etc. Loads not accompanied by a WTN or that do not match the description on the WTN will be rejected.
- 4.2. Waste will be brought onto the Site for use in the restoration of the quarry. Waste acceptance procedures will be applied to ensure that only suitable waste is accepted. Wastes consisting solely or mainly of dusts, powders or loose fibres will not be accepted on Site.
- 4.3. Waste will be delivered onto the Site by Heavy Good Vehicles. The movement of vehicles visiting the site and moving around within the Site has the potential to cause dust emissions, particularly in dry and windy conditions.
- 4.4. All vehicles entering / exiting the Site will be sheeted to minimise the likelihood of dust emissions. Vehicles entering the Site will be visually inspected prior to unloading to ensure that excessively dusty loads are not accepted. The waste acceptance procedure implemented through the Site's Waste Acceptance Procedure does not allow for the acceptance of dusts or powders. Therefore, overly dusty loads will be rejected from the Site in accordance with the Waste Rejection Procedure in the Management Plan.
- 4.5. Mud could be tracked out of the site by vehicles potentially causing dust emissions from the road surface. The Site has wheel washing facilities in place to help reduce the occurrence of significant dust emissions.
- 4.6. Waste is brought into the site through the entrance of the site off Sherrington Road. Vehicles will be transported to the site office and the load details recorded. Vehicles will unload the waste which may be temporarily stored in the waste storage areas on the Site or input directly into the restoration works.

### Overview of Waste Operations

- 4.7. The waste operations carried out at the Site will include the importation and deposit of waste to restore the quarry. Mineral extraction operations are currently being undertaken at the Site.
- 4.8. Specific waste operations to be carried out on Site are listed below with further information regarding the potential for these activities to cause dust emissions:
  - Waste Handling and Movement
    - Wastes such as soils can be considered to be dusty if they are dry. Movement of these waste types and materials therefore has the potential to cause dust emissions.
    - Loading and off-loading of vehicles and equipment has the potential to cause dust emissions.
  - Waste Storage

- Imported wastes may be temporarily stored in stockpiles before being placed in the restoration. Should these stockpiles of waste become dry then they may be a potential source of dust emissions.
- Dust emissions from stockpiles of waste may occur in the event of wind whipping.
- Vehicle Movements
  - The movement of vehicles around within the Site has the potential to cause dust emissions, particularly in dry and windy conditions.
  - Mud could be tracked out of the Site by vehicles potentially causing dust emissions from the road surface.
  - Dust could be released directly from dry materials being carried by vehicles.

## Site Layout

- 4.9. The proposed layout of the Site is shown on the Proposed Site Layout Plan, Drawing CCS-LATH 001
- 4.10. Incoming loads will be directed to the Site Office, which are located to the Southeast of the plant processing area and the silt and water management area of the Site.
- 4.11. The incoming loads will then be directed to an area for temporary waste storage or will be directed to an offloading area on the Site to input waste straight into the restoration works at the Site.
- 4.12. Any vehicles leaving the Site will go through the wheel wash located approximately 250m from the Site entrance.



## 5. Dust Management and Mitigation

### Responsibility for Implementation of the Dust Management Plan

- 5.1. The Site Manager is responsible for the implementation of the Dust Management Plan for Waste Operations and for ensuring that the mitigation strategies are implemented at the Site. Where the Site Manager is unavailable to oversee the implementation of dust suppression measures, a suitably experienced Site Operative is allocated responsibility.
- 5.2. The Dust Management Plan for Waste Operations will be reviewed every four years or when a change in operations is deemed to have a potential effect on increasing dust emissions. The review process will amend any mitigation measures that have been identified as areas for improvement in reducing dust emissions on Site.
- 5.3. All staff members will have the necessary training to deliver dust suppression measures detailed within this Dust Management Plan. All staff are given relevant training on the Management Plan for the Site, which includes a Dust Procedure, see *Appendix 2 Dust Procedure*. All staff on the Site are trained on the Dust Procedure which includes details regarding mitigation measure and monitoring/recording visual inspections. Where new dust suppression measures are to be implemented refresher training will be provided to ensure staff remain competent. This training is delivered by the Site Manager.

### Overview of Dust Control

- 5.4. Restoration of the Site using imported waste will be progressive and where possible would be placed directly into the restoration. Waste would be placed and levelled by a dozer. The routes of any HGVs would not go into any areas when imported waste has been re-spread. Placement of waste in the restoration would be intermittent, so in the absence of mitigation measures at the Site there would be the potential for short term moderate to high levels of dust emitted as stated in the Dust Assessment, see Appendix 1.
- 5.5. Smith Aggregates Solutions Limited have dust control measures in place to help mitigate dust emissions at the Site, see Table 5.2 Mitigation Measures. These measures will be implemented when appropriate, particularly in periods of dry weather or when dust is identified to be excessive and escaping the Site boundary.
- 5.6. The Site boundary will be inspected regularly to identify any dust emissions leaving the Site.
- 5.7. Stockpile heights on Site will be minimised at all times in order to reduce the distance in which dust and particulates could be blown and dispersed by winds.

### Sources and Control of Dust Emissions

- 5.8. Table 5.1 details the potential sources of dust on the Site and which mitigation measures are implemented in order to break the source-pathway-receptor routes for dust emissions.

- 5.9. Table 5.2 provides further information on the mitigation measures used to control dust emissions at the Site.

**Table 5.1: Source-Pathway-Receptor Routes**

Source	Pathway	Receptor	Type of Impact	Where relationship can be interrupted
Mud	Transportation of dust from mud on wheels and vehicles.	Public highways.	Mud on surrounding highways. Resuspension of mud as dust.	Wheel washing facilities present on Site will remove the mud from the wheels of vehicles exiting the Site. A road sweeping vehicle will be deployed when necessary to remove mud from the local highways. The site operator estimates that a roadsweeper will be hired in at least twice a month. Vehicles delivering waste will be sheeted. Where mud is identified as an ongoing issue a road sweeper will be deployed. All areas will be subject to regular housekeeping in accordance with the procedures in the Site Management Plan.
Vehicle / Plant movements	Atmospheric dispersion	Surrounding sensitive receptors	Dust emissions	A 10mph speed limit and a 'no-idling' policy will be implemented on Site. Haul roads within the Site will be dampened down during periods of dry weather or when dust is identified to be excessive. The Site will be subject to regular housekeeping in accordance with the procedures in the Site Management Plan.
Tipping and storage of wastes	Atmospheric dispersion	Surrounding sensitive receptors	Dust emissions	Potential dust emissions will be reduced by minimising drop heights when moving dusty wastes. Waste may be stored stockpiles which will be dampened down in periods of dry weather or when wind whipping is identified to be excessive. Dowsing the stockpiles causes a crust to form that reduces the amount of dust emitted from the Site from wind-whipping of stockpiles. Operations will temporarily cease when winds are deemed to cause excessive movement of wastes and materials.
Operation of plant	Atmospheric dispersion	Surrounding sensitive receptors	Visual soiling and dust emissions	Operations will be temporarily ceased in periods of very high winds.

**Table 5.2: Mitigation Measures**

Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
<b>Preventative Measures</b>					
Site speed limit, 'no idling' policy and minimisation of vehicle movements on Site.	Reducing vehicle movements will reduce dust emissions from the Site. Enforcement of the speed limit and limiting movements will reduce the chance and amount of re-suspension of dust and particulates by vehicle wheels.	The Management Plan will have procedures for a 10mph speed limit, a 'no-idling' policy, and the minimisation of vehicle movements. Vehicle movements will be minimised by ensuring that the double handling of materials is avoided where possible e.g. loads entering the Site may be directed to a location in the quarry so that the load can be deposited directly into the restoration works. A load may be required to be temporarily stored in a waste stockpile.	No trigger for implementation. These mitigation measures will be included in the Management Plan and will be carried out at all times.	Enforcement by Site Manager and observation by Site operatives.	If excessive dust emissions that could cause nuisance to local receptors continue, further mitigation measures will be triggered. If required, a road sweeper will be deployed to clean and dampen the surface of the access road. Water sprays will also be available to dampen surfaces and stockpiles to prevent particulate matter becoming airborne. If excessive dust emissions from vehicle movements continue after these measures, then operations shall cease.
Minimising drop heights	Minimising the height from which the waste is dropped should reduce the likelihood dust could	Handling of material on Site should be minimised at all times in accordance with procedures within the EMS.	This measure will be implemented whenever the Site is operational i.e.	By plant operators lowering the grabs, shovels, conveyors etc on the equipment being used to move/place	Water sprays will also be available to dampen surfaces and stockpiles to reduce dust generation.

Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
	be generated and dispersed by winds.	Staff will be trained with regard to minimising drop heights.	whenever material is being moved.	potentially dusty materials prior to materials being released. Staff will be provided with training on the Management procedures and will be trained on how to use the equipment on the site to minimise dust. The Site Manager will monitor site operations and other staff members to check that drop heights are being minimised whilst equipment is in use.	If excessive dust emissions continue after these measures, then operations shall cease.
Good house-keeping	Having a consistent, regular housekeeping regime that is supported by management, will ensure the site is regularly checked and issues remedied to prevent and remove dust and particulate build up.	The Site has a procedure for housekeeping. Waste will be stored in designated stockpiles before placement in the restoration.	No trigger for implementation. These mitigation measures will be carried out at all times.	Enforcement by Site Manager and observation by Site operatives.	If excessive dust emissions that could cause nuisance to local receptors continue, further mitigation measures will be triggered. E.g. water sprays will be used to dampen surfaces and stockpiles to prevent particulate matter becoming airborne.

Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles.	All vehicles entering / exiting the Site must be sheeted to minimise the likelihood of dust emissions. Excessively dusty loads will not be accepted onto the Site.	Loading of potentially dusty materials on to a vehicle will be followed by closing of the sheet covers on that vehicle. Visual observation of incoming vehicles. All vehicles carrying waste to the Site will be sheeted at all times unless being loaded or unloaded. Any loads rejected from the Site will be sheeted	The sheeting equipment will be activated and checked to ensure proper coverage of the load before the vehicle is allowed to leave the site. Incoming vehicles that are not sheeted will be rejected from the site or sheeted immediately.	If excessive dust emissions continue, then operations shall cease.
Wheel washing	A wheel wash is present at the entrance to the Site and consists of a trough of waste for vehicles to drive through. The wheel wash helps to remove mud from wheels of the vehicles.	The wheel washing facility is used to remove mud from the wheels of vehicles and is inspected on a regular basis to ensure the facility is in working order.	Wheel washing is undertaken when a vehicle exits the Site.	Site operatives will ensure that wheel washing facilities are used as required.	If excessive dust emissions that could cause nuisance to local receptors continue, further mitigation measures will be triggered. e.g. water sprays will be used to dampen surfaces and stockpiles to prevent particulate matter becoming airborne.
Ceasing operations	Mobilisation of dust is likely to be greater during	During exceptionally dry and/or windy conditions if any	If excessive dust is being generated by	The Site Manager will make the decision to	N/A



Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
during high winds and/or exceptionally dry conditions.	periods of strong winds and exceptionally dry conditions.	operations / Site movements cause or are likely to cause excessive dust emissions beyond the Site boundary, or if abnormal dust emissions are observed within the Site, Site operations may be suspended to avoid further dust emissions. The weather conditions at the Site will be considered at the start of each working day so that the day's work may be planned to take in regard any potential dust emissions. If the wind speed and direction are likely to increase the risk of nuisance to neighbouring receptors, then operations may be temporarily stopped. There is no specific wind speed limit and/or no specific criteria for this to occur, as dust is dependent on other conditions such as rain. The Site manager will decide whether to cease operations as a result of weather conditions. This decision is based on a combination of factors, including those	the operations and water sprays are proving not to be sufficient, then the Site Manager notifies staff and operations are temporarily ceased. Operations commence once the wind has subsided and/or the area is dampened down. Weather condition monitoring (Visual observation) including wind strength, wind direction and rainfall. This monitoring is recorded on the Daily Inspection Checklist.	temporarily cease activities that are causing the dust emissions.	Operations will resume on the Site when the circumstances causing the excessive dust emission have been resolved. It is the Site Manager who decides when operations will temporarily cease and when they will continue.

Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
		mentioned above. The conditions will be recorded on the Daily Inspection Checklists. The record will include an overall description of the weather conditions including, but not limited to, wind strength (e.g. windy, not windy), wind direction (e.g. towards northern boundary) and rain.			
Minimisation of stockpile heights on Site.	Minimising stockpile heights should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds.	The Management Plan will include a stockpile plan for the maximum height and volume allowed for the stockpiles on Site in order to reduce the potential for excessive dust emissions.	These measures will be implemented whenever the Site is operational.	The Site Manager will keep a record on the Daily Inspection Checklists to ensure stockpiles do not exceed the heights specified in the stockpile plan in the EMS.	If excessive dust emissions that could cause nuisance to local receptors continue, further mitigation measures will be triggered. E.g. use of water sprays to dampen stockpiles / surfaces or ceasing dusty activities.
<b>Remedial Measures</b>					
Road sweeper	Removes the mud from Stanfield Road and the access road to the Site.	A road sweeper will be deployed to control the amount of mud on local roads and minimise the generation of dust when appropriate.	Visual observation of the state of the access road and Stanfield Road - findings recorded on the Daily Inspections Checklist	A roadsweeper will be deployed to clean up local roads and access road if there is excessive mud. Site management will hire	N/A

Mitigation Measure	Description / Effect	Use on Site	Trigger for implementation	How is it implemented?	Further mitigation if required
		<p>The cleanliness of pathways and roads in the vicinity of the Site entrance will be checked as part of the maintenance procedure and included on the Daily Inspection Checklists.</p> <p>If the Daily Inspection Checklist identifies a requirement for the road sweeper to be used, then a road sweeper will be hired in, deployed and used by a relevantly trained person.</p>	<p>in the EMS. This will identify the need for the use of the roadsweeper.</p> <p>Constant observation by all operatives on the Site.</p>	<p>in a roadsweeper onto the Site and will instruct deployment of the roadsweeper.</p>	
Water suppression	<p>Use of a tractor and water bower on the site to wet surfaces during dry/windy weather. This measure can remove dust from the air and dampen down dry / dusty materials.</p>	<p>Sprays will be in use at the Site to dampen surfaces and stockpiles of material to prevent particulate matter becoming airborne. The condition and integrity of the water bowser and sprays will be checked as part of the Inspection Checklists.</p>	<p>When excessive dust emissions are observed to be leaving the Site boundary. Visual observation will be carried out by all employees on the Site. Findings from the visual observations will be recorded on Daily Inspection Checklists.</p>	<p>Use of water sprays on the Site will be used to minimise dust emissions. Site Management will instruct the relevantly trained operative to use the tractor and bowser on the Site.</p>	<p>If excessive dust emissions that could cause nuisance to local receptors continue, further mitigation measures will be triggered. E.g. cessation of dusty activities.</p>

## **Other Considerations:**

### **Water availability**

- 5.10. Water for dust suppression is available from the lagoon located in the mineral processing plant area of the site.
- 5.11. To prevent dust generation, site surfacing and stockpiles may be dampened down using water from a mobile water bowser and spray attachment.

### **In the event of a drought**

- 5.12. During exceptionally dry and/or windy conditions, if any operations / site movements cause or are likely to cause visible dust emissions beyond the Site boundary, or if excessive dust emissions are observed within the Site, site operations may be temporarily suspended to avoid further dust emissions. This will be decided by the Site Manager.
- 5.13. Although not envisaged to ever be the case, depending on the severity of the drought conditions, restrictions may be in place on the amount of water available for use on Site. In this case, operations may be reduced or suspended in order to comply with any water usage restrictions.

## 6. Monitoring

### Visual Dust Monitoring

- 6.1. Dust emissions for the Site will be assessed by visual observation. Assessments will be recorded daily on the Daily Inspection Checklists in the Site Management Plan, see Appendix 3 Inspection Checklists. It is the responsibility of every member of staff to visually monitor the emission of dust from the Site. Monitoring of dust will be carried out by visual assessment. Visual dust monitoring will take place anywhere within the proposed permit boundary and in the immediate vicinity of the Site.
- 6.2. It is the responsibility of all staff members to visually check for dust emissions leaving the site during the working day. Emergency contact numbers are available to local businesses/ residences on the Site Notice Board, should dust be causing a nuisance. It is not considered that there would be significant emissions of dust outside of operational hours.
- 6.3. If excessive dust emissions are leaving the Site boundary, then the Site Manager will establish what is causing the excessive dust emission to be generated and take remedial action. The results of the investigation and what action was taken will be recorded and retained.
- 6.4. The prevailing weather conditions at the Site will be considered and recorded at the start of each working day so that the day's work may be planned as appropriate regarding potential dust emissions. Wind direction and weather will be determined by visual observation of the conditions. The conditions will be recorded on the Daily Inspection Checklists. Information on the Daily Inspection Checklists will contain an overall description of the weather conditions including, but not limited to, wind strength (e.g. windy, not windy), wind directions (e.g. predominantly towards North Eastern boundary) and rain.
- 6.5. Table 5.2 states the mitigation measures in place in case of excessive dust emissions on Site.
- 6.6. There will be no dust monitoring equipment located on the Site. Only visual monitoring of dust emissions will take place. Visual monitoring will take place whenever the Site is operational and from anywhere within the Site boundary.
- 6.7. No regular quantitative dust monitoring is planned to be undertaken on the Site. Although a campaign to carry out a temporary period of dust monitoring to establish whether dust emissions are an issue at the site is proposed when operations commence. This is proposed to consist combined directional and depositional sticky pad dust gauges with replacement cylinders. Located to reflect the predominant South westerly wind direction, with monitoring points before and after the permit boundary. See *Figure 3*. A period of monitoring over 3 months is thought to give an adequate sample time, removing and replacing the gauges on a fortnightly basis to analyse the specimens. The results will be used to extrapolate a 24hour average ( $\mu\text{g}/\text{m}^3$ ) and compare to the NAQS PM10 Standards limits as detailed in *Section 2.2*.

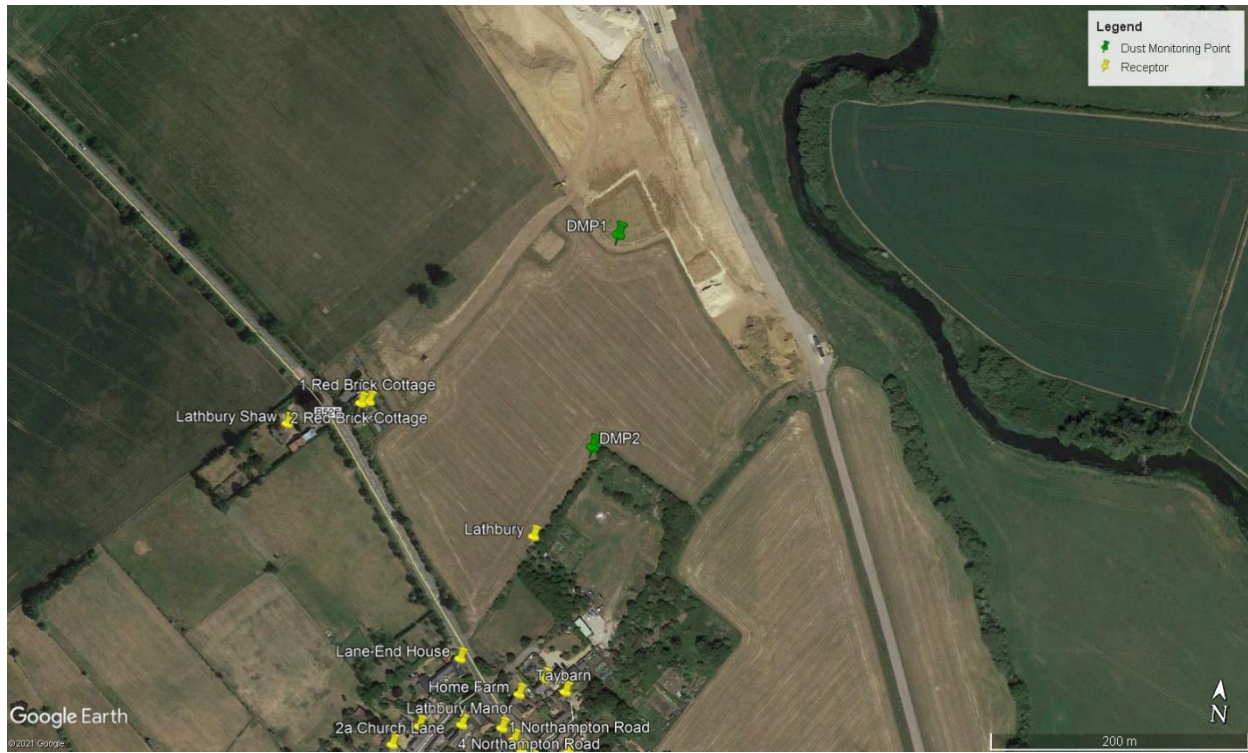


Figure 3 – Proposed locations for the temporary Dust Monitoring Points



## **7. Reporting and Complaints Response**

### **Engagement with the Community**

- 7.1. A Site Notice Board will be located at the Site entrance and will include the following information:
- The Environmental Permit holder's name.
  - The operator's name.
  - An emergency contact name and telephone number for the operator.
  - A statement that the Site is permitted by the Environment Agency.
  - The Environmental Permit reference.
  - The Environment Agency national numbers, 03708 506506 and 0800 807060 (incident hotline).
- 7.2. The provision of the above information ensures that members of the community can contact Smiths Aggregates Solutions Limited should they be concerned by dust emissions or wish to make a complaint. This also applies to any events that may happen when the Site is unmanned / not operational.
- 7.3. Contact numbers on the Site Notice Board will allow any out-of-hours complaints regarding dust emissions to be made to the operator. The operator will respond accordingly during out-of-hours to complaints.

### **Reporting of Complaints**

- 7.4. Should a complaint regarding dust be received by the Site, the complaint will be recorded on the Complaints Form and investigated in accordance with the Complaints Procedure implemented on the Site. The Complaints Form records who made the complaint, what the complaint was about and what has been done to resolve the issue and make sure this does not happen again.
- 7.5. The Site Manager must identify what caused the excessive dust emission to be generated. This generation may have been caused by failure of site machinery or dust procedures. If the excessive dust emission has been caused by a procedure not being carried out properly, then staff will receive repeat training on the dust procedures and site management.
- 7.6. In all cases, and where information is available, all complaints will be acknowledged and investigated. Any complaints received by the Environment Agency relating to dust emissions from the site are dealt with as soon as is reasonably possible upon notification.

### **Management Responsibilities**

- 7.7. Site staff are responsible for dust management issues and detecting/reporting dust emissions. All members of staff are given training on the Site Management Plan for the Site, which includes a Dust Procedure. All staff on the Site are trained on the Dust Procedure which includes details regarding mitigation measures and monitoring/recording visual inspections.

- 7.8. On receipt of a complaint the Site Manager investigates and establishes the cause. The most effective corrective or preventative action must then be determined to prevent future emissions occurring. Where additional time is required to implement the appropriate corrective or preventative action the complainant will be contacted with details on the actions to be implemented and the estimated timescales for completion.
- 7.9. Should numerous complaints be received at the Site regarding the same issue, the cause of the complaint(s) will be investigated in accordance with the Accidents, Incidents & Complaints Procedure within the Site Management Plan. Operations on the Site will temporarily cease should dust emissions be seen leaving the boundary following the implementation of other mitigation measures or when instruction from the Environment Agency to cease operations has been received.

## Drawings

001	Permit Boundary Plan	Drawing No. SMLATH2103
002	Sensitive Receptors Plan	Drawing No. CCS- LATH - 74329050_1_1 – Sensitive Land Uses
003	Proposed Site Layout Plan	Drawing No. CCS-LATH 001

## Appendices

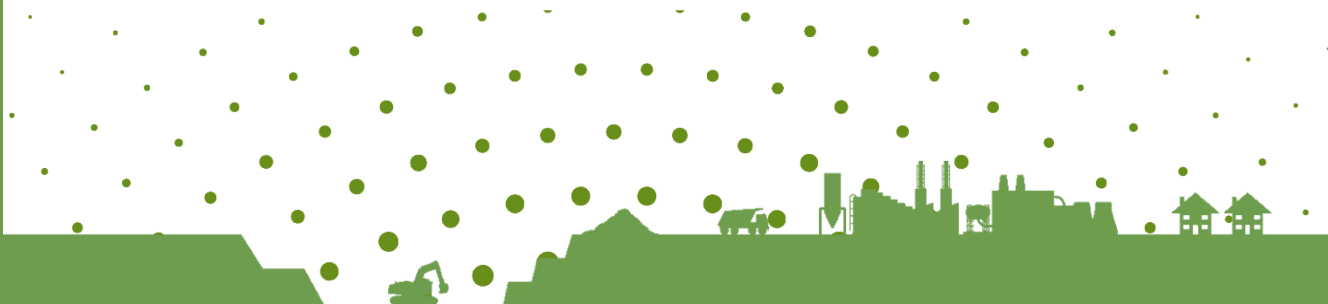
Appendix 1                      Dust Assessment, Dustscan - 00372504



# Air Quality and Dust Assessment for Proposed Sand and Gravel Extraction at Lathbury

October, 2017

Smith Aggregates Ltd







# Document Control Sheet

## Project Information

<b>Title</b>	Air Quality and Dust Assessment for Proposed Sand and Gravel Extraction at Lathbury
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D	28/09/17	Andrew Green	John Bruce	Ayan Chakravartty	Final
E	30/10/17	Andrew Green	Ayan Chakravartty	Ayan Chakravartty	Final REV

## Disclaimer

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

This report may include data obtained from trusted third party consultants/laboratories that have been supplied to us in good faith. Whilst we do everything we can to ensure the quality of all the data we use, we cannot be held responsible for the accuracy or integrity of third party data.

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# 1 Introduction

## 1.1 Overview

Smith Aggregates Limited are seeking consent for sand and gravel extraction including the importation of inert waste, restoration to agricultural use and biodiversity improvement to the land north of Northampton Road, Lathbury, Milton Keynes.

As part of the Environmental Impact Assessment (EIA) for the proposal, an air quality and dust assessment was undertaken by DustScanAQ (DS) for submission with the application.

This report was prepared with reference to the current minerals industry best practice guidance, including the National Planning Policy Framework and associated Planning Practice Guidance relating to Air Quality<sup>1</sup> and recent guidance regarding dust assessment, produced by the Institute of Air Quality Management (IAQM)<sup>2</sup> and Environmental Protection UK (EPUK) in conjunction with IAQM<sup>3</sup>.

The following activities were carried out for the assessment:

- Site visit to the planned working area and application site;
- Walkover of the surrounding area;
- Assessment of impacts from dust, fine particulate matter (PM<sub>10</sub><sup>4</sup> and PM<sub>2.5</sub><sup>5</sup>) and Heavy Goods Vehicle (HGV exhaust emissions (as NO<sub>x</sub><sup>6</sup>);
- Review of standards and controls; and
- Recommendations for dust mitigation and management.

The assessment concentrates on potential air quality and dust impacts arising from mineral extraction and restoration associated with the proposed workings.

## 1.2 Objective

The objective of the assessment is to consider potential impacts to air in relation to the pollutants identified below and potentially arising from the proposed extraction and restoration of the quarried area north of Lathbury village.

## 1.3 Key Pollutants

The key pollutants considered in this assessment are NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and disamenity dust and are discussed below.

<sup>1</sup> <http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality/>

<sup>2</sup> Institute of Air Quality Management's (2016) *Guidance on the Assessment of Mineral Dust Impacts for Planning*

<sup>3</sup> Environmental Protection UK and the Institute of Air Quality Management (2015) *Land-Use Planning & Development Control: Planning For Air Quality*

<sup>4</sup> Essentially particles less than 10 µm (micron) aerodynamic diameter

<sup>5</sup> Essentially particles less than 2.5 µm (micron) aerodynamic diameter

<sup>6</sup> Oxides of nitrogen (essentially NO and NO<sub>2</sub>)

### 1.3.1 Nitrogen dioxide (NO<sub>2</sub>)

NO<sub>2</sub> is largely associated with exhaust emissions, especially HGV traffic.

The national Air Quality Objective (AQO) for NO<sub>2</sub> is currently 40 µg/m<sup>3</sup> (micrograms per cubic metre) for the annual mean and 200 µg/m<sup>3</sup> for the hourly mean, which is not to be exceeded 18 times per year.

It is generally accepted that NO<sub>2</sub> levels approach background levels within 50 m from the road and at 100 m or more, the difference between the total concentration and the background concentration should be as close to zero as will make virtually no difference<sup>7</sup>.

### 1.3.2 Fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

PM<sub>10</sub> essentially refers to particles less than 10 µm in aerodynamic diameter and PM<sub>2.5</sub> refers to particles less than 2.5 µm in diameter.

The AQO for PM<sub>10</sub> is currently 50 µg/m<sup>3</sup> for the 24-hour mean, not to be exceeded 35 times per year, and 40 µg/m<sup>3</sup> for the annual mean. There is no AQO for PM<sub>2.5</sub>; however there is a target value of 25 µg/m<sup>3</sup> as an annual mean, to be achieved by 2020.

PM<sub>10</sub> and PM<sub>2.5</sub> are also largely associated with HGV exhaust emissions and re-suspended dust but can also arise from a wide range of sources other than traffic at minerals sites.

### 1.3.3 Disamenity dust

'Dust' is generally regarded as particulate matter up to 75 µm (micron) diameter and in an environmental context can be considered in two categories, according to size: coarser dust (essentially particles greater than 10 µm) and fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) as set out above.

Coarser dust (essentially particles greater than 10 µm) is generally regarded as 'disamenity dust' and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance<sup>8</sup>. Disamenity dust is more readily described than defined as it relates to the visual impact of short-lived dust clouds and the long-term soiling of surfaces.

Although it is a widespread environmental phenomenon, dust is also generated through many human activities including industrial and materials handling sites, construction and demolition sites and roads. Dust is generally produced by mechanical action on materials and is carried by moving air when there is sufficient energy in the airstream. More energy is required for dust to become airborne than for it to remain suspended.

Dust is removed through gravitational settling (sedimentation), washout (for example during rainfall or by wetting) and by impaction on surfaces (e.g. on vegetative screening).

<sup>7</sup> Air Quality Consultants (2008) *NO<sub>2</sub> Concentrations and Distance from Roads* (report for Defra)

<sup>8</sup> Note that the expression 'nuisance dust' refers here to 'generally visible particulate matter' rather than specifically and in a legal sense to statutory nuisance, as defined in Section 79 of the Environmental Protection Act 1990.

Dust can be re-suspended where conditions allow, such as from bare ground. Dust generation at a minerals site, its propagation and potential impacts can be considered in terms of 'source-pathway-receptor' relationships. Dust can arise from a variety of processes and locations within a site and can be difficult to quantify or attribute, especially when there are many other potential dust sources in the same locality.

The common pathway for dust propagation is by air. Dust propagation depends on particle size, wind energy and disturbance activities. Large dust particles generally travel shorter distances than small particles although dust dispersion in the vicinity of the proposed development will be affected by local factors such as weather conditions.

IAQM (2016) states that for sand and gravel quarries, dust impacts may extend up to 250 m from the source and it is commonly accepted that the greatest impacts from disamenity dust will occur within 100 m for the source. There are a number potential dust receptors within 250 m of the proposed development which are discussed below in Section 3.4.

## **1.4 Site setting**

The proposed development is located on the land north of Northampton Road, Lathbury, Milton Keynes.

The River Great Ouse runs immediately to the north of the site boundary. The site is bounded to the south by the B526 (Northampton Road) while Sherrington Road runs approximately 550 m to the east.

There is an aggregate recycling site also operated by Smith Construction along Sherrington Road, approximately 600 m from the east boundary of the proposed operations and approximately 60 m south of the proposed entrance.

The locality is largely rural with the fields bounding the site mostly used for agriculture. The nearest dwellings are at Red Brick Cottages on Northampton Road which border the field where the proposed extraction will take place. The Red Brick Cottages are rented properties which are under the same ownership as the land where the quarrying will take place. The houses will be unoccupied during the first few years of the quarry until work has been completed in the areas closest to the houses.

Lathbury Shaw is located on the south side of Northampton Road opposite Red Brick Cottages and will be the nearest occupancy when work commences (Plate 1-1).

There are a small number of properties in Lathbury village located on Northampton Road and Church Lane, south of the development.

The proposed access to the site will be via an existing field gateway onto Sherrington Road (Plate 1-2).





**Plate 1-1: Lathbury Shaw property looking from south from southern boundary of development [Source: DS]**



**Plate 1-2: Proposed site entrance looking south along Sherrington Road [Source: DS]**

## 1.5 Proposed development

Full details of the proposed development are set out elsewhere but in brief, the proposed quarry is situated on 25.59 hectares of land and will see the extraction of 650,000 tonnes of sand and gravel over a period of approximately 10 years.

The site has been divided into five areas. The mineral processing plant will be located in Area A, with mineral extraction in Area B to Area E (Drawing No. A2). Area B has been divided into two sections with the section closest to Lathbury village worked first.

The quarry will be worked in 9 stages. Stage 1 will mostly involve initial site preparation including preparing plant area and haul road. Stages 2 – 7 are the excavation stages which will see each area worked progressively. Once excavation is completed in one area, restoration will begin and the excavation will move to the next area. Stages 8 and 9 will begin after extraction is complete and will involve the final restoration of the project.

Approximately 100,000 tonnes of sand and gravel will be extracted annually with an approximate annual average of 94,000 tonnes of imported inert material used to back-fill the quarry. The extracted minerals will be transported to Milton Keynes for use in the construction industry.

The proposed site entrance will be located on Sherrington Road opposite to the entrance of the existing Smith Aggregates recycling operations (Drawing No. A1). The haul road will be approximately 600 m long with the first 30 m bound and the remainder loose bound hardcore. There is a public right of way that will cross the haul road. A crossing point will be created with appropriate signage.

The site will be restored to agricultural land with biodiversity improvement on the area north of the plant site.

All stages of the project, including final restoration, are anticipated to be completed within a 7 – 10 year period.



## 2 Legislation, Policy and non-statutory guidance

### 2.1 Overview

This section of the report sets out the relevant legislative, policy and guidance context for the assessment of the proposed development.

### 2.2 National Planning Policy Framework (NPPF)

The principal national planning policy guidance in respect of the proposed development is the National Planning Policy Framework (NPPF), which is supported by technical guidance<sup>9</sup>.

The NPPF states that when determining planning applications, local authorities should ensure that there are no unacceptable adverse impacts, including those on the natural environment or human health, and should take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in the locality.

The minerals technical guidance for the NPPF states: *“There are five key stages to a dust assessment study:*

- *establish baseline conditions of the existing dust climate around the site of the proposed operations;*
- *identify site activities that could lead to dust emission without mitigation;*
- *identify site parameters which may increase potential impacts from dust;*
- *recommend mitigation measures, including modification of site design; and*
- *make proposals to monitor and report dust emissions to ensure compliance with appropriate environmental standards and to enable an effective response to complaints.”*

This assessment has been carried out in accordance with the NPPF and the associated minerals technical guidance.

### 2.3 National Air Quality Strategy (NAQS)

The Air Quality Regulations (AQR) prescribes National AQOs to be achieved for a range of pollutants. These include NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> as set out Section 1.3.

New guidance for the minerals industry<sup>10</sup> includes a Site Assessment Flow Chart (reproduced at Figure 2.1) to determine the potential impact of proposed developments in relation to the AQO.

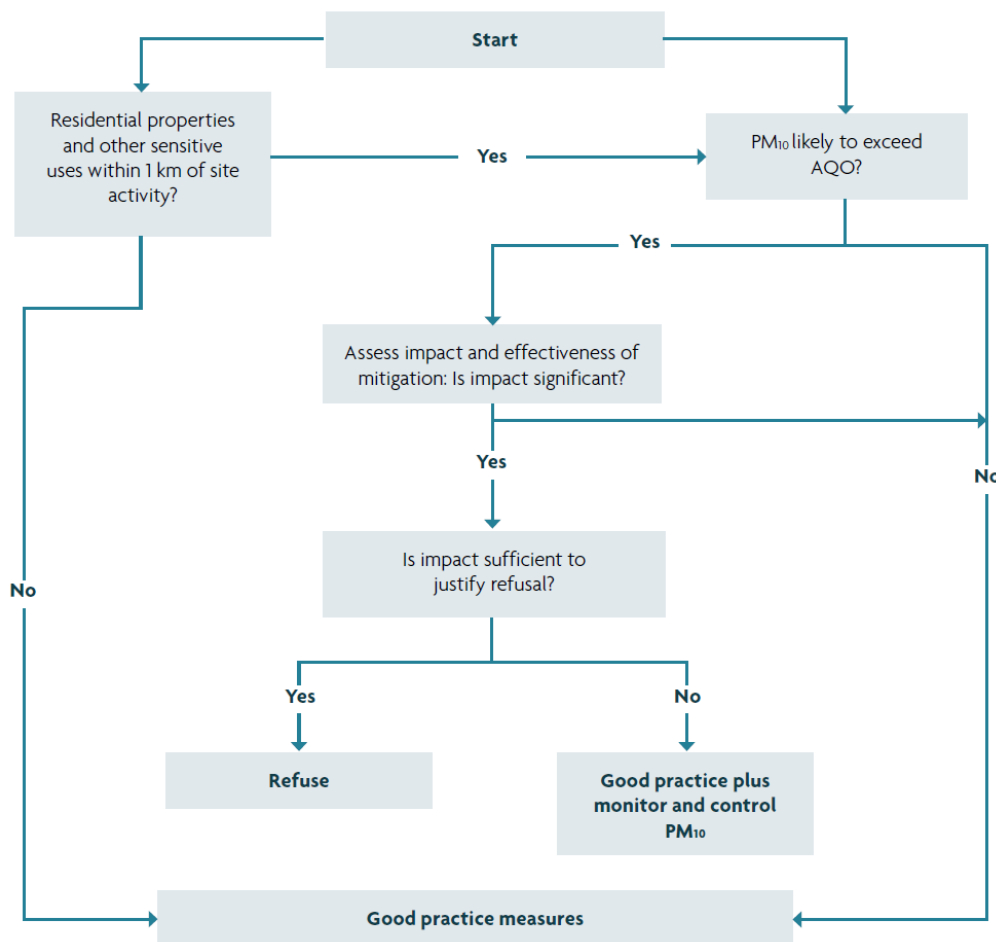
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<sup>9</sup> <https://www.gov.uk/guidance/minerals>

<sup>10</sup> IAQM (2016) *Guidance on the Assessment of Mineral Dust Impacts for Planning*

Consequently, where residential properties or other sensitive land uses are within 1 km of the actual source of emission, the potential for emissions to cause a breach of AQO should be assessed.

Where emissions from site activities are unlikely to cause a breach of AQO the site should apply good practice measures in dust management to avoid causing dust annoyance, such as set out in PGN 3/08(12)<sup>11</sup>.



**Figure 2.1: Site assessment flow chart (from National Planning Policy Guidance)**

Under AQR, local authorities are required to review the existing and projected airborne concentrations of these pollutants and compare them with the AQO. If an exceedance of any AQO appears likely, an Air Quality Management Area (AQMA) is to be designated with the aim of achieving the objective by the due date.

The local authority responsible for assessing air quality in the locality of Lathbury is Milton Keynes Council.

<sup>11</sup> Process Guidance Note (PGN) 3/08(12) *Statutory guidance for quarry processes*

## 2.4 Milton Keynes Council Regional/Local policy

The Annual Status Report (2016)<sup>12</sup> for Milton Keynes Council states that in 2015, there were no exceedances in AQOs at any monitoring locations throughout the borough. There is one AQMA in the Milton Keynes Borough which is located in Olney, more than 5 km from the proposed development.

Milton Keynes have adopted their own minerals local plan vision and strategic objectives<sup>13</sup>. A key objective outlined in the strategy is to “ensure minerals-related development and associated transport movements do not have unacceptable adverse impacts on human health and minimise adverse effects on residential amenity”.

The land north of Northampton Road, Lathbury has been included in the local minerals plan as an allocation for sand and gravel extraction.

## 2.5 Non-Statutory Guidance

There is no standard method for carrying out a dust assessment for minerals sites although IAQM (2016) and others provide guidance, as noted in Section 1.3.3.

This assessment has been carried out with reference to the new minerals guidance from IAQM, which states: “The assessment approach described here requires a degree of professional judgement from a competent and suitably experienced air quality professional in order to reach a conclusion on the overall significance of the effect. This guidance is based on the judgement of the IAQM Minerals Guidance Working Group. The IAQM does not expect practitioners to follow the suggested approach in all circumstances.”

The assessment has also been carried out with reference to previous guidance for the minerals industry and other sectors including, but not limited to Arup Environmental (1995)<sup>14</sup>, AEA Technology (2010)<sup>15</sup> and EPUK and IAQM (2015)<sup>16</sup>.

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<sup>12</sup> Milton Keynes Council 2016 Air Quality Annual Status Report

<sup>13</sup> Milton Keynes Minerals Local Plan (2017)

<sup>14</sup> Arup Environmental (1995) *The Environmental Effects of Dust from Surface Mineral Workings*

<sup>15</sup> AEA Technology (2010) *Management, mitigation and monitoring of nuisance dust and PM<sub>10</sub> emissions arising from the extractive industries: an overview*

<sup>16</sup> EPUK and IAQM (2015) *Land-Use Planning & Development Control: Planning For Air Quality*

## **3 Methodology**

### **3.1 Overview**

This section of the report sets out the methodology followed for the assessment, which considers potential impacts arising from the key pollutants and residual source emissions (i.e. after mitigation) set out in Section 1.3.

### **3.2 Scope of Assessment**

This section outlines the temporal and spatial aspects of the proposed development.

#### **3.2.1 Temporal scope**

The effects of the extraction phase resulting from the proposed development have been considered for the earliest opening year of 2017 until 2025. As stated in Section 1.5, all workings are expected to be completed within a 7 - 10 year period.

#### **3.2.2 Spatial scope**

The development site will cover 23.28 ha and has been divided into five working areas as set out in Drawing No. A2 in Appendix A. The site will be worked in a series of phases which are set out in full elsewhere.

### **3.3 Meteorological Data**

Weather conditions can have a significant effect on the potential for dust propagation from a minerals site. Wind speed (and direction) and precipitation are of particular importance and dust can be carried from a source towards receptors (such as nearby homes and other businesses) according to the strength and direction of wind.

Precipitation is recognised to suppress dust and 0.2 mm of antecedent rainfall is considered sufficient to suppress windblown dust for a number of hours.

### **3.4 Receptors**

Dust receptors can be within or beyond the quarry boundaries. Whilst dust generation within a minerals site is primarily of concern to its operator, staff and visitors, dust can propagate beyond the site boundary to affect people and properties beyond, unless adequate control measures are in place. It is important to recognise that there may be other dust sources in the vicinity of a quarry (such as road traffic or arable farmland).

As IAQM (2016) states in Section 2.5 above, adverse impacts from sand and gravel extraction is uncommon beyond 250 m. Consequently, relevant receptors within 250 m of the proposed development have been considered for this assessment as summarised in Table 3.1 below. Full details are set out in Table A 1 - Table A 10 in Appendix A.

**Table 3.1: Summary of receptor locations potentially affected by dust from the proposed sand and gravel extractions and restoration at Lathbury**

<b>Receptor</b>	<b>Easting</b>	<b>Northing</b>
Lane End House	487654	245291
Home Farm	487702	245269
The Thatched Barn	487720	245283
Taybarn	487737	245275
Lathbury Manor	487661	245241
1 Northampton Road	487692	245242
2 Northampton Road	487702	245234
3 Northampton Road	487709	245227
4 Northampton Road	487717	245220
5 Northampton Road	487722	245207
Thatched Cottage	487745	245230
Tollgate House	487754	245209
The Beeches	487629	245236
2a Church Lane	487610	245220
4 Church Lane	487610	245201
The Cottages	487605	245190
Terracotta	487595	245176
Coach House Cottage	487590	245164
The Old Rectory	487578	245138
Kirkfield	487552	245101
Lathbury Shaw	487502	245454
Red Brick Cottages	487553	245484

As discussed in Section 1.4, the two dwellings at Red Brick Cottages located on the southern boundary of the development are understood to be in the same ownership as the land at which the development will take place. The Red Brick Cottages will not be occupied while work is carried out on Area B and Area C. In order to alleviate the landowners concern of leaving these properties empty for the entire duration of the development, the soil bund will be moved to the southern boundary of Area D and E after work at Area B and Area C is complete. This is anticipated to be approximately 5 years into the development, after which it is suggested that the Red Brick Cottages may be occupied again. Consequently, the impacts of residual source emissions on the Red Brick Cottages after Area D and E are restored are thought to not be significant.

There are no Sites of Special Scientific Interest (SSSI) in close proximity of the proposed development with the nearest SSSI more than 5 km away. Consequently, environmental receptors have scoped out of this assessment.

### 3.5 Assessment Criteria

The assessment has been carried out with reference to relevant guidance, including IAQM (2016). Key tables and figures from that guidance are reproduced below.

#### 3.5.1 NO<sub>2</sub>

Current guidance<sup>17</sup> suggests that a change in traffic movements of 100 HGV movements per day (or 25 within or adjacent to an AQMA) can be an indicative trigger level for when the operational traffic of a development could have a significant effect on air quality. In effect, NO<sub>2</sub> could be scoped out of a detailed assessment if vehicle movements were below the indicative threshold.

In addition, NO<sub>2</sub> can be associated with exhaust emissions from Non-Road Mobile Machinery (NRMM). Recent guidance for the construction industry states that these are unlikely to make a significant impact on local air quality, and in the vast majority of cases will not need to be quantitatively assessed<sup>18</sup>.

On average, the development would generate 90 additional HGV movements (45 in, 45 out) per working day (5 ½ days per week). This equates to 70 per day as an annual average of daily traffic (AADT). HGV traffic associated with the quarry would likely turn left onto Sherrington Road and via Chicherly Hill to the A509 and therefore is not be anticipated to pass through the centre of Lathbury village. Most of the HGV traffic will travel south to Milton Keynes and therefore are not anticipated to travel through the AQMA in Olney. Consequently, the effect of HGVs from the Lathbury development on the NO<sub>2</sub> AQO for the AQMA in Olney will be negligible.

Therefore, on the basis that NO<sub>2</sub> emissions from the proposed workings would be unlikely to have a significant impact on the AQO for NO<sub>2</sub> for Milton Keynes Council, NO<sub>2</sub> has been scoped out from a detailed assessment.

#### 3.5.2 PM<sub>10</sub>

From Section 1.3.2, PM<sub>10</sub> can be associated with HGV and NRMM exhaust emissions but, as with NO<sub>2</sub>, could be scoped out of a detailed assessment if there were a change of less than 100 HGV movements per day (or 25 within or adjacent to an AQMA).

With regard to PM<sub>10</sub> emissions from the proposed quarry, one approach is that the potential impacts on AQO can be determined by comparing the total predicted environmental concentration (PEC) of PM<sub>10</sub> estimated to arise from the proposed operations with the annual mean objective. The PEC can be determined by combining the existing background ambient concentration (AC) and the expected process contribution (PC).

The AC for PM<sub>10</sub> can be determined from publicly available monitoring data or, where this is not representative, site-specific monitoring data. For the purposes of this report, the publicly-available data are considered representative; these include the Defra national

<sup>17</sup> Environmental Protection UK (EPUK) 2012 Development Control: Planning for Air Quality (2010 Update)

<sup>18</sup> IAQM (2014) *Guidance on the assessment of dust from demolition and construction*

annual estimated average background concentrations, which are determined for every local authority in the UK at 1 × 1 km grid square resolution<sup>19</sup>.

The new IAQM guidance states at Section 5.2: *'If the long term background PM<sub>10</sub> concentration is less than 17 µg/m<sup>3</sup> there is little risk that the Process Contribution (PC) would lead to an exceedance of the annual-mean objective and such a finding can be put forward qualitatively, without the need for further consideration, in most cases.'*

The PC for the proposed operation, the consequent PEC and resultant impacts on the AQO for PM<sub>10</sub> arising from the proposed quarry are considered further below.

### 3.5.3 PM<sub>2.5</sub>

From Section 1.3.2, PM<sub>2.5</sub> can be associated with HGV and NRMM exhaust emissions but, as with NO<sub>2</sub> and PM<sub>10</sub>, could be scoped out of a detailed assessment if there were a change of less than 100 HGV movements per day (or 25 within or adjacent to an AQMA).

### 3.5.4 Disamenity dust

From Section 1.3.3, it is recognised that dust impacts reduce with distance. IAQM suggest that mineral dust assessments are carried out in relation to 3 distance criteria, as reproduced in Figure 3.1. These criteria have been applied to this assessment.

Category	Criteria
Distant	Receptor is between 200 and 400m from the dust source
Intermediate	Receptor is between 100 and 200m from the dust source
Close	Receptor is less than 100 m from the dust source

**Figure 3.1: Categorisation of receptor distance from source (from IAQM, 2016)**

In addition from Section 1.3.3, wind speed is recognised to affect dust propagation. The IAQM guidance (2016) suggests a range of wind speed criteria, as reproduced in Figure 3.2. These wind speed criteria have been applied to this assessment.

<sup>19</sup> <http://iaqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>



Frequency Category	Criteria
Infrequent	Frequency of winds (>5 m/s) from the direction of the dust source on all days are less than 5%
Moderately frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are between 5% and 12%
Frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are between 12% and 20%
Very frequent	The frequency of winds (>5 m/s) from the direction of the dust source on dry days are greater than 20%

**Figure 3.2: Categorisation of frequency of potentially dusty winds (from IAQM, 2016)**

IAQM (2016) suggest that the ‘risk’ of dust impact may be assessed by considering the pathway effectiveness (from Figure 3.2) with the residual source emissions. This approach has been followed for this assessment; the residual source emissions for the identified operations at the site are set out below.

As stated by IAQM (2016), estimation of residual source emissions is a matter of professional judgement based on knowledge of the site and its locality, the processes involved and how these might relate to corresponding activities at other minerals sites.

Consequently, it should be recognised that these are wide ranging and therefore not prescriptive criteria and, as with all other aspects of dust assessment for minerals sites rely on professional judgement based on the experience of the assessor.

IAQM (2016) suggest that the pathway effectiveness and residual source emissions may be combined to determine the dust risk, as shown in Figure 3.3.

		Residual Source Emissions		
		Small	Medium	Large
Pathway Effectiveness	Highly effective pathway	Low Risk	Medium Risk	High Risk
	Moderately effective pathway	Negligible Risk	Low Risk	Medium Risk
	Ineffective pathway	Negligible Risk	Negligible Risk	Low Risk

**Figure 3.3: Estimation of dust impact risk (from IAQM, 2016)**

From this, the magnitude of dust impacts may be evaluated by combining the dust risk with the receptor sensitivity (noted in Section 3.4), as shown in Figure 3.2. This approach has been followed for this assessment.



		Receptor Sensitivity		
		Low	Medium	High
Dust impact risk	High Risk	Slight Adverse Effect	Moderate Adverse Effect	Substantial Adverse Effect
	Medium Risk	Negligible Effect	Slight Adverse Effect	Moderate Adverse Effect
	Low Risk	Negligible Effect	Negligible Effect	Slight Adverse Effect
	Negligible Risk	Negligible Effect	Negligible Effect	Negligible Effect

**Figure 3.4: Descriptors for magnitude of dust effects (from IAQM, 2016)**

Consequently, from the IAQM (2016) guidance an assessment of the potential severity of dust impacts associated with the proposed development may be determined.

As stated in Section 1.3.3, there are no official standards (such as AQO) for disamenity dust. In the absence of standards a range of methods has been developed to assess visible dust. The two principal approaches are based either on measurement of the mass of settled dust or the assessment of change in the properties of a surface such as its loss of reflectance or discolouration ('soiling') on a glass microscope slide or adhesive 'sticky pad'.

'Custom and practice' thresholds for dust annoyance are commonly applied to these methods and minerals industry guidance recommends that site-specific thresholds should be agreed between the site operator and the regulator, as these will be appropriate for both the site and its surroundings<sup>20</sup>.

The results of the assessment for disamenity dust are set out in Section 5.2 below.

### 3.6 Uncertainties, limitations and assumptions

As stated in Section 2.5, there is no standard method for carrying out a minerals dust assessment and new guidance (IAQM, 2016) recognises the need for professional judgement in carrying out such an assessment. Consequently, an uncertainty associated with any minerals dust assessment is that the assessor's judgement is appropriate.

A limitation of any assessment is that it is carried out without the development in place, i.e. as a future scenario. Consequently, it is not possible to make any quantification of the potential impacts although every effort has been made to accurately assess any potential impact of the development.

A limitation of this assessment is that it has been carried out with reference to weather data from beyond the site boundary. This is in accordance with the IAQM (2016)

<sup>20</sup> AEA Technology (2010). *Management, mitigation and monitoring of nuisance dust and PM<sub>10</sub> emissions arising from the extractive industries: an overview*

guidance. The weather data used for the assessment were provided by a recognised supplier, from the nearest available location to the site, and as recommended by the supplier.

It is assumed that the site will be developed and operated as described for the purposes of this assessment.

It is assumed that the dust mitigation measures outlined herein will be formally adopted into a Dust Management Plan (DMP) once planning consent has been granted, and that the mitigation measures will be applied as recommended, and consequently that the residual source emission values determined in this assessment will be realistic estimates of dust emissions associated with the operations described.

## 4 Baseline Conditions

### 4.1 Overview

This section sets out local air quality data and weather for the site of the proposed development and baseline dust data collected from an equivalent site.

### 4.2 Local Air Quality Defra Background Concentrations

The local background concentrations have been taken from Defra<sup>21</sup> with 2013 used as the baseline and 2025 used as the earliest anticipated completion of the proposed work.

#### 4.2.1 PM<sub>10</sub>

The estimated PM<sub>10</sub> concentrations for 2013, 2017, 2020 and 2025 for the grid squares nearest to the Lathbury development are set out in Table 4.1 below. The table shows background levels are below the AQO for PM<sub>10</sub>.

Table 4.1: Defra background PM<sub>10</sub> concentrations

Grid Reference		PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )			
easting	northing	2013	2017	2020	2025
487500	246500	16.29	15.54	15.15	14.92
487500	245500	16.44	15.68	15.29	15.06
<b>Average</b>		<b>16.37</b>	<b>15.61</b>	<b>15.22</b>	<b>14.99</b>

From Section 3.5.2, where the background PM<sub>10</sub> concentrations are below 17 µg/m<sup>3</sup>, it is considered that there is little risk that the annual mean would be exceeded. Therefore, PM<sub>10</sub> has been scoped out of a detailed assessment.

#### 4.2.2 PM<sub>2.5</sub>

Table 4.2 sets out the estimated PM<sub>2.5</sub> concentrations for the same area.

Table 4.2: Defra background PM<sub>2.5</sub> concentrations

Grid Reference		PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )			
easting	northing	2013	2017	2020	2025
487500	246500	11.45	10.78	10.45	10.25
487500	245500	11.59	10.91	10.57	10.37
<b>Average</b>		<b>11.52</b>	<b>10.84</b>	<b>10.51</b>	<b>10.31</b>

The table shows PM<sub>2.5</sub> Defra background concentrations were well below the 2020 target level for PM<sub>2.5</sub> (20 µg/m<sup>3</sup>). Consequently, the proposed sand and gravel extraction at Lathbury would be very unlikely to have any significant effect on PM<sub>2.5</sub> concentrations. Therefore, PM<sub>2.5</sub> has been scoped out of a detailed assessment.

<sup>21</sup> <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013>

### **4.3 On-site Baseline**

Site specific data has been used from an existing sand and gravel quarry similar to the proposed development to give an indication of the disamenity dust emissions that could be experienced from the proposed development near Lathbury.

#### **4.3.1 Disamenity dust**

Dust monitoring data from a similar sand and gravel quarry has been applied to assess baseline conditions and the potential impact of disamenity dust on residents.

Directional dust samples were collected at the existing quarry at two monitoring points over weekly intervals. One sampler was located on the south eastern boundary while a second was located approximately 100 m south east of the site on the boundary of a high sensitivity receptor.

Dust monitoring around the existing quarry showed 'Very Low' risks of disamenity from the direction of the site. It can therefore be summarised that the dust monitoring demonstrates negligible impacts on the closest receptors to the quarry and the current management of dust at the existing quarry is working well to limit dust propagation towards nearby residences.

The proposed quarry on the land north of Northampton Road, Lathbury is anticipated to be run in a similar manner to the quarry used for the baseline study. Consequently, if similar mitigation and dust management measures are applied at the proposed operations at Lathbury, adverse impacts from disamenity dust towards the nearest receptors are anticipated to be negligible.

#### **4.3.2 Weather**

A wind rose for Bedford (the nearest available reporting station to Lathbury with sufficient data), approximately 4 km to the north-east of the site) for 'dry' hours<sup>22</sup> winds (for 2012 – 2016) is presented at Figure 4.1.

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<sup>22</sup> 'Dry' hours are those with less than 0.2 mm liquid equivalent precipitation and are associated with an increased risk of dust propagation.

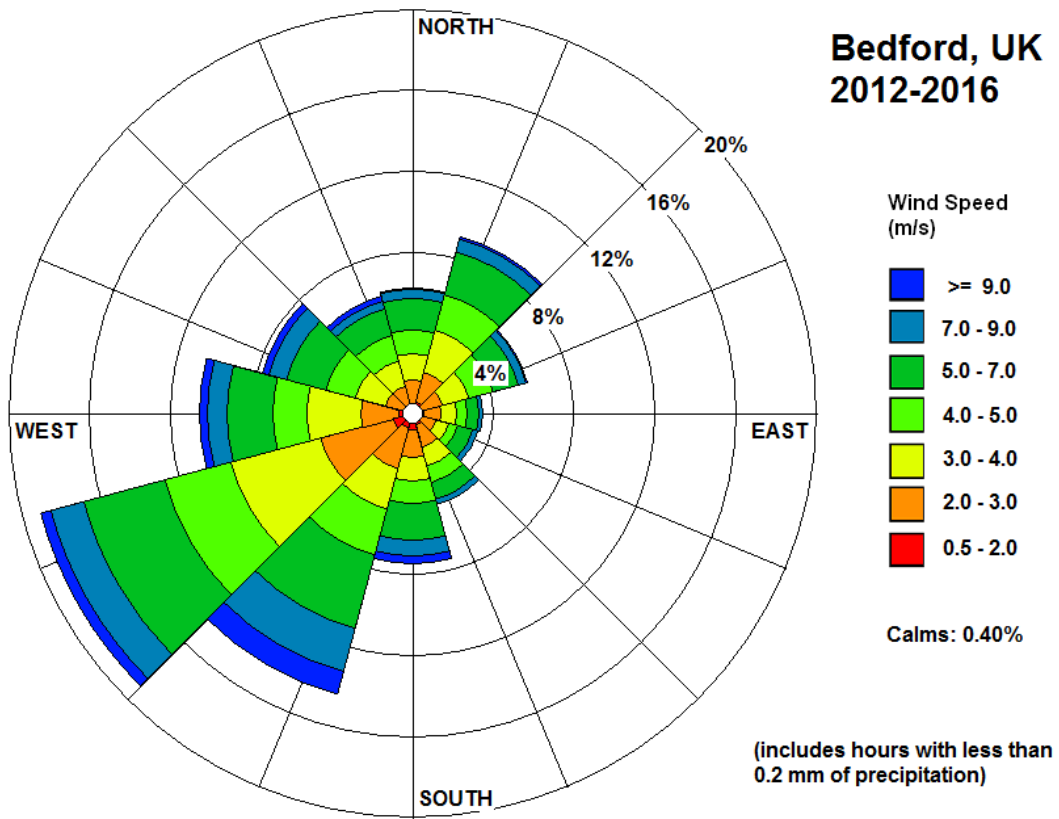


Figure 4.1: 5-year average wind rose, Bedford, 2012 - 2016

## 5 Potential Impacts

### 5.1 Overview

This section outlines the potential impact on air quality of individual operations at the proposed development along with the cumulative impact of existing dust sources in the locality.

#### 5.1.1 Disamenity dust

There are potential receptors within 100 m of the proposed working area at Lathbury. Therefore, disamenity dust has been scoped in to this report.

There is a potential for dust emissions to occur at various stages of the operation, but these can generally be controlled by good practice measures, formalised in a dust management plan (DMP). The potential dust sources from operations where mitigation is presumed to have been applied is known as residual dust emissions. Potential sources or site activities likely to give rise to dust to the proposed quarry at Lathbury are:

- Soil stripping, soil storage and reinstatement;
- Overburden removal, storage and reinstatement (including backfill with inert material);
- Mineral extraction and loading into dump trucks, and tipping;
- Mineral processing;
- Mobile plant (both on-site and off-site vehicle movements), and
- Wind scouring of exposed surfaces and stockpiles.

The potential dust sources at Lathbury are considered below, setting out both the potential for emissions and recommended mitigation methods in Section 6. From these, the determined residual source emissions are stated per activity and are set out in Table 5.1 below.

**Table 5.1: Residual source emissions**

Activity	Residual source emission
Soil stripping, storage and replacement	Medium
Overburden removal, storage and reinstatement including backfill with quarry waste and inert materials	Medium
Mineral extraction (and handling)	Small
Mobile plant and on-site haulage	Medium
Off-site haulage	Medium
Wind-whip from bare ground and exposed surfaces (including stockpiles)	Medium

Note that for certain processes (e.g. soil, overburden and inert fill handling) consideration is by necessity generic, in that they apply to that process wherever it takes place within the proposed development but at different locations according to phasing.

Other operations, such as mineral processing, are more specific, in that they will take place at one location (in this case, at the proposed plant site set out in (Drawing No. A2) irrespective of phasing.

The results of the assessment for disamenity dust are set out in Section 5.2.

### **Soil stripping, storage and reinstatement**

There is potential for high levels of dust emissions from soil stripping, storage and reinstatement although these are generally short-term, transient operations.

Soils would be removed progressively according to operational phasing and either stored or used directly for restoration, and as set out in Table 5.1, the residual source emissions from soil stripping, storage and reinstatement are considered to be no greater than Medium.

### **Overburden removal, storage and reinstatement (including inert fill)**

There is potential for moderate to high levels of dust emissions during overburden handling, storage and replacement, although overburden can usually be worked at higher moisture contents than soils thus reducing the risk of unacceptable dust emissions.

The risks of dust emission from quarry waste and inert material will vary according to the nature of the materials handled. There is a relatively low risk of dust emission from freshly-excavated subsoil whereas there can be a high risk of wind-blow from dry, unconsolidated materials.

As set out in Table 5.1, the residual source emissions from overburden removal, storage and reinstatement (including backfill with quarry waste and inert materials) are considered to be no greater than Medium.

### **Mineral extraction (and handling)**

There is a low risk of airborne dust propagation emissions from mineral extraction as set out in Table 5.1, and the residual source emissions are considered to be Small.

### **Mineral processing**

In general, the risk of airborne dust propagation from mineral processing depends on the process involved. Without mitigation, there is a high potential for dust emissions from crushing and screening and there is also a high risk of dust emissions from open conveyors, at transfer points and at conveyor discharge points onto stockpiles.

The residual source emissions from mineral processing at the new plant site are typically considered to be Medium however there are no high sensitivity receptors within 250 m of

the proposed plant site. Consequently, the residual source emissions from mineral processing are considered negligible and have been scoped out of further assessment.

### **Mobile plant and on-site haul roads**

The greatest risk of dust from mineral workings is often considered to be associated with site traffic. The site will be accessed through an unpaved haul road which will be located to the east of the site to connect to Sherrington Road. There is a high risk of dust emissions from transport on unpaved roads unless appropriate mitigation measures are applied.

As set out in Table 5.1, the residual source emissions from mobile plant and on-site haul roads are considered to be no greater than Medium.

### **Off-site haulage**

It is understood the HGV access route would take quarry traffic north via the Sherrington Road and would avoid passing through Lathbury village. As set out in Section 1.5, the site haul road will be unpaved. Without mitigation, there is a potential high risk for dust emissions from trackout onto access roads.

As set out in Table 5.1, the residual source emissions from off-site haulage are considered to be Medium.

### **Wind-whip from bare ground and exposed surfaces**

There is a moderate risk of wind-blown dust propagation from dry surface layers of stripped surfaces, freshly-constructed soil storage bunds prior to seeding and from bare ground. Stockpiles will be stored next to the plant area and at least 250 m from any high sensitivity receptor.

As set out in Table 5.1, the residual source emissions for wind-whip from bare ground and exposed surfaces are considered to be no greater than Medium.

## **5.2 Potential Impacts**

This section sets out the potential impacts of the proposed development which have been determined by means of the method outlined by IAQM (2016).

The potential impacts of the development for each dust source location on high sensitivity receptors are set out in Table A 1 - Table A 5. Each dust source has been considered for the potential receptors within 250 m of any part of the proposed development.

Table A 1 - Table A 5 shows that all of the high sensitivity receptors identified could potentially be affected by dust from operations at Area B. There are several properties to the north of Lathbury village which could be affected by dust from operations at Area E and from off-site haulage on the site access road.



Lathbury Shaw is the only receptor that is considered likely to be affected by dust from operations at Area C or Area D.

The Dust Impact Risk and Magnitude of Dust Effects for the potential impacts have been calculated using the IAQM (2016) criteria set out in Section 3.5.4. The results are set out in Table A 6 - Table A 10 below.

Table A 6 - Table A 10 show the magnitude of dust effects could be up to slight adverse effects on Thatched Barn and Taybarn from soil-stripping, storage and replacement, overburden removal and wind-scouring of exposed surfaces at Area D, on-site haulage at Area D and off-site haulage from the site access road. Soil stripping, overburden removal, on-site haulage and wind-scouring at Area C could also be affected by a slight adverse effect of dust on Lathbury Shaw.

The assessment shows that any impact from dust will most likely occur from operations at Area B and Area D. Impacts from individual dust sources are not considered to be greater than a slight adverse effect on relevant receptors.

Consequently, the assessment shows that provided the mitigation measures proposed are applied by means of a DMP, there would be no greater than slight adverse impacts at any offsite receptor from disamenity dust associated with this development.

With reference to the IAQM (2016) minerals dust guidance the overall impact of the development is therefore considered to be not significant.

### **5.3 Cumulative Impacts**

Existing dust sources in the locality could increase the magnitude of dust effects through cumulative impacts. An aggregates recycling site also operated by Smith Construction is located on Sherrington Road to the east of Lathbury village and the site entrance of the facility is within 60 m of the proposed site entrance to Lathbury quarry. The east boundary of the Lathbury development site is approximately 600 m away from the Smith Aggregate recycling site.

There are no high sensitivity receptors within 250 m of both site boundaries. NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> have been scoped out a detailed assessment for Lathbury quarry as the impacts are deemed to be negligible.

Consequently, cumulative impacts on the AQO for Milton Keynes council and disamenity dust impacts are considered unlikely to be significant.

## **6 Mitigation**

### **6.1 Overview**

This section sets out the mitigation plan for each of the dust sources assessed in Section 5.

### **6.2 Dust Management Plan (DMP)**

As set out in Section 5.1.1, there is a potential for dust emissions to occur at various stages of the operation, but these can generally be controlled by good practice. The mitigation for the potential dust sources and activities identified above are set out in the section below.

#### **6.2.1 Soil stripping, storage and reinstatement**

Unacceptable dust emissions from soil stripping, storage and reinstatement can be controlled by minimising working of soil in very dry, windy conditions, by reducing drop heights at material transfer points and controlling vehicle speeds.

Additional control measures, such as wetting down with a water bowser, should be considered where there is a risk of wind-blow across the site boundary towards off-site receptors.

#### **6.2.2 Overburden removal, storage and reinstatement (including inert fill)**

As with soils, working of overburden, quarry waste and inert backfill materials near the site boundary should be minimised in very dry, windy conditions. Drop heights should be minimised at material transfer points (e.g. during loading and tipping). Operations should be suspended when wind conditions would be likely to result in visible dust being carried towards off-site receptors.

As with soils, additional measures such as wetting down with a water bowser should be considered where there is a risk of wind-blow across the site boundary.

#### **6.2.3 Mineral extraction (and handling)**

Given the extracted material will be worked wet, there is a very low risk of dust emission from mineral extraction at Lathbury however additional control measures (such as wetting down with a water bowser) should be considered if there is a risk of visible dust from the extraction faces being blown over the site boundary towards off-site receptors.

#### **6.2.4 Mineral Processing**

There is a risk of dust emissions from open conveyors, transfer points and at conveyor discharge points onto stockpiles although dust emissions from mobile screening plant can be minimised by locating the plant at a sheltered location within the quarry void whenever possible.

Any dust control measures fitted to the mineral processing plant should be kept in good operational order and in accordance with the manufacturers' instructions. The conveyors

should be covered. Return belt scrapers should be fitted and arisings should be collected and disposed of appropriately.

In addition, the mobile screening plant should be located at least 250 m from the nearest receptor.

### **6.2.5 Mobile plant and on-site haul roads**

Dust may be generated from downward-blowing exhausts and cooling fans, so only mobile plant that avoids such risks with upward or sideways exhausts should be used. All site haulage should keep to designated haul routes.

Vehicles leaving the site should be sheeted and be checked for loose deposits that could fall onto the public highway. Any spillages should be cleared as quickly as possible by appropriate means to prevent unnecessary track-out onto the public highway. All HGVs leaving the site should pass through the wheel wash.

A water bowser should be used for damping down roads around the plant area and quarry. Unmade access roads should be kept in good repair and vehicle speed limits should be determined by the Quarry Manager according to the site and weather conditions pertaining at the time.

### **6.2.6 Off-site haulage**

The surface of the new access route should be maintained to a high standard and regularly swept to ensure dust levels are kept to a minimum.

HGVs leaving Lathbury should be sheeted before joining Sherrington Road. An on-site wheel wash should be considered to reduce trackout.

Vehicles should be checked for loose deposits that might fall onto the public highway and spillages should be cleared as quickly as possible to reduce track-out. A powered road sweeper should be made available (such as by contract hire) to ensure that track-out onto the Sherrington Road is cleared immediately.

### **6.2.7 Wind-scouring of exposed surfaces**

Dust emissions from exposed surfaces can be minimised by wetting down with a water bowser as necessary, especially in periods of dry, windy weather.

Where practicable, stockpiles should be managed to maintain a smooth profile to minimise the spreading of loose materials and should be disturbed as little as possible to encourage the formation and stabilisation of a surface crust.

Where possible, conveyor discharge heights should be adjusted to minimise drop heights. It might be necessary to wet down stockpiled mineral to reduce the risk of wind-blow from exposed surfaces.

## 7 Conclusion

Smith Aggregates Limited is seeking consent for sand and gravel extraction including importation of inert waste and restoration to agricultural use and biodiversity on the land north of Northampton Road, Lathbury, Milton Keynes.

This assessment was carried out by competent professionals and with appropriate reference to relevant policy and guidance.

The assessment considered the potential impacts on the Air Quality Objectives (AQO) and 'nuisance' or 'disamenity' dust arising from the proposed development near Lathbury.

The assessment found that HGV movements will be less than 100 per day and most of the traffic is unlikely to pass through an AQMA. PM<sub>10</sub> Defra modelled background concentrations for the locality were below 17 µg/m<sup>3</sup> while Defra modelled background PM<sub>2.5</sub> levels were well below the 2020 target value of 20 µg/m<sup>3</sup>. Therefore, the assessment found that there would be essentially no adverse impacts on the AQO either from traffic-related emissions or quarry operations arising from the proposal, and thus were not significant. Consequently, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> were scoped out of a detailed assessment.

The assessment found that provided appropriate mitigation measures are adopted at Lathbury quarry, there would be no more than a slight adverse impact at any relevant receptors. The overall impact of the development is considered to be not significant.

Consequently, this assessment shows that the proposed development for sand and gravel extraction and restoration on the land north of Northampton Road, Lathbury, can be operated in a manner unlikely to cause adverse air quality or dust impacts in its vicinity.

**DustScanAQ**  
**August 2017**

## APPENDIX A

**Table A 1: High sensitivity receptors potentially affected by dust from soil stripping, storage and replacement**

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Lane End House	Area B	35	Close	Moderate	345 - 15
Home Farm	Area B	65	Close	Moderate	315 - 15
The Thatched Barn	Area B	70	Close	Moderate	315 - 15
Taybarn	Area B	90	Close	High	315 - 15
Lathbury Manor	Area B	70	Close	High	345 - 15
1 Northampton Road	Area B	95	Close	High	345 - 15
2 Northampton Road	Area B	105	Intermediate	High	345 - 15
3 Northampton Road	Area B	125	Intermediate	High	345 - 15
4 Northampton Road	Area B	135	Intermediate	High	345 - 15
5 Northampton Road	Area B	140	Intermediate	High	345 - 15
Thatched Cottage	Area B	120	Intermediate	High	315 - 345
Tollgate House	Area B	155	Intermediate	High	315 - 345
The Beeches	Area B	85	Close	High	345 - 15
2a Church Lane	Area B	115	Intermediate	High	345 - 15
4 Church Lane	Area B	130	Intermediate	High	345 - 15
The Cottages	Area B	135	Intermediate	High	345 - 15
Terracotta	Area B	150	Intermediate	High	345 - 15

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Coach House Cottage	Area B	170	Intermediate	High	345 - 15
The Old Rectory	Area B	190	Intermediate	High	345 - 15
Kirkfield	Area B	240	Distant	High	345 - 15
Lathbury Shaw	Area B	45	Close	High	45 - 135
Lathbury Shaw	Area C	50	Close	High	345 - 45
Lane End House	Area D	205	Distant	Moderate	345 - 45
Home Farm	Area D	205	Distant	High	345 - 45
The Thatched Barn	Area D	170	Intermediate	High	345 - 45
Taybarn	Area D	185	Intermediate	High	345 - 45
Lathbury Manor	Area D	235	Distant	High	15 - 45
1 Northampton Road	Area D	235	Distant	High	15 - 45
2 Northampton Road	Area D	235	Distant	High	15 - 45
3 Northampton Road	Area D	240	Distant	High	15 - 45
Thatched Cottage	Area D	225	Distant	High	345 - 15
Tollgate House	Area D	240	Distant	High	345 - 15
Lathbury Shaw	Area D	180	Intermediate	High	45 - 75
Lathbury Shaw	Area E	180	Intermediate	High	15 - 45

**Table A 2: High sensitivity receptors potentially affected by dust from overburden removal and wind-whip of dry surfaces**

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Lane End House	Area B	45	Close	Moderate	345 - 15
Home Farm	Area B	75	Close	Moderate	315 - 15
The Thatched Barn	Area B	80	Close	Moderate	315 - 15
Taybarn	Area B	100	Intermediate	High	315 - 15
Lathbury Manor	Area B	80	Close	High	345 - 15
1 Northampton Road	Area B	105	Intermediate	High	345 - 15
2 Northampton Road	Area B	115	Intermediate	High	345 - 15
3 Northampton Road	Area B	135	Intermediate	High	345 - 15
4 Northampton Road	Area B	145	Intermediate	High	345 - 15
5 Northampton Road	Area B	150	Intermediate	High	345 - 15
Thatched Cottage	Area B	130	Intermediate	High	315 - 345
Tollgate House	Area B	165	Intermediate	High	315 - 345
The Beeches	Area B	95	Close	High	345 - 15
2a Church Lane	Area B	125	Intermediate	High	345 - 15
4 Church Lane	Area B	140	Intermediate	High	345 - 15
The Cottages	Area B	145	Intermediate	High	345 - 15
Terracotta	Area B	160	Intermediate	High	345 - 15
Coach House Cottage	Area B	180	Intermediate	High	345 - 15

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
The Old Rectory	Area B	200	Distant	High	345 - 15
Kirkfield	Area B	250	Distant	High	345 - 15
Lathbury Shaw	Area B	55	Close	High	45 - 135
Lathbury Shaw	Area C	60	Close	High	345 - 45
Lane End House	Area D	205	Distant	Moderate	345 - 45
Home Farm	Area D	215	Distant	High	345 - 45
The Thatched Barn	Area D	180	Intermediate	High	345 - 45
Taybarn	Area D	195	Intermediate	High	345 - 45
Lathbury Manor	Area D	245	Distant	High	15 - 45
2 Northampton Road	Area D	245	Distant	High	15 - 45
3 Northampton Road	Area D	250	Distant	High	15 - 45
Thatched Cottage	Area D	235	Distant	High	345 - 15
Tollgate House	Area D	250	Distant	High	345 - 15
Lathbury Shaw	Area D	180	Intermediate	High	45 - 75
Lathbury Shaw	Area E	180	Intermediate	High	15 - 45



**Table A 3: High sensitivity receptors potentially affected by dust from mineral extraction (and handling)**

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Lane End House	Area B	45	Close	Moderate	345 - 15
Home Farm	Area B	75	Close	Moderate	315 - 15
The Thatched Barn	Area B	80	Close	Moderate	315 - 15
Taybarn	Area B	100	Intermediate	High	315 - 15
Lathbury Manor	Area B	80	Close	High	345 - 15
1 Northampton Road	Area B	105	Intermediate	High	345 - 15
2 Northampton Road	Area B	115	Intermediate	High	345 - 15
3 Northampton Road	Area B	135	Intermediate	High	345 - 15
4 Northampton Road	Area B	145	Intermediate	High	345 - 15
5 Northampton Road	Area B	150	Intermediate	High	345 - 15
Thatched Cottage	Area B	130	Intermediate	High	315 - 345
Tollgate House	Area B	165	Intermediate	High	315 - 345
The Beeches	Area B	95	Close	High	345 - 15
2a Church Lane	Area B	125	Intermediate	High	345 - 15
4 Church Lane	Area B	140	Intermediate	High	345 - 15
The Cottages	Area B	145	Intermediate	High	345 - 15
Terracotta	Area B	160	Intermediate	High	345 - 15
Coach House Cottage	Area B	180	Intermediate	High	345 - 15

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
The Old Rectory	Area B	200	Distant	High	345 - 15
Kirkfield	Area B	250	Distant	High	345 - 15
Lathbury Shaw	Area B	55	Close	High	45 - 135
Lathbury Shaw	Area C	60	Close	High	345 - 45
Lane End House	Area D	205	Distant	Moderate	345 - 45
Home Farm	Area D	215	Distant	High	345 - 45
The Thatched Barn	Area D	180	Intermediate	High	345 - 45
Taybarn	Area D	195	Intermediate	High	345 - 45
Lathbury Manor	Area D	245	Distant	High	15 - 45
2 Northampton Road	Area D	245	Distant	High	15 - 45
3 Northampton Road	Area D	250	Distant	High	15 - 45
Thatched Cottage	Area D	235	Distant	High	345 - 15
Tollgate House	Area D	250	Distant	High	345 - 15
Lathbury Shaw	Area D	180	Intermediate	High	45 - 75
Lathbury Shaw	Area E	180	Intermediate	High	15 - 45

**Table A 4: High sensitivity receptors potentially affected by dust from mobile plant and on-site haulage**

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Lane End House	Area B	45	Close	Moderate	345 - 15
Home Farm	Area B	75	Close	Moderate	315 - 15
The Thatched Barn	Area B	80	Close	Moderate	315 - 15
Taybarn	Area B	100	Intermediate	High	315 - 15
Lathbury Manor	Area B	80	Close	High	345 - 15
1 Northampton Road	Area B	105	Intermediate	High	345 - 15
2 Northampton Road	Area B	115	Intermediate	High	345 - 15
3 Northampton Road	Area B	135	Intermediate	High	345 - 15
4 Northampton Road	Area B	145	Intermediate	High	345 - 15
5 Northampton Road	Area B	150	Intermediate	High	345 - 15
Thatched Cottage	Area B	130	Intermediate	High	315 - 345
Tollgate House	Area B	165	Intermediate	High	315 - 345
The Beeches	Area B	95	Close	High	345 - 15
2a Church Lane	Area B	125	Intermediate	High	345 - 15
4 Church Lane	Area B	140	Intermediate	High	345 - 15
The Cottages	Area B	145	Intermediate	High	345 - 15
Terracotta	Area B	160	Intermediate	High	345 - 15
Coach House Cottage	Area B	180	Intermediate	High	345 - 15

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
The Old Rectory	Area B	200	Distant	High	345 - 15
Kirkfield	Area B	250	Distant	High	345 - 15
Lathbury Shaw	Area B	55	Close	High	45 - 135
Lathbury Shaw	Area C	60	Close	High	345 - 45
Lane End House	Area D	205	Distant	Moderate	345 - 45
Home Farm	Area D	215	Distant	High	345 - 45
The Thatched Barn	Area D	180	Intermediate	High	345 - 45
Taybarn	Area D	195	Intermediate	High	345 - 45
Lathbury Manor	Area D	245	Distant	High	15 - 45
1 Northampton Road	Area D	245	Distant	High	15 - 45
2 Northampton Road	Area D	245	Distant	High	15 - 45
3 Northampton Road	Area D	250	Distant	High	15 - 45
Thatched Cottage	Area D	235	Distant	High	345 - 15
Tollgate House	Area D	250	Distant	High	345 - 15
Lathbury Shaw	Area D	180	Intermediate	High	45 - 75
Lathbury Shaw	Area E	180	Intermediate	High	15 - 45

**Table A 5: High sensitivity receptors potentially affected by dust from off-site haulage**

Receptor	Dust source location	Minimum distance (m)	Distance category	Physical screening	Direction/s to dust source
Home Farm	Site access road	200	Distant	High	45 - 75
The Thatched Barn	Site access road	180	Intermediate	High	45 - 75
Taybarn	Site access road	180	Intermediate	High	45 - 75
Lathbury Manor	Site access road	250	Distant	High	45 - 75
1 Northampton Road	Site access road	235	Distant	High	45 - 75
2 Northampton Road	Site access road	235	Distant	High	45 - 75
3 Northampton Road	Site access road	240	Distant	High	45 - 75
4 Northampton Road	Site access road	250	Distant	High	45 - 75
Thatched Cottage	Site access road	210	Distant	High	45 - 75
Tollgate House	Site access road	210	Distant	High	45 - 75

**Table A 6: Outcome of dust assessment for relative receptors potentially affected by dust from soil stripping, storage and replacement**

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lane End House	Area B	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area B	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area B	Ineffective	Negligible Risk	Negligible Effect
Taybarn	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Manor	Area B	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
2 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
5 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area B	Ineffective	Negligible Risk	Negligible Effect
The Beeches	Area B	Ineffective	Negligible Risk	Negligible Effect
2a Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
The Cottages	Area B	Ineffective	Negligible Risk	Negligible Effect
Terracotta	Area B	Ineffective	Negligible Risk	Negligible Effect
Coach House Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
The Old Rectory	Area B	Ineffective	Negligible Risk	Negligible Effect
Kirkfield	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area C	Moderately Effective	Low Risk	Slight Adverse Effect
Lane End House	Area D	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area D	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect
Taybarn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lathbury Manor	Area D	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area D	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area E	Ineffective	Negligible Risk	Negligible Effect

**Table A 7: Outcome of dust assessment for relative receptors potentially affected by overburden removal and wind-whip of dry surfaces**

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lane End House	Area B	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area B	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area B	Ineffective	Negligible Risk	Negligible Effect
Taybarn	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Manor	Area B	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect



Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
5 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area B	Ineffective	Negligible Risk	Negligible Effect
The Beeches	Area B	Ineffective	Negligible Risk	Negligible Effect
2a Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
The Cottages	Area B	Ineffective	Negligible Risk	Negligible Effect
Terracotta	Area B	Ineffective	Negligible Risk	Negligible Effect
Coach House Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
The Old Rectory	Area B	Ineffective	Negligible Risk	Negligible Effect
Kirkfield	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area C	Moderately Effective	Low Risk	Slight Adverse Effect
Lane End House	Area D	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area D	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect
Taybarn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect
Lathbury Manor	Area D	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
3 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area D	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area E	Ineffective	Negligible Risk	Negligible Effect

**Table A 8: Outcome of dust assessment for relative receptors potentially affected by dust from mineral extraction (and handling)**

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lane End House	Area B	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area B	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area B	Ineffective	Negligible Risk	Negligible Effect
Taybarn	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Manor	Area B	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
5 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area B	Ineffective	Negligible Risk	Negligible Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
The Beeches	Area B	Ineffective	Negligible Risk	Negligible Effect
2a Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
The Cottages	Area B	Ineffective	Negligible Risk	Negligible Effect
Terracotta	Area B	Ineffective	Negligible Risk	Negligible Effect
Coach House Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
The Old Rectory	Area B	Ineffective	Negligible Risk	Negligible Effect
Kirkfield	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area C	Moderately Effective	Negligible Risk	Negligible Effect
Lane End House	Area D	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area D	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area D	Moderately Effective	Negligible Risk	Negligible Effect
Taybarn	Area D	Moderately Effective	Negligible Risk	Negligible Effect
Lathbury Manor	Area D	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area D	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area D	Ineffective	Negligible Risk	Negligible Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lathbury Shaw	Area E	Ineffective	Negligible Risk	Negligible Effect

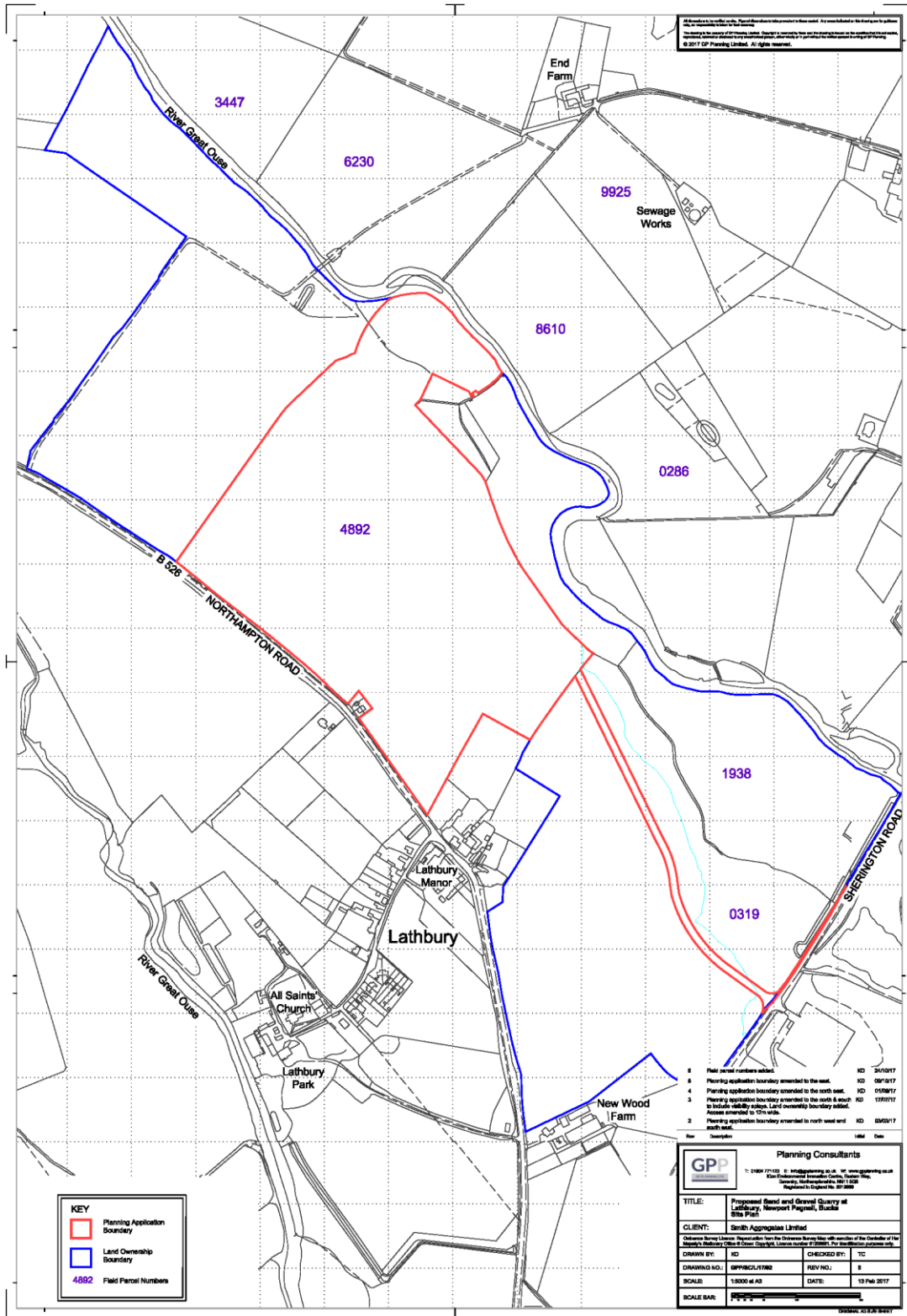
**Table A 9: Outcome of dust assessment for relative receptors potentially affected by dust from mobile plant and on-site haulage**

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Lane End House	Area B	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area B	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area B	Ineffective	Negligible Risk	Negligible Effect
Taybarn	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Manor	Area B	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
5 Northampton Road	Area B	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area B	Ineffective	Negligible Risk	Negligible Effect
The Beeches	Area B	Ineffective	Negligible Risk	Negligible Effect
2a Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
4 Church Lane	Area B	Ineffective	Negligible Risk	Negligible Effect
The Cottages	Area B	Ineffective	Negligible Risk	Negligible Effect

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Terracotta	Area B	Ineffective	Negligible Risk	Negligible Effect
Coach House Cottage	Area B	Ineffective	Negligible Risk	Negligible Effect
The Old Rectory	Area B	Ineffective	Negligible Risk	Negligible Effect
Kirkfield	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area B	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area C	Moderately Effective	Low Risk	Slight Adverse Effect
Lane End House	Area D	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Area D	Ineffective	Negligible Risk	Negligible Effect
The Thatched Barn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect
Taybarn	Area D	Moderately Effective	Low Risk	Slight Adverse Effect
Lathbury Manor	Area D	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Area D	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Area D	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area D	Ineffective	Negligible Risk	Negligible Effect
Lathbury Shaw	Area E	Ineffective	Negligible Risk	Negligible Effect
Home Farm	Site access road	Ineffective	Negligible Risk	Negligible Effect

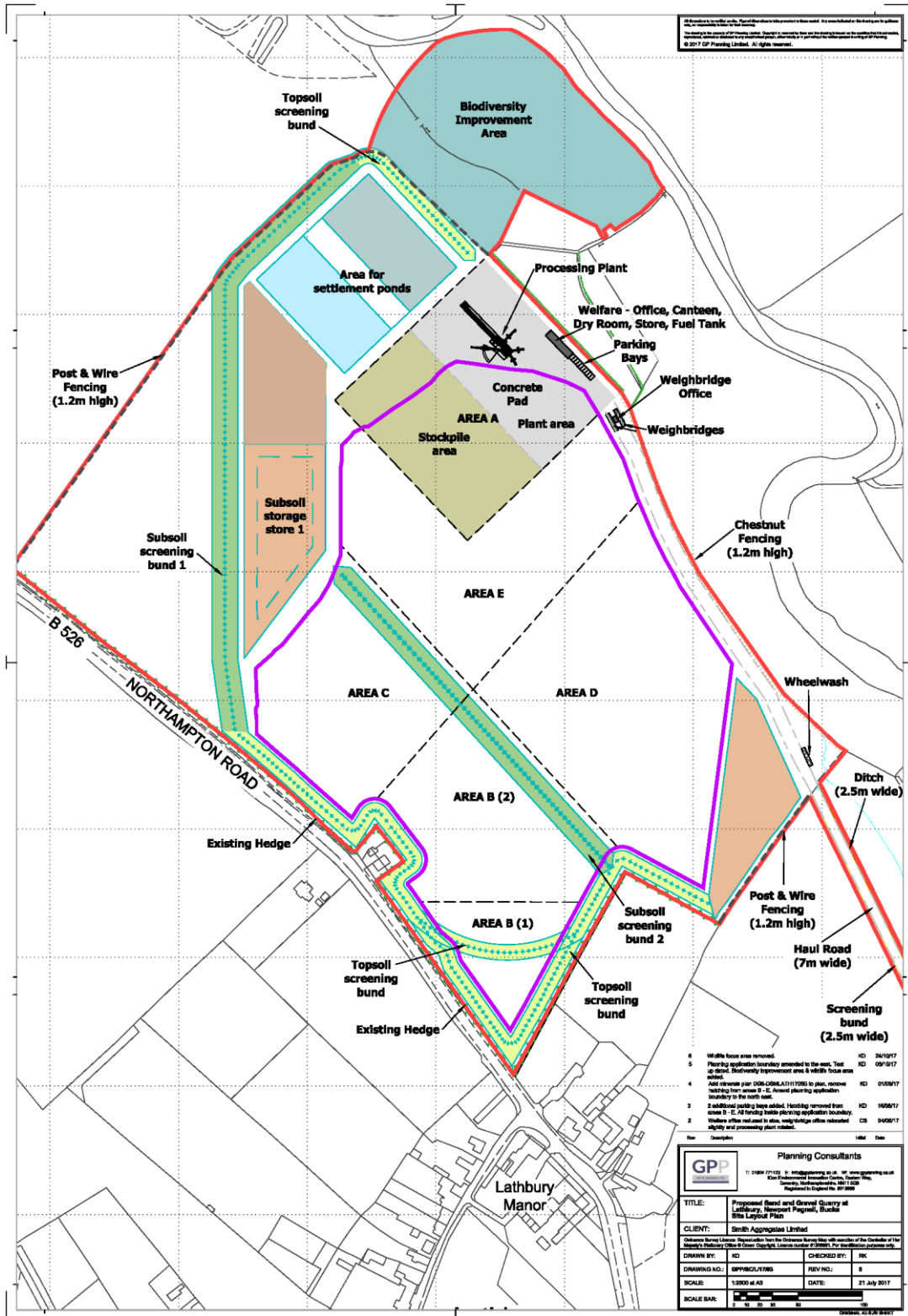
**Table A 10: Outcome of dust assessment for relative receptors potentially affected by dust from off-site haulage**

Receptor	Dust source location	Pathway effectiveness	Dust impact risk	Magnitude of Dust Effects
Taybarn	Site access road	Moderately Effective	Low Risk	Slight Adverse Effect
Lathbury Manor	Site access road	Ineffective	Negligible Risk	Negligible Effect
1 Northampton Road	Site access road	Ineffective	Negligible Risk	Negligible Effect
2 Northampton Road	Site access road	Ineffective	Negligible Risk	Negligible Effect
3 Northampton Road	Site access road	Ineffective	Negligible Risk	Negligible Effect
4 Northampton Road	Site access road	Ineffective	Negligible Risk	Negligible Effect
Thatched Cottage	Site access road	Ineffective	Negligible Risk	Negligible Effect
Tollgate House	Site access road	Ineffective	Negligible Risk	Negligible Effect



Drawing No. A1: Proposed site location





Drawing No. A2: Proposed site layout





## Appendix 2

## Dust Procedure

**Purpose: To control emissions of dust from the Site.**

	RESPONSIBLE PERSON	RECORD
<p>1. The most common cause of dust on Site is from the following:</p> <ul style="list-style-type: none"> <li>• Materials Handling and Movement.</li> <li>• Material Storage.</li> <li>• Material Treatment.</li> <li>• Vehicle Movements</li> </ul>		
<p>2. Mitigation measures have been devised to help alleviate the potential impacts of increased dust emissions within the Site and its surroundings.</p>		
<p><b><u>Dust Monitoring</u></b></p>		
<p>3. It is every member of staff's responsibility to continually monitor the emission of dust from the Site. Monitoring of dust will be carried out by visual assessment.</p>	All	Inspection Checklists
<p>4. If dust emissions are perceived to be excessive then the Site Manager must establish what is causing the excessive dust emission to be generated and take remedial action. The results of the investigation and what action was taken should be reported in accordance with the Complaints Procedure.</p>	Site Manager	Complaints Procedure
<p>5. Information regarding these remedial actions are included within the 'Mitigating the Impacts of Dust' section of this Procedure. Should the remedial action not be sufficient then the Site Manager will be informed, who will advise on the necessity to cease operations.</p>	Site Manager	
<p>6. In the event of a complaint being received the Complaints Procedure should be followed.</p>		Complaints Procedure
<p>7. The weather conditions at the Site will be considered and recorded at the start of each working day so that the day's work may be planned as appropriate regarding potential dust emissions.</p>	Site Manager	Inspection Checklists
<p>8. During exceptionally dry and/or windy conditions, if any operations / Site movements cause or are likely to cause visible dust emissions beyond the Site boundary, or if abnormal dust emissions are observed within the Site, Site operations may be suspended to avoid further dust emissions.</p>	Site Manager	
<p><b><u>Mitigating the Impacts of Dust</u></b></p>		
<p>9. A 10mph Site speed limit and the reduction of vehicle movements is enforced on the Site to help minimise the amount of dust generated by vehicle wheels.</p>	Site Manager	

10. All vehicles entering / exiting the Site will be sheeted to minimise the likelihood of dust emissions. Vehicles entering the Site are

Site Operative

visually inspected prior to unloading to ensure that excessively dusty loads are not accepted.

- |  |                |                       |
|--|----------------|-----------------------|
| 11. A mobile water bowser will be employed at the Site to dampen surfaces and stockpiles of material to prevent particulate matter becoming airborne. The condition and integrity of the bowser is checked as part of the Inspection Checklists. | Site Operative | Inspection Checklists |
| 12. The Site boundary is inspected regularly to identify any dust emissions / dust leaving the Site. If dust emissions are observed, then the use of water sprays is instigated.   | Site Operative | Inspection Checklists |
| 13. All equipment on site will be maintained in accordance with the manufacturer's specifications.   | Site Operative | Maintenance Procedure |
| 14. The handling height of material should be minimised at all times for all mobile plant in order to reduce the distance in which dust and particulates could be blown and dispersed by winds.  | Site Operative |                       |
| 15. The consequences of not following this procedure are that dust emissions may occur that lead to a nuisance being caused to neighbours of the Site.   |                |                       |



## Appendix 3      Inspection Checklists

Daily Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed
Litter	Within extraction / restoration area			
	Within waste storage area			
	Within mineral processing area			
	Along site boundaries			
	Outside site boundary			
Dust emissions	No excessive dust emissions should be escaping the boundary of the site			
Roads	Public highway clear of mud and debris			
Mobile water bowser	Water levels in bowser			
Weather	Please describe (temperature, wind speed, wind direction, dry/wet)			

Completed by

Position:

Signature:

Date:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Weekly Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed
Site Security	Locks on gates working and no holes in gate.			
	No damage to boundary fencing			

Completed by

Position:

Signature:

Date:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Form No. LATH001-2c

Inspection Checklists  
October 2021

V.1

Water bowser	Tank free from leaks.		
	Spray attachment in good working order.		

Completed by

Position:

Signature:

Date:

\_\_\_\_\_

Monthly Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed
Spill kits	Spill kits present on the Site and ready for use.			



Annual Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed

Completed by

Position:

Signature:

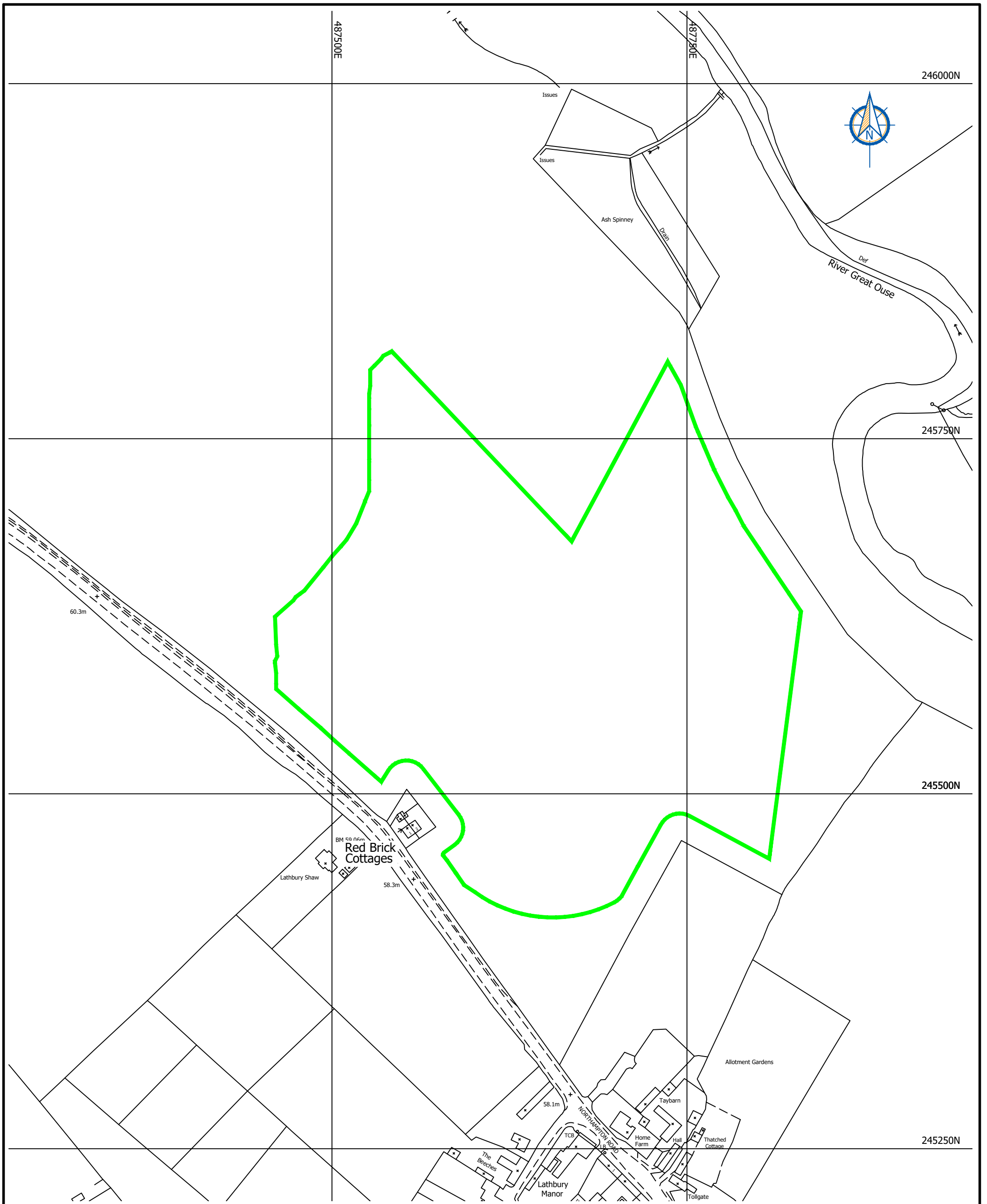
Date:

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**LEGEND**

 Environmental Permit application boundary  
 JB3608FR/A001 - deposit for recovery

Version	Revision and compilation notes	Date
a	Issued	05.03.2021

Project
Lathbury Quarry

Site plan - EPR/JB3608FR/A001



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Client



Date 05.03.2021	Drawn EB/EMB	Checked MP	Scale 1:2500 at A3
Drawing Ref SMLATH2103	Drawing No 1	Version a	



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## Sensitive Land Uses

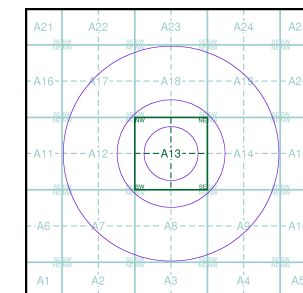
### General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

### Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

### Site Sensitivity Context Map - Slice A



### Order Details

Order Number: 274329050\_1\_1  
 Customer Ref: LATH-CCS  
 National Grid Reference: 487760, 245600  
 Slice: A  
 Site Area (Ha): 0.01  
 Search Buffer (m): 1000

### Site Details

Land at Lathbury,, Newport Pagnell, MK16 8LE

**Landmark®**  
 INFORMATION GROUP

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 Web: www.envirocheck.co.uk



Lagoon

Aggregate Wash Plant

Ash Spinney

Site Office and Wheel Wash

Lathbury Shaw

Red Brick Cottages

Home Farm

Lathbury

NORTH