

APP/KEH/2

**Town & Country Planning Act 1990  
Section 78 Appeals**

**Proposed Sand and Gravel Quarry,  
Lea Castle Farm**

Evidence of:

**Katrina Early Hawkins  
Smith Grant LLP**

**DUST and AIR QUALITY**

On behalf of: NRS Aggregates Ltd

Planning Inspectorate Reference: APP/E1855/W/22/3310099

Local Authority Reference: 19/000053/CM

**January 2023**

## **LEA CASTLE FARM**

### **PROOF OF EVIDENCE: DUST & AIR QUALITY**

**For: NRS Aggregates Ltd**

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## 1 Introduction

### 1.1 Experience and Qualifications

1.1.1 My name is Katrina Hawkins. I hold a First Class BSc (Hons) degree in Chemistry from the University of Nottingham and MSc degree in Environmental Pollution Control from the University of Leeds. I am a Chartered Environmentalist, a Member of the Institute of Air Quality Management, a Member of the Institute of Environmental Sciences and a Member of the Institute of Environmental Management and Auditing.

1.1.2 I have been in practice as an environmental consultant for over 25 years specialising in air, land and water pollution. I was employed as a Consultant, and later a Technical Director, by RPS Consultants Ltd for eleven years. I am currently Chairman of Smith Grant LLP (SGP), an environmental consultancy based in Wrexham, North Wales, having been a Partner of SGP since 2005.

1.1.3 SGP specialises in air quality and contaminated land investigation and remediation. I have undertaken an extensive number of dust and air quality assessments for a wide range of developments across the UK. Of particular relevance to this Appeal, I have carried out numerous assessments of potential dust and other aerial emissions from mineral extraction facilities, along with other waste management and industrial activities.

1.1.4 I have acted as an Expert Witness at several public inquiries in relation to dust and air quality matters, including recently on behalf of Hanson UK in relation to a successful Appeal regarding a proposed physical extension and extension of time of sandstone quarry.

### 1.2 Instructions and Scope of Evidence

1.2.1 My evidence has been prepared in relation to the refusal of planning permission by Worcester County Council (WCC) for the planning application submitted by NRS Aggregate Ltd ('the Appellant') in 2020 for a sand and gravel quarry with progressive restoration on land at Lea Castle Farm, Wolverley Road, Broadwaters, Kidderminster ('the Site').

1.2.2 NRS Aggregates Ltd is appealing the refusal (Appeal ref: APP/E1855/W/22/3310099).

1.2.3 In preparing this evidence I have reviewed the relevant documentation and guidance as set out in the Core Documents and appendices to my Proof. As part of this preparation I visited the site and surrounding area in 2023.

1.2.4 My evidence briefly sets out the background information to the site and proposed operations. My Proof primarily deals with 'dust' (particulate matter) and potential impacts on local amenity and addresses the amenity related reasons for refusal in response to the comments set out in

the WCC Statement of Case (SoC). My Proof also deals with other air quality matters in response to comments raised in the Rule 6 Party SoC and other objectors.

1.2.5 My evidence is structured in the following sections:

- Section 2: outline of relevant legislation, planning policy and guidance;
- Section 3: review of relevant submitted application information, consultee responses, reason for refusal, statement of case and third party objections;
- Section 4: summary description of the current site setting, nearby development and Proposed Development;
- Section 5: appraisal of potential dust impacts on local amenity associated with the Proposed Development;
- Section 6: appraisal of potential impacts on local air quality associated with other aerial emissions;
- Section 7: summary and conclusions.

1.2.6 My evidence should be read in conjunction with the other evidence provided as part of the Appeal, including the Appellant's Statement of Case and in particular the evidence on planning issues prepared by Mr Liam Toland.

### 1.3 Declaration

1.3.1 The evidence which I have prepared and provide for this Appeal is true to the best of my knowledge and I confirm that the opinions expressed are my true and professional opinions in the matters to which they refer.

## 2 Legislation, Planning Policy and Relevant Guidance

### 2.1 Technical Context

2.1.1 Mineral extraction, processing and soil handling operations can give rise to releases of airborne particulate matter (PM) or 'dust'. The nature and quantity of airborne PM released at any one time will depend on a wide variety of factors including, but not limited to, the nature of the material being handled, the quantity of materials being handled, the handling processes incorporated and the weather conditions at the time of handling.

2.1.2 Airborne PM is made up of condensed phase (solid or liquid) particles suspended in the atmosphere and comes from both man-made and natural sources. It ranges in size from a few nanometers to around 100µm and can give rise to both soiling effects through dust deposition and human health effects through suspended particulates.

2.1.3 Dust soiling will arise from the deposition of particulate matter in all size fractions but will be associated mostly with particulate matter greater than 30 µm. Particles below 10 µm (referred to as PM<sub>10</sub>) correspond to the inhalable fraction of particulate matter and, depending on the nature and concentrations of the particles, can be associated with adverse health impacts. PM<sub>10</sub> includes both fine (those particles of less than 2.5 µm; referred to as PM<sub>2.5</sub>) and coarse (diameter between 2.5-10µm; PM<sub>2.5-10</sub>) fractions of airborne particulate matter which normally arise from different sources.

2.1.4 Haulage transport to and from the Site and non-road mobile machinery (NRMM) associated with on-site activities will also result in emissions of, primarily, oxides of nitrogen (NO<sub>x</sub>; comprises nitrogen dioxide (NO<sub>2</sub>) and nitric oxide (NO)) and PM<sub>10</sub>. NO itself is not considered harmful to human health. However, on release to the atmosphere it usually oxidises rapidly to NO<sub>2</sub> which is associated with adverse effects on human health, causing inflammation of the lungs at high concentrations. Long term exposure to NO<sub>2</sub> can affect lung function and respiratory symptoms.

### 2.2 Legislation and Guidance

#### *'Disamenity Dust' – Standards and Controls*

2.2.1 This Proof is primarily concerned with dust deposition and potential resulting impacts on amenity ('disamenity dust'). Public concerns in relation to dust accumulation and soiling may be related to a range of factors including the nature of a site and locality and baseline levels.

2.2.2 Disamenity dust as such is not regulated as a pollutant under air quality regulations and there are no UK statutory or recommended levels that define the point when deposited dust causes annoyance or disamenity. Instead, a number of "custom and practice" thresholds are typically

referred to in conjunction with other criteria such as the frequency of occurrence. Where possible, site-specific thresholds are derived taking into account baseline values.

2.2.3 Controls of soiling and annoyance impacts are typically achieved through conditions within planning permissions and / or environmental permits requiring the implementation of a dust management plan to prevent amenity impacts.

*Local Air Quality*

2.2.4 Ambient air quality standards in the UK are established through the combination of transposition of European legislation and additional UK legislation and requirements. Following the departure of the UK from the EU the air pollution standards established under EU requirements remain in place having been enshrined in UK law.

2.2.5 In addition, Part IV of the Environment Act 1995 imposes a duty on local authorities in the UK to review existing and projected air quality in their area. Any location likely to exceed the established UK Air Quality Objectives (AQOs) must be declared an Air Quality Management Area (AQMA) and an Action Plan prepared and implemented, with the aim of achieving the UK AQOs. This process is referred to as Local Air Quality Management (LAQM). The LAQM process is supported by national statutory policy and technical guidance provided by Defra.

2.2.6 The full air quality objectives (AQOs) were provided in Table 2.1 of the EnviroCentre Air Quality Assessment report submitted within the application (CD1.08). The current AQOs of specific relevance to the Site and Proposed Development with regards to protection of human health are summarised in Table 2.1 below.

**Table 2.1: Air Quality Objectives, Standards and Target Values**

pollutant	AQAL	Averaging period
NO <sub>2</sub>	40 µg/m <sup>3</sup>	annual mean
	200 µg/m <sup>3</sup>	hourly mean, not to be exceeded more than 18 times per annum
PM <sub>10</sub>	40 µg/m <sup>3</sup>	annual mean
	50 µg/m <sup>3</sup>	24-hour mean, not to be exceeded more than 35 times per annum
PM <sub>2.5</sub>	20 µg/m <sup>3</sup>	annual mean
	target of 15% reduction in concentrations at urban background locations	annual mean
	variable target of up to 20% reduction in concentrations at	annual mean

pollutant	AQAL	Averaging period
	urban background locations	

1: PM<sub>2.5</sub> –responsibility for meeting the PM<sub>2.5</sub> target sits with national government.

2.2.7 Ambient air refers to the outdoor air and excludes workplaces where members of the public do not have regular access. Advice is given in Defra guidance as to where the UK AQOs should apply as summarised below:

**Table 2.2: Summary of where the AQOs should apply**

Averaging period	Locations where the objective should apply
Annual mean	All locations where members of the public might be regularly exposed; including facades of residential properties, schools, hospitals, care homes etc
24-hour mean and 8-hr mean	All locations where the annual mean objectives apply together with hotels and gardens of residential properties
1-hour mean	All locations where the annual mean, 24-hour and 8-hour means apply; also kerbside Sites, parts of car parks, bus stations and railway stations which are not fully enclosed and any outdoor locations where members of the public might reasonably be expected to spend 1 hour or longer.
15-min mean	All locations where members of the public may be reasonably exposed for a period of 15 minutes.

Note: the AQOs do not apply at building facades or other places of work where members of the public do not have regular access

2.2.8 The **Environment Act 2021** establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022. The proposed target objectives under consideration are aimed at reducing PM<sub>2.5</sub> ambient concentrations with an annual mean concentration target of 10 µg/m<sup>3</sup> and a population exposure target of 35% reduction in population exposure by 2040. At the time of preparation of this Proof the targets had not been confirmed or the secondary legislation enacted.

### 2.3 Planning Policy, Best Practice and Guidance

#### *National Planning Policy and Guidance*

- National Planning Policy Framework (NPPF): in particular paragraphs 174, 185, 186 (CD11.01; extracts provided in Appendix KEH1);
- Planning Practice Guidance regarding Air Quality (nPPG-AQ) (CD12.27);
- Planning Practice Guidance on Minerals (PPG-M); in particular paragraphs 023-032; (CD12.24, extracts provided in Appendix KEH2);
- National Planning Policy for Waste (NPPW); in particular paragraph 7 and Annex B (CD11.02; extracts provided in Appendix KEH3);

### *Local Planning Policy*

- The Worcestershire Mineral Local Plan 2018-2036 (adopted July 2022): in particular MLP 28: Amenity (paragraphs 6.31 and 6.32) and MLP 29: Air Quality (CD11.03; extracts provided in Appendix KEH4);
- Worcestershire Waste Core Strategy Development Plan Document 2012-2027: in particular Policy WCS 14: Amenity (CD11.04: extracts provided in Appendix KEH5);
- Wyre Forest District Local Plan 2016-2036; in particular Policy SP33 Pollution and Land Instability (CD11.05: extracts provided in Appendix KEH6);

### National Best Practice and Guidance

- Institute of Air Quality Management (IAQM): Planning for Air Quality (CD12.26),
- Institute of Air Quality Management (IAQM): Guidance on the Assessment of Mineral Dust Impacts for Planning (CD12.24),
- Institute of Air Quality Management (IAQM): Guidance on the Assessment of Dust from Demolition and Construction (CD12.25),
- Defra, Local Air Quality Management, Policy Guidance LAQM PG(22), August 2022
- Defra, Local Air Quality Management, Technical Guidance, LAQM TG(22), August 2022

## 2.4 Key Policy Considerations

2.4.1 The NPPF provides some guidance to local authorities on taking dust and air pollution into account in planning policies and decisions.

2.4.2 Paragraph 174 of the Framework states: *'Planning policies and decisions should contribute to and enhance the natural and local environment by [...] preventing new and existing development from contributing to, being put at **unacceptable** risk from, or being adversely affected by, **unacceptable** levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality.'*

2.4.3 Similarly, the Worcestershire MLP Policies 28 and 29 and Worcestershire WCS Policy 14 include the terms **unacceptable** adverse effects and **unacceptable** adverse impacts on amenity.

2.4.4 These policies do not therefore require that all adverse effects be prevented. They seek instead to avoid effects and impacts that are found to be unacceptable. Neither is there any specific policy to the effect that even an unacceptable impact or adverse effect will automatically, or always, lead to the refusal of planning permission.

2.4.5 I have therefore in my evidence considered the risk of the Appeal proposals resulting in *unacceptable* impacts on amenity. In determining what defines an *unacceptable* level or



*significant adverse* impact I have referred to the NPPF and other relevant guidance as detailed above and discussed in the following sections. An adverse impact on its own does not necessarily result in an unacceptable impact or a significant adverse effect.

2.4.6 Of particular note paragraphs 023-032 of the PPG-M requires the consideration and assessment of the potential impacts of dust emissions from a mineral site and provision of recommended mitigation measures. However, it does not specifically state that an adverse impact would result in refusal.

2.4.7 Although PPG-M sets out outline guidance in relation to the assessment of dust in the context of the planning regime, it does not set out a methodology for determining what forms a significant adverse effect or unacceptable impact. Reference is therefore primarily made to available non-statutory guidance.

2.4.8 It is also noted that the available planning policies refer to impacts on general amenity, the effect of an impact being to result in disamenity. The definition of disamenity as given in the IAQM guidance is:

- Disamenity – can be considered as negative element or elements that detract from the overall character or enjoyment of an area.

### 3 Procedural Matters

3.1 A full review of the planning application and history of the Site is provided by Mr Liam Toland in his evidence (APP/LT/2) and I refer here only to those matters of relevance to dust and air quality impacts.

#### 3.2 Planning Application Submitted Information

3.2.1 The planning application was supported by an Environmental Statement (ES) prepared by Kedd Ltd (December 2019; CD1.03). The Statement included a section on Air Quality and Dust (Chapter 11) which was supported by a Technical Appendix (Technical Appendix E: CD1.08). The Technical Appendix comprised a Dust Impact Assessment prepared by Vibrock Ltd and a separate Air Quality Assessment prepared by EnviroCentre.

3.2.2 The Vibrock dust assessment considered potential dust sources associated with the proposals and best practice measures were recommended in order to minimise any such disturbance at sensitive receptors. It was concluded any dust occurrence event would be limited and of short duration and minimised by the implementation of the dust control measures.

3.2.3 The assessment also considered potential impacts due to PM<sub>10</sub> and PM<sub>2.5</sub> and concluded that air quality objectives (AQOs) would not be exceeded.

3.2.4 The separate EnviroCentre Air Quality Assessment considered the emissions generated by traffic movements that would be generated by the quarry and potential impacts on local ambient air quality. It was concluded the additional traffic would not result in significant changes in relevant pollutant concentrations at sensitive receptors.

3.2.5 The ES also included an Heath Impact Assessment Chapter (Chapter 20) and Cumulative Impact Assessment (Chapter 22).

3.2.6 The original ES was supplemented by three Regulation 25 responses. None of these included any further dust and / or air quality assessment in relation to amenity and human health impacts. The amended Non-Technical Summary ES submitted in July 2021 (CD5.16) did however include for a programme of dust monitoring.

#### 3.3 Statutory Consultee Responses

*Worcester Regulatory Services, Environmental Health and Licencing (provided shared services including for Wyre Forest District Council)*

3.3.1 No technical objections to the proposals were raised by the Environmental Health & Licencing Department with regards to either dust or air quality. There were no requests for further

information or assessment in relation to dust and amenity or local air quality and public health in response to the original submission (CD2.15, CD2.38 and CD2.39).

3.3.2 With regards to dust the Senior Technical Officer stated: *'WRS are satisfied with the methodology and conclusions of the dust impact assessment. With this in mind we would therefore recommend that the prevention strategies should be made conditional should the application be granted planning consent.'* The Officer also set out additional recommended mitigation measures to those set out in the Dust Impact Assessment.

3.3.3 Separately, with regards to the assessment of traffic impacts on local air quality, the Senior Technical Officer concluded: *'Results of appropriate modelling undertaken are presented. No adverse comments'*.

3.3.4 Subsequent responses were provided by the Officers following review of third-party objections and the Appellant's Regulation 25 submissions. These confirmed the WRS comments remained as previously with regards to air quality and dust with no objections or requests for further information in relation to dust and amenity or local air quality and public health during the determination of the application (CD4.06, CD4.21, CD4.27, CD4.28, CD5.03, CD5.16, CD6.30, CD6.42, CD6.44 and CD7.03).

*Wyre Forest District Council (WFDC)*

3.3.5 WFDC objected to the Proposed Development, including on the following grounds:

*'The proposal will directly adversely impact on existing and future residential dwellings both in close proximity and further from the site; impacting on their amenity, through adverse noise, dust, and vibrations. It will also impact on the wider community reducing the ability to enjoy recreational routes and outdoor space.'*

3.3.6 The response does not make any reference to the responses provided by WRS detailed above in paragraphs 3.3.1 and 3.3.4.

*Environment Agency (EA)*

3.3.7 The EA noted that a relevant Environmental Permit would be required to undertake the infilling operations as part of the restoration proposals (CD2.34). This would likely include requirements to undertake monitoring to assess any particular impacts on the environmental and local receptors. Dust was noted as a particular issue that the operator must be aware of during the landfilling phase. No objections to the Proposed Development were raised with regards to dust or air quality.

*Kidderminster Town Council*

3.3.8 Kidderminster Town Council objected to the Proposed Development, including on the following grounds:

*ii) the development will have a detrimental impact on the quality of life especially local housing and schools;*

*iii) the committee are concerned that the development will pose a threat to the air quality in the neighbourhood.*

3.3.9 No further information is provided in relation to these objections.

3.4 Other Parties Responses

3.4.1 Other responses were received from neighbour notification, advertisement and / or other representations objecting with references to dust arising from the proposals and impacts on local air quality, including concerns regarding silicosis.

3.5 Officer's Reports to Planning Committee

3.5.1 The May 2022 Officer's Report (CD10.01) notes that the main issues in the determination of the application included residential amenity where this includes dust, air quality and health impacts.

3.5.2 The Report includes a detailed consideration of the information presented in relation to dust and air quality matters in paragraphs 542-571. In paragraph 571 it states: *'Based on the above advise the Head of Planning and Transport considers that subject to the imposition of appropriate conditions, the proposed development would not have an unacceptable dust and air quality impact'.*

3.5.3 The Officer's Report concluded *'Based on the advice of Worcestershire Regulatory Services, Environment Agency, and the County Public Health Practitioner, the Head of Planning and Transport Planning considers that, subject to the imposition of appropriate conditions that there would be no adverse **air pollution**, noise, **dust**, vibration, odour or lighting impacts on residential amenity or that of human health, in accordance with Policy WCS 14 of the adopted Worcestershire Waste Core Strategy, and Policies SP.16 and SP.33 of the adopted Wyre Forest District Local Plan.'*

3.5.4 The Officer's Report included several recommended conditions. These included conditions 46-47 in relation to dust which required the pre-commencement submission and approval of a Dust Management Plan (DMP), to include dust monitoring.

3.6 Reason for Refusal

3.6.1 The planning application was refused by the Council's Planning Committee. The formal notice of the decision to refuse planning permission (CD10.02) includes several Reasons for Refusal, including:

**Reason 3:** *Unacceptable impact on residential amenity and local schools*

**Reason 8:** *Unacceptable general impact on environmental and wildlife; and*

**Reason 9:** *Unacceptable impact on health of local population*

3.6.2 The information section sets out the location of several residential and commercial properties and schools to the site and states: *'Due to the close proximity of the proposal to these receptors, it is considered it would have an unacceptable impact on residential amenity and local schools particularly in terms of dust emissions.'*

### 3.7 Statements of Case

#### *WCC Statement of Case*

3.7.1 Paragraphs 3.7 and 3.9 of the WCC SoC advise that the Council will not be defending the reason for refusal 8 (*'Unacceptable general impact on environmental and wildlife'*) or reason for refusal 9 (*'unacceptable impact on health of the local population'*). Officers concluded that, subject to the implementation of appropriate planning conditions, the proposal would not have a detrimental impact on the environment and wildlife or the health of the local population.

3.7.2 In relation to reason for refusal 3 the WCC SoC focuses on potential cumulative amenity impacts with the (now) permitted and allocated development at Lea Castle Village. Paragraph 5.9 states: *'The Council will demonstrate in evidence therefore that the existing review of air quality and dust impact therefore has failed to satisfactorily consider either the impact on an allocated development, secured within the Wyre Forest District Local Plan, or the combined impact of such developments being located within 250m of each other on the area as a whole.'*

3.7.3 Paragraph 5.20 then goes on to state: *'The Council will demonstrate in evidence that no assessment is provided to determine whether the mitigation plan is "strong enough" when a cumulative impact of the development in combination with Lea Castle Village is assessed. The appellant relies solely on the conclusion that the developments can work in harmony, as the minerals works are temporary.'*

#### *Rule 6 Party - Stop The Quarry Action Group Statement of Case (STQC SoC)*

3.7.4 The STQC SoC states STQC agrees with all the reasons for refusal, including those the Council will not be defending. Key comments noted of relevance to dust and air quality matters are noted below:

- Reason for Refusal 3 – unacceptable impact on residential amenity and local schools: : the SoC states the applicant has failed to properly assess the impacts on residential amenity and raises concerns regarding harmful effects of silica sand;

- Reason for Refusal 7 – unacceptable impact on highways: highlights presence of AQMA on the Kidderminster Ring Road;
- Reason for Refusal 9 – unacceptable impact on health of local population:

### 3.8 Third Party Representations

3.8.1 In addition to the reason for refusal and the issues raised by WCC and the Rule 6 Party in their Statements of Case a large number of third-party representations have been received. These include references to dust and air quality. These issues have therefore been dealt within my Proof.

### 3.9 Summary of Procedural Matters

3.9.1 In summary, the planning application was supported by an Environmental Statement which considered Air Quality and Dust impacts in detail.

3.9.2 The WRS Environmental Health Department did not raise any objections to the proposed development or request further information or assessment in relation to either dust or air quality.

3.9.3 At no stage during the determination process was there any request from WCC or WRS for additional assessment of potential impacts associated with dust and / or air quality in relation to the proposals. No suggestion was made that in-combination effects (i.e cumulative effects) had not been adequately addressed. The Head of Strategic Infrastructure and Economy recommended approval subject to several conditions including in relation to dust and HGV movements.

3.9.4 No specific details were provided in the Decision Notice on the reasons for refusal. However, in light of the information provided in the WCC SoC, I have focused on potential cumulative impacts of dust on amenity of the Proposed Development in conjunction with other existing and approved development, including Lea Castle Village, both on existing receptors and on potential future receptors following completion of committed development. In light of comments raised by the Rule 6 Party and other parties I have also briefly considered the potential impacts of the Appeal Proposals on local air quality.

## 4 Current Site Setting and Proposed Development

4.1 Full details of the existing site, site setting and proposed operations, including proposed phasing, are provided in the evidence presented by Mr Liam Toland (APP/LT/2), the Planning Statement and the ES. Only key summary details of relevance to dust and air quality are provided below.

### 4.2 Site Location and Existing Surroundings

4.2.1 The application boundary is provided in plans included in the Planning Application Statement (CD1.17-1.32; in particular plan KD.LCF.014). The Site currently comprises open agricultural land within the historic parkland of Lea Castle. The site is located within the vicinity of several residential and commercial properties, with the closest to the application boundary including South Lodges and Broom Cottage on the southern boundary, 1-12 Castle Barns on the north-eastern boundary, The Bungalow on the northern boundary and properties off Brown Westhead Park close to the western boundary. It is noted that South Lodge is under the control of the applicant. Other properties within 250m of the application Site boundary include Keepers Cottage and Upper Lea Castle Cottages to the north and further dwellings to the south of Wolverley Road (B4189).

4.2.2 Two schools are located within 250m of the application boundary, Heathfield Knoll School and First Day Steps Nursery, both to the south of Wolveley Road.

4.2.3 Several leisure facilities lie within 250m of the application boundary including Lea Castle Equestrian Centre to the north, beyond which lies Keepers Cottage Strong Farm 1988 Equestrian Centre, along with an associated camping area, and Brown Westhead Park & Playing Fields to the west. Wolverley Camping and Caravaning Club site lies beyond the Brown Westhead Park & Playing Fields to the west.

4.2.4 The proposed extraction area does not extend to the limit of the application boundary as shown in plan KD.LCF.013A (CD5.03), providing buffer areas to the nearby properties as discussed above. The closest residential properties to the proposed extraction and processing areas are The Bungalow lying 70m north of the extraction area and South Lodges and Broom Cottage, lying about 60m south of the extraction boundary. The accessible grounds of the two schools to the south lie 80m at their nearest point to the proposed extraction area.

4.2.5 Ground within the Site rises to a high point of 84m aod falling to the valleys of the River Stour to the west and the A449, Wolverhampton Road to the east.

4.2.6 The site is crossed by two public footpaths / bridleways with a third running close to the western site boundary.

#### 4.3 Potential Future Surroundings

4.3.1 Chapter 22 of the original ES identified two committed or proposed developments in the area which were considered to potentially lead cumulatively to adverse / unacceptable impacts upon local receptors.

4.3.2 An additional three planning applications have been submitted since preparation of the original ES for proposed developments in the area and which are considered to require further consideration.

4.3.3 These are:

**Table 4.1: Committed / Proposed Developments in the Locality**

Planning ref:	Details	Location & Comments
<b>Consented Developments at time of original ES</b>		
17/0205/OUTL	Lea Castle Farm Hospital (Lea Castle Village) – mixed-use development including for up to 600 dwellings	extends to about 450m to east of proposed mineral extraction area; construction currently on-going with earthworks having commenced in all phases  application supported by an Air Quality Assessment; decision notice includes requirement for a Construction Environmental Management Plan (CEMP) which was to include for measures for dust suppression
18/0163/FULL	Land off Stourbridge Road – residential development for up to 91 dwellings	about 660m to south-east of proposed mineral extraction area; development now complete
<b>Applications submitted post preparation of the original ES (now consented)</b>		
20/0217/FULL	Land at Brown Westhead Park, Wolverley Road – residential development for 4 dwellings	extends to within 85m to west of proposed mineral extraction area; lies between existing properties on Brown Westhead Park  permission granted 23.07.20; construction completed and properties occupied
<b>Applications submitted post preparation of the original ES (awaiting determination)</b>		
22/0404/OUT	Lea Castle Farm Hospital – further 800 dwellings	includes area to the west of the housing associated with 17/0205/OUT; extends to within 230m to the west of the mineral extraction area  application supported by an Air Quality Assessment
22/0235/PIP	Wolverley Lodge – erection of 4	extends to within 340m to northwest of Site



Planning ref:	Details	Location & Comments
	residential dwellings	boundary; located beyond Brown Westhead Park and Playing Fields

4.3.4 The locations of these proposed developments in relation to the Site are shown in Figure 1 of the evidence of Mr Neil Furber.

4.3.5 Of these the most relevant are those associated with Lea Castle Village.

#### 4.4 Development Description

4.4.1 Proposals are for the extraction of sand and gravel / solid sand over a 10-year period, with progressive restoration with imported inert material. Final restoration would take place across a further 1 year.

4.4.2 Access to the Site would be provided directly off Wolverley Road (B4189) via a newly constructed and purpose-built access point. This is to be located in the south-east of the Site between South Lodges and Broom Cottage.

4.4.3 Key elements of the proposals are:

- works to be progressed in a phased manner; with Initial Works being undertaken in the central area to create a suitable platform for processing;
- works to then progress across Phases 1 to 5 from the northwest corner in an anti-clockwise manner;
- soil and overburden removal to be carried out in annual blocks, up to 8 weeks duration;
- extraction to be carried out using an hydraulic excavator and loading shovel;
- as-dug material to be transported via internal haulage and conveyor from Phases 1, 2 and 3 to the processing area; material from Phases 4 and 5 to be transported to the processing area by internal haulage;
- siting of processing plant within the initial void at a floor base of c.63.5m aod compared to surrounding ground level of c.70m aod; ground to immediate east rises to c.80m aod;
- processing to involve crushing, screening and sorting; understood that investigations have determined there is only a small proportion of oversized (large gravel boulders) within the deposit and therefore a large crusher section is not required within the plant;
- all stripped soil and overburden to be retained on site for use in restoration; all bunds to be retained for over 3 months or over winter to be grass seeded;
- provision of soil screening bunds to northern, western and southern edges of plant site prior to the commencement of extraction (referred to as Bunds 1-4); to be retained throughout the development until final restoration;
- planting of woodland block in northeast corner with enhancement to existing hedgerows;

- creation of temporary soil storage bunds as works progress across Phases 1-5;
- progressive restoration with imported material and retained soils;
- removal of processing plant and final restoration.

4.4.4 Extraction rates are predicted at 300,000 tonnes per annum (tpa) with an import for restoration of 60,000 m<sup>3</sup> per annum. The sizes and duration of the phases are detailed below:

**Table x: Summary of Phases**

Phase	Area (ha)	Soils / Overburden (m3)	Mineral tonnages	Anticipated Extraction Duration (years)
<b>Initial works</b>	3.3	45,800	450,000	2.5
<b>Phase 1</b>	4.65	57,400	225,000	0.75
<b>Phase 2</b>	3.78	37,000	300,000	1
<b>Phase 3</b>	4.45	54,500	375,000	1.25
<b>Phase 4</b>	5.97	62,400	975,000	3.25
<b>Phase 5</b>	3.83	52,700	675,000	2.25
<b>Total</b>	<b>25.98</b>	<b>309,800</b>	<b>3,000,000</b>	<b>10</b>

4.4.5 A short tunnel conveyor (60m length) would be used to transport material from Phases 1-3 in the western area underneath the access road that leads to the Bungalow and Lea Castle Equestrian Centre to the processing area. As-dug material would be transported to the feed hopper from the working faces by dumper.

4.4.6 All imported material for restoration would comprise inert waste materials, primarily clays and sands with reclaimed construction materials. The imported material would be tipped straight into the void minimising the requirements for any stockpiling of material and hence the likelihood of such material becoming dry and subject to wind blow. Following placement within the void the materials will be compacted, further reducing the potential for dust emissions generation.

#### 4.5 Regulatory Controls

4.5.1 The Officer's Report recommended several conditions to be included in any planning permission that may be granted. Those provided specifically in relation to dust are summarised below:

- **Condition 46** requires the submission and approval of a Dust Management Plan. The plan should be based on the submitted Dust Impact Assessment and set out and require compliance with good practice mitigation measures; the plan should be reviewed every 6 months and updated accordingly in light of good practice and developing evidence; the plan should include dust monitoring;

- **Condition 47** sets out several measures that shall be undertaken to suppress dust emissions on the site. These include provision of a water bowser, use of a road sweeper, minimisation of drop heights and establishment of a site maximum speed limit.

4.5.2 In addition, several other recommended conditions are of relevance to dust and air quality matters, including:

- **Condition 19** requires submission and approval of an HGV Management Plan; this should include measures to ensure that vehicles leaving the site do not deposit mud on the highway; details of HGV routing and requirement that HGV accessing the site only travel left out and right in;
- **Condition 20** requires provision of full details of the proposed wheel wash to the LPA and implementation and operation in accordance with the approved details;
- **Condition 21** requires all HGVs entering the public highway from the site to be cleaned in the wheel wash;
- **Condition 22** requires all loaded vehicles leaving the site to be sheeted
- **Condition 23** requires all HGVs leaving the site to turn left along Wolverley Road to Wolverhampton Road;
- **Condition 45** requires internal roads to be maintained such that surfaces are free of potholes and other defects;
- **Condition 50** requires heights of stockpiles of sand and gravel and inert restoration materials to not exceed 5m;
- **Condition 71** requires that there shall be no crushing, screening, sorting or processing of any waste material on the site.

4.5.3 In addition, the acceptance and handling of waste material for restoration would be controlled under an Environmental Permit to be issued by the Environment Agency under the requirements of the Environmental Permitting (England and Wales) Regulations 2016.

4.5.4 The Permit would require the management and operation of the permitted operations and directly associated activities using Best Available Techniques (BAT) to prevent, or where that is not practicable, reduce emissions. The Permit would include several conditions and would be expected to include standard boundary conditions in relation to dust and other aerial emissions.

4.5.5 Activities not controlled under the Permit, and hence solely controlled under the planning permission with regards to dust, would be the wider quarrying activities comprising soil stripping, overburden removal, extraction and material handling and processing and internal haulage not directly associated with material handling of waste materials.

## 5 Dust Impact Assessment

### 5.1 Introduction

5.1.1 Chapter 11 of the ES included a summary of the detailed dust assessment undertaken by Vibrock and included as Appendix E to the ES. I have reviewed the assessment and its findings focusing on the overall scope, methodology, results and conclusions. The assessment considered the potential sources of dust that may arise from the proposals, location and orientation to nearby receptors and potential for adverse impacts at those receptors.

5.1.2 The assessment was comprehensive and followed the approach of the illustrative example procedure for a dust assessment provided in the IAQM guidance on mineral dust and planning, with reference to other applicable guidance. To inform the cumulative dust assessment I have initially summarised key salient points of the original dust assessment below. For detail reference should be made to Chapter 11 of the ES and Technical Appendix E.

5.1.3 Where additional information is now available to that presented in the ES, this is highlighted.

### 5.2 Baseline Conditions

#### *Baseline Deposition Dust Conditions*

5.2.1 The site is located on the outskirts of the urban area of Kidderminster in a mixed-use locality, including residential, leisure and agricultural activities. The existing dust deposition levels are likely to be mainly influenced by agricultural activities. The Dust Assessment included reference to some monitored dust deposition data for several locations on the Site perimeter for the period 24.07-18-15.08.18. The data reports the measured dust deposition levels to be in the range 34-63 mg/m<sup>2</sup>/day. Full details of the monitoring exercise and locations are not provided. However, these results are consistent with expectations for the locality, guidance providing a median (50<sup>th</sup> percentile) level of 56 mg/m<sup>2</sup>/day for 'residential areas and town outskirts'.

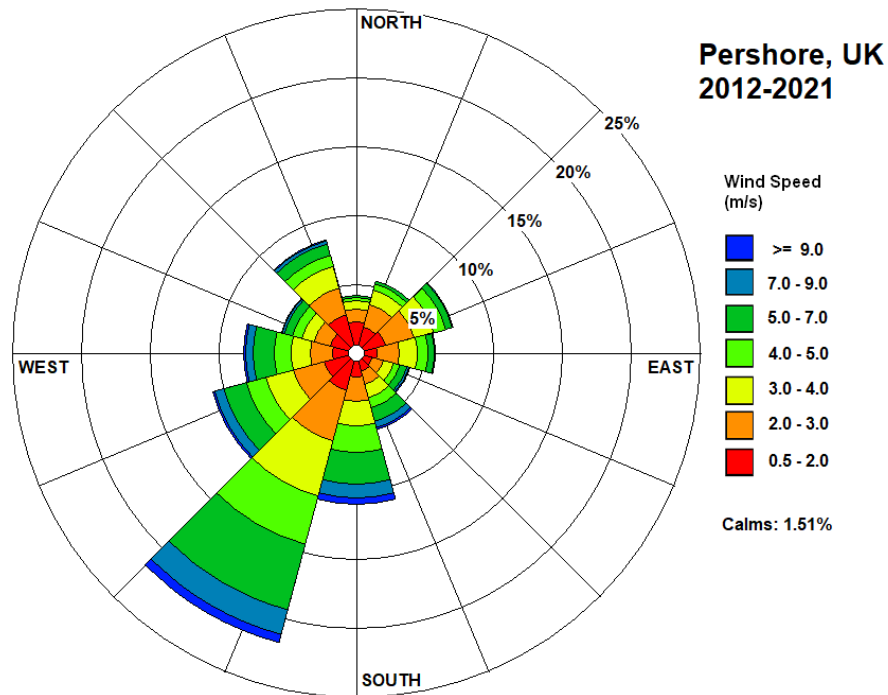
#### *Meteorological Conditions*

5.2.2 The prevailing wind direction has been determined through a review of meteorological data provided by the Met Office for Pershore, Worcestershire. The monitoring location is about 30km to the south-southeast of the Site. The station is located at an elevation of about 17m aod. Although differences will exist in conditions locally the data for Pershore is expected to be broadly representative of that for the Site. The use of this data is considered appropriate for the dust assessment.

5.2.3 The windrose for the period 2012-2021 is reproduced below; this depicts average wind speeds and directions over the relevant total monitoring period

5.2.4 The prevailing wind direction is south-westerly (i.e. from the south-west), consistent with typical UK conditions.

Figure 5.1: Pershore Windrose 2012 to 2021



### 5.3 Disamenity Dust Impact Assessment

5.3.1 The assessment of disamenity impacts follows the Source-Pathway-Receptor concept and considers the potential strength of the identified dust *sources* and the potential *pathway* from these sources to nearby identified *receptors*.

5.3.2 The assessment presented in the ES considered the potential *residual source emissions* taking into account the controls that are to be incorporated into the design of the Proposed Development, as recommended in the IAQM guidance (CD12.24). The assessment therefore takes into account both the in-built design measures, such as the siting of the processing plant at depth within the void, as well as the proposed outline management and control measures that would be applied, and be subject to continual improvements as deemed necessary.

5.3.3 The assessment considers all primary sources associated with the proposed mineral extraction and subsequent restoration. This includes soil stripping, storage and restoration; mineral extraction; loading and tipping; internal haulage; crushing and screening; aggregates stocking; on-road transport; and wind-blow across exposed surfaces and stockpiles.

#### *Potential Sources*

5.3.4 Key points in relation to potential dust generating sources are:

**Table 5.1: Sources of Dust**

Source of Dust	Dust Source Potential	Comment
soil stripping / bund formation	<i>small / medium</i> - of short duration; soil stripping to be limited to area required for subsequent 12 months extraction	soils must be handled in an unsaturated condition, but maybe damped down to minimise dust; subsequent stabilising by grass seeding of bunds; risks similar to those of typical agricultural practices
extraction	<i>small / medium</i> – to be undertaken using a low-energy extraction method via a single excavator; decrease as excavations deepen and moisture content of mineral increases	typically contained within the void except near-surface workings; fresh mineral will typically be in a damp condition and will be unlikely to give rise to substantial dust; although drying out of quarry surfaces could occur rapidly in warm dry conditions
loading / tipping	<i>small</i> – as-dug material of high moisture content; use of one loading shovel; can increase in prolonged dry conditions if stockpiles dry out	short-lived and typically contained within the void; as-dug materials loaded at working face; sales materials loaded within void in processing area; minimisation of drop-heights
internal haulage	<i>small</i> – use of up to 2 dump trucks to transport as-dug material to processing area	damping down of internal haul road surfaces may be need under prolonged dry conditions; establishment of internal speed limit (15 mph)
mineral processing	<i>small</i> - located with base of quarry in processing area; static plant; wet process; larger crusher not required due to expected size of excavated material	cleaning of plant and conditioning of stockpiles with water sprays may be required in damp conditions
external road transport	<i>small</i> - wheel wash to be provided of all HGVs departing the Site; graded road of about 90m length from wheel wash to public highway; ~10-20 departing HGVs per day	internal road surfaces to be maintained in good running order; off-site road surfaces to be swept as necessary
restoration – inert waste material	<i>medium</i> – material placed within void to minimise stockpiles; compacted after placement	additional controls under Environmental Permit
restoration - soils	<i>small</i> – of short duration in final restoration phase; to be seeded shortly after placement	
wind-blown dust (from stripped / bare surfaces)	<i>small</i> - source potential increase during periods of prolonged dry weather; managed through limiting area of soil stripping on annual basis	surfaces may be damped down or have stabilisers applied if necessary
wind-blown dust	<i>small</i> - stockpiles located within base	

Source of Dust	Dust Source Potential	Comment
(from stockpiles / bunds)	of quarry; bunds will be stabilised by grass seeding	

*Potential Pathways*

- 5.3.5 As detailed in the IAQM guidance the larger dust particles (>30 µm) will mainly deposit within 100m of a source whereas intermediate sized particles (10-30 µm) may travel up to 400m, i.e. those larger and intermediate particles that may result in disamenity impacts. It is commonly accepted however that the greatest impacts will be within 100m of a source (Box 2 page 12 IAQM guidance on mineral dust, CD12.24). The levels of particles in the air available for deposition at further distances will have been reduced through deposition and dispersion.
- 5.3.6 The IAQM guidance is therefore clear that adverse dust impacts from sand and gravel sites are unlikely beyond 250m as measured from the nearest dust generating activities. Accordingly, the guidance advises that where receptors are not located within 250m of a sand and gravel site it can normally be assumed that a detailed disamenity dust assessment would not be required.
- 5.3.7 The consideration of the potential *pathway* of any disamenity dust to receptors within the screening distance takes into account the distance from a source to a receptor, local topography and any screening that may be present to impede that pathway along with the prevailing wind direction to determine the likelihood of dust being propagated towards that receptor.
- 5.3.8 Rainfall acts as a natural suppressant and will suppress wind-blown dust emissions for some time and it is widely accepted that rainfall less than 0.2mm per day may present high-risk conditions. The assessment therefore also takes into account the likelihood of dry days (that is those days when <0.2 mm of rainfall is recorded over a 24 hour period).
- 5.3.9 Winds with speeds to more than 5 m/s are more likely to give rise to wind-blown dust from exposed surfaces. Equally however higher windspeeds increase dispersion.
- 5.3.10 These site-specific factors are used to define the *pathway effectiveness* from a source to a receptor. This may range from *ineffective* (i.e. there is a low likelihood of any dust that may be generated being propagated towards a receptor; for example a receptor may be located distant from a source and frequently upwind of that source) to *highly effective* (i.e. there is a high likelihood of any dust that may be generated being propagated towards a receptor; for example a receptor may be located close to a source and frequently downwind of that source).
- 5.3.11 The assessment methodology is consistent with that advised in the IAQM guidance (Appendix 3 CD12.24).

### *Potential Receptors*

5.3.12 Receptors considered in the original Dust Impact Assessment comprise those nearest the Site boundary, including the Bungalow, South Lodges, Broom Cottage, properties on Brown Westhead Park and Castle Barns and Heathfield Knoll School and First Day Steps Nursery. Other receptors such as Lea Castle Equestrian Centre, Keepers Cottage and Strong Farm are effectively subsumed by these closer receptors.

5.3.13 Additional properties have also now been constructed on Brown Westhead Park to the west of the Site under a planning permission granted in 2020 as detailed in Table 4.1.

5.3.14 The gardens of the nearest properties to the proposed extraction areas (the Bungalow, Broom Cottage and South Lodges) extend to within 65m, 35m and 50m of the boundary at the closest points respectively. The fields used for paddocks at Lea Castle Equestrian Centre extend within about 20m of the extraction boundary.

5.3.15 As detailed above in Section 5.2 the prevailing wind direction is from the south-west. The properties on Brown Westhead Park, South Lodges, Broom Cottages and Heathfield Knoll School and First Schools therefore all lie upwind of the prevailing wind direction across the Site. Castle Barns lie downwind with the Bungalow lying downwind of Phases 1–3.

### *Assessment*

5.3.16 The greatest risk of any dust deposition at the properties nearest the extraction boundary would be during the initial soil stripping and other near-surface activities, including restoration, in the nearest phases to the properties. The initial works to create the platform for processing and subsequent infilling for restoration would comprise a short-period of soil stripping (expected up to an 8-week period) with creation of landscape screening bunds. The potential for dust generation from this activity would be as associated with typical construction earthworks and agricultural activities and can be readily mitigated using standard industry techniques. The screening bunds are to be seeded and thereafter would provide screening to the subsequent mineral extraction and then processing activities.

5.3.17 As extraction within this Initial Works area deepens the risk of off-site dispersion and resulting adverse impacts due to dust diminishes. Processing, stockpiling and handling of material for off-site despatch will occur within the void, serving to reduce the risk of adverse impacts at receptors.

5.3.18 During the restoration phase in the Initial Works area the risk of adverse dust impacts at nearby properties would increase again as placement approaches near-surface levels. This would again be managed through the employment of standard industry mitigation measures, with the screening soil bunds only being removed towards the end of the restoration.



5.3.19 Similarly for other phases the greatest risk of any dust deposition at the nearest properties would be during the initial soil stripping and other near-surface activities, including restoration, in the nearest phases. Again, as extraction deepens the potential risks diminish.

5.3.20 As noted above the Bungalow and properties at Castle Barns lie downwind of the prevailing wind direction across the Site. The assessment concluded, taking account of the designed-in mitigation measures, there is a risk of *moderate adverse* effects, at most, arising from fugitive dust at the Bungalow. As the screening bunds establish and quarrying activities move away from the boundary and deepen within the quarry potential impacts would fall to *slight* to *negligible* at this property.

5.3.21 This is also of relevance with respect to the properties at Castle Barns, where the assessment concludes *slight adverse* effects at most. Potential impacts and resulting effects will reduce to *negligible* throughout the works that are further away from these properties.

5.3.22 The assessment concluded *negligible* effects at all other considered receptors, including South Lodges, Broom Cottage, Heathfield Knoll School and First Steps, Brown Westhead Park and the Bungalow.

5.3.23 The Site access point lies between South Lodges and Broom Cottage and would form about 95m of unpaved roadway to / from the processing / despatch area. The road would be graded and maintained in good running condition and be subject to the Site speed limit. All HGVs leaving the Site would pass through a wheel wash prior to exit onto this access road. This services to minimise the likelihood of track out onto the access road and the public highway which can be subsequently raised to create dust.

5.3.24 The newly constructed properties on Brown Westhead Park are slightly closer to the proposed extraction boundary than the existing properties. However, they are well screened by existing trees and topography and are located upwind of the Site. Resulting effects are *negligible* as for the existing properties.

#### 5.4 Mitigation Measures

5.4.1 As noted above and within the Vibrock Dust Assessment the quarry would be operated in accordance with the dust suppression measures detailed within the assessment report and in Appendix 3 of that report. The recommended conditions by WCC that would be imposed on the grant of any planning permission included conditions mandating that the Site be operated in accordance with a Dust Management Plan (DMP).

5.4.2 In addition, the importation, handling and placement of inert waste materials for the restoration would be regulated by the EA under an Environmental Permit. This would require the operation in accordance with BAT for these activities and would include standard permit 'boundary' conditions in relation to dust and other emissions.

5.4.3 The DMP would draw together the management, control and monitoring measures specifically in relation to fugitive dust. Such mitigation measures include, but are not limited to, the following:

- regular visual inspections of the site and local road network;
- regular maintenance of haul roads;
- maintenance of Site speed limit;
- use of a road sweeper as and when required;
- minimisation of drop heights during loading / unloading of dump trucks;
- provision of wheelwash for all departing HGVs;
- use of dust suppression as and when required;
- mobile plant exhausts and colling fans to point away from ground;
- maintenance of complaints log and response procedure.

5.4.4 In addition, the draft Condition 46 in relation to the DMP included reference to 'dust monitoring'. This typically includes for the carrying out of visual inspections of any dust generating activities and site boundaries. It is additionally proposed that physical dust deposition monitoring is included as noted in the amended ES NTS submitted in 2021. The detailed scope of the dust monitoring would be subject to agreement with the MPA.

5.4.5 A standard requirement is that additional measures are implemented immediately in the event of adverse conditions developing which cause, or risk causing, visible dust escaping the site. These could include the modification, reduction or suspension of any activities causing the dust until such time as the situation has been resolved. This may require for example moving site activities to a suitable location until suitable weather conditions return or additional use of water suppression.

5.4.6 The draft Condition includes for a formal review of the DMP every 6 months from the date of planning permission. A regular review process enables the updating and / or amending of the Plan in agreement between the operator and MPA in response to any changes in circumstances potentially requiring additional air quality / dust mitigation measures to ensure it remains robust.

5.4.7 The above is consistent with the essence of guidance in relation to mineral dust, which is that dust emissions can be controlled by effective site management. As stated in Section 7.1 of the IAQM guidance (CD12.24) dust mitigation is a dynamic process involving the review and regulation of the mitigation applied as per the conditions on site.

## 5.5 Cumulative Disamenity Assessment

*Lea Castle Village (referred to as the 'core' site)*

- 5.5.1 As noted above construction is currently on-going of the consented part of the Lea Castle Village to the east of the Site. Aerial imagery indicates the demolition and initial earthworks to create the development platform for this development are now primarily complete and that built development has commenced across all phases.
- 5.5.2 It appears construction may have commenced in 2019. On the basis of an original projected timescale of 10 years to complete the development there could therefore be an overlap of several years when mineral extraction could be on-going at the Site and construction works completing at the core Lea Castle Village development.
- 5.5.3 The core Lea Castle Village site lies over 250m from the proposed development, i.e. beyond the standard screening distance for considering disamenity dust effects from sand and gravel quarries (see paragraph 5.3.4 above). Hence, the risk of adverse dust effects from the Site on the new receptors being introduced as part of the core Lea Castle Village site is *negligible*.
- 5.5.4 Any existing receptors present within the relevant disamenity dust assessment screening distances for both sites could however be subject to cumulative impacts and effects. The IAQM guidance on construction dust (CD12.25; Box 1) provides a screening distance of 350m from the boundary of construction sites. Beyond this it can be concluded any risk is *negligible*. This distance is deliberately conservative because, as for mineral sites, the airborne concentrations and rate of deposition of dust declines exponentially with distance from the dust generating source with larger particles typically being deposited within 100m. The IAQM recommended construction assessment process takes this into account. For example, where there are >100 residential properties between 100m-350m of a construction site then the area sensitivity may be deemed 'medium'. Where there are less than 100 properties located between these distances then the sensitivity is deemed 'low'.
- 5.5.5 The planning permission for the core Lea Castle Village development requires the submission and agreement of a Construction Environmental Management Plan (CEMP) prior to commencement. This was to include measures for dust suppression. As such the risk of potential fugitive dust being generated during the construction phases should be managed and controlled in accordance with standard industry methods, reducing the potential for adverse effects locally from these activities.
- 5.5.6 However, there are no relevant sensitive human receptors that lie within 250m of the Site and within 350m of the core Lea Castle Village development as shown in Figure 1 in Appendix KEH7. Hence, the potential for cumulative adverse effects on any receptors should these developments be on-going simultaneously is considered *negligible*.

5.5.7 The access / egress points to the two developments are about 800m apart on different public highways. In light of this, and the various mitigation measures to be employed by the two developments for departing HGVs, cumulative effects due to track-out would be *negligible*.

*Lea Castle Village (referred to as the 'wider' site)*

5.5.8 An application for development of a subsequent phase of the Lea Castle Village development is currently under determination. If granted the western most part of this development would extend to within 240m of the mineral extraction area of the Site as shown in Figure 2 in Appendix KEH7. Hence this could introduce sensitive relevant receptors to just within the screening distance, with the majority located beyond this distance. This would only occur if Phases 4 and 5 were ongoing when the western part of the Castle Lea Village development was completed and occupied.

5.5.9 If this did occur winds could blow across Phases 4 and 5 up to 11% of dry days (*moderately frequently*), if the phases were operational concurrently (i.e. extraction in Phase 5 occurring whilst infilling in Phase 4). The properties would however be located at least 240m away. With reference to the assessment methodology employed by Vibrock the resulting pathway effectiveness (as defined above in paragraph 5.3.10; i.e. a measure of likelihood of dust being propagated towards that receptor) would be *ineffective* (receptors 'distant' from the extraction area). For a medium residual source emission the resulting dust impact risk would be *negligible*, with resulting *negligible* effects. As discussed in paragraphs 5.3.14 and 5.3.16, risks would further reduce as activities deepen within the void.

5.5.10 Hence in the event of works occurring simultaneously in Phases 4 and 5 of the proposed development when the western most part of the wider Castle Lea Village development is built and occupied, the resulting effects of any dust generated by the proposals on those properties would be *negligible*.

5.5.11 Hence, the Proposed Development is not predicted to have any significant adverse effects on the proposed wider Lea Castle Village development.

5.5.12 There would also be relevant sensitive receptors that would lie within the relevant screening distances of both the Site and the wider Castle Village development and which may therefore be subject to cumulative impacts. The receptors requiring consideration with regards to potential cumulative impacts would be Four Winds and Castle Barns as shown in Figure 2 of Appendix KEH7. The risk of any such cumulative impacts would only occur if extraction and restoration activities occurred in Phases 4 and 5 of the proposed development at the same time as construction activities in the western area of the wider Lea Castle Village development.

5.5.13 The Air Quality Assessment provided with the wider Castle Lea Village planning application included a construction dust assessment and provided recommended mitigation measures to be

implemented during the construction phase to ensure construction dust effects were negligible. It is presumed such measures would be agreed as part of Reserved Matters if permission is granted such as within a CEMP, as for the core Castle Lea Village development.

5.5.14 Both the Four Winds and Castle Barns receptors are upwind of the prevailing wind direction across the Lea Castle Village development.

### **Castle Barns**

5.5.15 Castle Barns comprises several properties and hence spans a distance of 160m. Gardens of the westernmost properties extend to <100m of the proposed extraction boundary and 170m of wider Lea Castle Village boundary. Gardens of easternmost properties extend to 100-200m of the proposed extraction boundary and <100m of wider Lea Castle Village boundary.

5.5.16 Winds may blow from the south-south-west through to the west-south-west across Phases 4 and 5 of the Site, representing about 8.7% of dry windy days (*moderately frequent*). Winds may blow from the east through to the south-south-east across the wider Lea Castle Village development, representing a further 2.7% of dry windy days, hence providing a total of 11.4% (*moderately frequent*) from the combined developments.

5.5.17 Distances from each development area to the receptors at Castle Barns vary although the resulting pathway is *moderately effective* at all locations. With *medium* residual source emissions this results in a *low* dust impact risk and *slight adverse* effect.

5.5.18 The potential contribution of dust impacts that may arise during the wider Lea Castle Village development are not therefore considered to result in significant adverse effects at Castle Barns. In addition, as noted above, such cumulative impacts may only occur if development occurs on the eastern part of the quarry at the same time at the western part of the wider Castle Lea Village development.

### **Four Winds**

5.5.19 The gardens of Four Winds extend to within 85m of the proposed extraction area and 305m of the boundary of the wider Castle Lea Village development. With reference to the outline masterplan for that application however the built development of the wider Castle Lea Village does not extend within 350m of Four Winds. The property therefore lies at the screening distance and is located upwind of this development.

5.5.20 The potential contribution of dust impacts that may arise if the western part of the wider Lea Castle Village development occurs simultaneously with the proposed development are not therefore considered to result in significant adverse effects at Four Winds.

### *Other Sites*

5.5.21 Of the other sites considered with regards to potential cumulative impacts the following observations can be made:

- Land at Stourbridge Road:
  - lies 660m distant and hence beyond the screening distance of potential disamenity dust impacts from the proposed development;
  - development is now complete and hence no cumulative impacts on other receptors should both developments occur simultaneously;
- , Land at Brown Woodhead Park:
  - is of a small nature (4 dwellings) and is nearing completion; and hence no cumulative impacts on other receptors as both developments would not occur simultaneously;
  - is represented by existing properties on Brown Woodhead Park and hence additional assessment of risks of proposed development to these new properties not required;
- Land at Wolverley Lodge:
  - lies 340m distant and hence beyond the screening distance of potential disamenity dust impacts from the proposed development;
  - is of a small nature (4 dwellings) and hence no cumulative impact assessment deemed necessary of risks on other receptors.

5.5.22 No further consideration of these is deemed necessary with regards to potential cumulative impacts in relation to disamenity dust.

## 6 Other Air Quality Matters

### 6.1 Fine Particulate Matter Assessment

#### *Baseline PM<sub>10</sub> / PM<sub>2.5</sub> Concentrations*

6.1.1 WFDC has not identified any areas of concern in relation to PM<sub>10</sub> or PM<sub>2.5</sub> in the air quality annual status reports (ASRs) submitted under its LAQM duties. Neither PM<sub>10</sub> nor PM<sub>2.5</sub> are monitored within the WFDC area

6.1.2 The PM<sub>10</sub> and PM<sub>2.5</sub> concentrations provided in the Vibrock Dust Impact Assessment report were therefore based on predicted background concentrations provided by Defra. This data is published by Defra in the form of predicted background concentration maps for 1km x 1km grid squares across the UK. These are updated on a regular basis due to updates in background data such as vehicle emission factors, vehicle fleet composition, age and distribution, existing local sources and monitoring data.

6.1.3 The latest maps were issued in 2020 and the predicted data is based on 2018 ambient monitoring and meteorological data. This therefore updates the data presented in the Dust Assessment report. The current available data for 2023 and 2028 for the grid squares in which the Site and surroundings are located are summarised below.

**Table 6.1: Predicted Background Air Quality Data – Particulate Matter**

Grid Square	Location	Annual Mean Concentrations (µg/m <sup>3</sup> )			
		2023		2028	
		PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
383500 279500	Site (west), Brown Westhead Park	11.18	7.28	10.87	7.04
383500 278500	Site (south-west), South Lodges, Heathfield Knoll School & First Steps	11.13	7.39	10.82	7.14
384500 279500	Site (east), The Bungalow, Lea Castle Barns	11.41	7.51	11.10	7.26
384500 278500	Site (south-east), Broom Cottage	12.01	7.76	11.70	7.81
<b>AQAL</b>		<b>40</b>	<b>25</b>	<b>40</b>	<b>25</b>

6.1.4 The maximum average background PM<sub>10</sub> and PM<sub>2.5</sub> concentrations for the grid squares in which the Site is located are predicted to be substantially below the relevant objectives, at 30% and 31% of the objectives in 2023. These are predicted to fall slightly over time.

6.1.5 The data are effectively an average concentration across each 1km square. Pollutant concentrations may therefore be higher than those provided above at any individual receptor close to any particular source such as the nearby A449.

6.1.6 It is noted that it is stated in paragraph 7.22 of the STQC SoC that '*it is also more significant given the already high levels of air particulates to the northern end of Kidderminster*'. The source of this statement is unknown. The annual air quality status reports (ASRs) produced by WFDC under its requirement under the LAQM (latest readily available report dated July 2022 for monitoring data up until end 2021) do not make any reference to any such high levels or raise any concerns with regards to particulate levels within the WFDC area.

#### *Assessment*

6.1.7 As noted above the fugitive dust (particulate matter) that could be generated by the proposed operations will include a proportion of 'fine particulate matter' (as PM<sub>10</sub> and PM<sub>2.5</sub>). The original Dust Impact Assessment carried out by Vibrock accordingly also included a PM<sub>10</sub> Assessment. This assessment assumed an additional load of 1 µg/m<sup>3</sup> PM<sub>10</sub> attributable (as an annual mean) to the proposed operations in the existing background level (CD1.08). With the combination of 1 µg/m<sup>3</sup> to the background concentrations the resulting total PM<sub>10</sub> and PM<sub>2.5</sub> annual average concentrations would remain well below the relevant AQOs.

6.1.8 A 1km screening distance is applied to determine the need for a PM<sub>10</sub> assessment to be consistent with the PPG. However as noted by the IAQM guidance on mineral dust (CD12.24, section 2.3) there does not appear to be any firm evidence that such a distance is applicable to all mineral developments, and particularly those with less dust generating activities than open cast coal mines on which the original research was based. Although these smaller particles may remain suspended in the air and travel for longer distances than larger particles, they will also be subject to dispersion thereby reducing concentrations away from a source. The greatest impacts therefore would also be within 100m of a source as for disamenity dust (Box 2 of the IAQM Guidance, CD 12.24).

6.1.9 The IAQM Guidance on mineral dust (CD12.24; section 5.2) advises that where the long-term background PM<sub>10</sub> concentration is less than 17 µg/m<sup>3</sup> there is little risk that additional contributions from a mineral site would lead to an exceedance of the annual mean air quality objective. The guidance advises that if this is the case then no further consideration is typically required. This is conservative as this guidance is provided for all mineral sites.

6.1.10 As noted above the Defra data predicts annual mean background concentrations of 11.18-12.01 µg/m<sup>3</sup> in the locality, i.e. well below the recommended screening value of 17 µg/m<sup>3</sup>. On this basis no further consideration of potential PM<sub>10</sub> impacts from Proposed Development would be required.

6.1.11 Annual mean PM<sub>10</sub> concentrations may be higher than the general predicted background levels at some receptors, however there are none that are in close proximity to any particular sources that could lead to substantially higher levels. The closest properties to the Site, including those at Castle Barns for example, are set back at least 40m from the roadside of the A449. Others



are closer to Wolverley Road, but with measured traffic flows of <10,000 AADT (9,840 AADT provided for 2020 baseline) these would not be expected to be subject to high levels of PM<sub>10</sub>.

6.1.12 The proposed dust mitigation measures would also serve to reduce potential PM<sub>10</sub> emissions. Hence, taking into account the nature of the sand and gravel quarry, the proposed mitigation measures, location and orientation of receptors and background air quality, as discussed above with regards to disamenity dust, no further assessment is deemed necessary. Contributions of PM<sub>10</sub> from any fugitive dust from the proposed development to local air quality at relevant receptors is not therefore considered to result in significant adverse effects.

#### *Cumulative Assessment*

6.1.13 Cumulative contributions to PM<sub>10</sub> concentrations from the proposals and other developments in the area may also require consideration as discussed above in relation to disamenity dust. Fine particulate matter may travel longer distances than larger dust particles. However, as for the larger particles the concentrations reduce rapidly from source through deposition and dispersion. As for the proposed quarry, standard dust mitigation measures that would be implemented at the Lea Castle Village development would serve to reduce potential PM<sub>10</sub> emissions.

6.1.14 The IAQM guidance on construction dust (CD12.25) provides a screening distance of 350m from the source. The guidance however further defines an area being of *low* sensitivity where the background PM<sub>10</sub> concentration is less than 24 µg/m<sup>3</sup>, except where there are >100 high sensitive receptors within 20m of the source when it would be defined as of *medium* sensitivity. With reference paragraphs the background PM<sub>10</sub> concentrations are well below all screening thresholds and there are no sensitive receptors that lie within close proximity, and downwind of, of both the Proposed Development and the wider or core Lea Castle Village developments.

6.1.15 In the worst-case scenario of extraction and restoration taking place in Phases 4 and 5 of the proposed development simultaneously with construction of the western part of the wider Lea Castle Village, PM<sub>10</sub> concentrations are predicted to remain well below the relevant AQOs.

## 6.2 Vehicle Emissions Assessment

### *Baseline Conditions*

6.2.1 The HGV movements to and from the Proposed Development would result in NO<sub>x</sub> / NO<sub>2</sub> and PM<sub>10</sub> emissions and hence potential adverse impacts on local air quality. A detailed assessment of such emissions and potential impacts was accordingly submitted with the ES (CD1.08). This included atmospheric dispersion modelling of vehicle exhaust emissions and assessment of potential impacts at receptors near the affected local road network.

6.2.2 The EnviroCentre Air Quality Assessment made reference to Defra predicted background NO<sub>2</sub> concentrations along with some ambient monitoring carried out by WFDC.

6.2.3 The current available data for 2023 and 2028 for the grid squares in which the Site and surroundings are located are summarised below.

**Table 6.2: Predicted Background Air Quality Data – NO<sub>2</sub>**

Grid Square	Location	Annual Mean Concentrations (µg/m <sup>3</sup> )	
		2023	2028
383500 279500	Site (west), Brown Westhead Park	7.02	6.30
383500 278500	Site (south-west), South Lodges, Heathfield Knoll School & First Steps	7.33	6.51
384500 279500	Site (east), The Bungalow, Lea Castle Barns	7.51	6.64
384500 278500	Site (south-east), Broom Cottage	7.80	6.94
<b>AQAL</b>		<b>40</b>	<b>40</b>

6.2.4 The maximum average background NO<sub>2</sub> concentrations for the grid squares in which the Site is located are predicted to be substantially below the relevant objectives, at 20% of the objective in 2023 and falling to 17% by 2028.

6.2.5 As noted in section 2.2.4 of the Air Quality Assessment WFDC has declared an AQMA within Kidderminster which lies about 1.7km to the south of the Site (AQMA plan provided in Appendix KEH8). The area of this AQMA has not been revised since the assessment. It is understood however that a new road layout is being / has been provided in this area which is expected to substantially improve air quality (CD4.28).

6.2.6 The assessment also referred to monitoring data for a diffusion tube located on Stourbridge Road (SBR121). The latest WFDC ASR also reports monitoring data for several additional diffusion tubes located along Chester Road North to the south of the site (see plans in Appendix KEH9). Monitoring at these commenced in 2019 and the available results are summarised below.

**Table 6.2: Diffusion Tube Monitoring Data**

Ref	Location	Grid ref	Type	NO <sub>2</sub> Annual Mean Concentrations (µg/m <sup>3</sup> )				
				2017	2018	2019	2020 <sup>1</sup>	2021 <sup>1</sup>
SBR121	121 Stourbridge Road	383905 277857	roadside	29.0	32.2	27.0	22.6	25.8
334CRN <sup>2</sup>	334 Chester Road North	383965 277823	roadside			29.0	26.4	29.3
294CRN <sup>2</sup>	294 Chester Road North	384054 277444	roadside			20.0	16.3	18.0
383CRN <sup>2</sup>	383 Chester Road North	384175 277275	roadside			18.3	15.7	16.4
239CRN <sup>2</sup>	239 Chester Road North	384221 276911	roadside			19.2	16.2	17.0

Ref	Location	Grid ref	Type	NO <sub>2</sub> Annual Mean Concentrations (µg/m <sup>3</sup> )				
				2017	2018	2019	2020 <sup>1</sup>	2021 <sup>1</sup>
CSLOC	Coventry Street	384726 276909	roadside	32.1	32.5	27.6	23.4	24.2

1: Monitoring data for 2020 and 2021 will be influenced by the impacts of the Covid-19 pandemic on local traffic movements

2: Monitoring commenced in 2019

6.2.7 The annual mean NO<sub>2</sub> concentrations at all locations were lower in 2020 than 2019, and for most remained lower in 2021. This is consistent with expectations due to reduced traffic movements in 2020 and 2021 due to the impacts of the Covid-19 pandemic. However, irrespective of this the results for 2019 for all locations were well below the AQO of 40 µg/m<sup>3</sup> (<75% of the AQO).

#### *Assessment*

6.2.8 The proposals would result in an additional 116 HGV movements (58 in / 58 put) per day (as Annual Average Daily Traffic (AADT)) and 17 LGV movements per day (as AADT). Allowing for 25% of sand and gravel exports being transported on a back-haul basis, the number of HGV movements would reduce to 96 per day.

6.2.9 All movements to / from the Site would be via Wolverley Road to the east of the access road.

6.2.10 It is predicted that 60% of the development HGVs would travel to / from the north and 40% to / from the south. Of those travelling to / from the north these would be distributed via the A449 Wolverhampton Road (north of Wolverley Road) and Park Gate Road / A451 Stourbridge Road.

6.2.11 Of those HGVs travelling to / from the south 60% are predicted to travel via the A449 Chester Road North / to the east of Kidderminster and 40% via the A451 Stourbridge Road / Ring Road close to the Kidderminster town centre. The potential distribution of HGVs is shown in plan 3 in Appendix KEH9.

6.2.12 IAQM guidance on air quality and planning (CD12.26; box 6.2) provides screening criteria for additional traffic movements to be introduced as part of a development above which an air quality assessment is advised. Such as an assessment may take the form of a simple or detailed assessment depending on factors such as the sensitivity of the area, proximity of sensitive receptors to the affected road network etc. The screening criteria for HGVs are +100 AADT where distant from an AQMA and +25 AADT where within or close to an AQMA.

6.2.13 The greatest number of HGVs would be experienced along the access road and Wolverley Road to / from the junction with the A449. Thereafter the movements would be dispersed as shown on Figure 6.1 At 116 HGV AADT movements along Wolverley Road are above the screening criteria of +100 HGV AADT provided in IAQM guidance as indicating a need for an air

quality assessment. However, as noted above this assumes no back-haul; if a portion of back haul is assumed then flows are below the screening criteria.

6.2.14 The only receptors along this stretch of road would be Broom Cottage and Four Winds. The façade of Broom Cottage is within 2.5m of the roadside, whereas that of Four Winds is set-back at least 23m. Greatest potential impacts may therefore be expected at Broom Cottage, as pollutant concentrations fall rapidly from source, including road traffic. Traffic flows along this road for 2018 - 2020 are given as <10,000 AADT. Given the nature of this stretch of road (no traffic lights, bus stops or other sources of congestion and idling traffic) and based on air quality monitoring data for roads in Kidderminster itself as discussed above, pollutant concentrations would be expected to be well below the relevant AQOs (<75%).

6.2.15 The additional contributions of NO<sub>2</sub> and PM<sub>10</sub> to façade concentrations from the 116 HGV AADT would not be expected to result in significant adverse impacts at these properties, as determined through the Air Quality Assessment carried out for the planning application.

6.2.16 HGV movements would be dispersed on the wider road network with all movements beyond the Wolverley Road / A449 junction being less than the IAQM screening criteria for where outside an AQMA.

6.2.17 It is predicted that 19 HGVs (as AADT) would travel along Stourbridge Road to / from Kidderminster itself, and hence potentially through the Kidderminster AQMA (assuming no back-haul). This is also below the more stringent screening value of +25 HGV AADT that is provided in IAQM guidance as indicating a need for an air quality assessment.

6.2.18 Potential quarry related LDV movements are well below the relevant IAQM screening criteria of +500 LDV AADT where distant from an AQMA and +100 LDV AADT where within or close to an AQMA.

6.2.19 The EnviroCentre Air Quality Assessment comprised detailed assessment of the potential impacts of the emissions generated by these vehicle movements on the local road network. The assessment concluded no significant changes NO<sub>2</sub>, PM<sub>10</sub> or PM<sub>2.5</sub> concentrations at any modelled sensitive receptors due to the development. All resulting ambient air concentrations are predicted to remain well below the relevant AQOs.

6.2.20 On this basis it is considered that the contribution of the proposed quarry related HGV exhaust emissions to the local air quality would **not be significant**, as determined through the submitted air quality assessment.

#### *Cumulative Assessment*

6.2.21 With reference to Section 4.3 above the only other developments of relevance to a cumulative assessment for vehicle emissions are those of the Castle Lea Village. The planning application

for the recent wider Castle Lea Village application included an air quality assessment which included atmospheric dispersion modelling of vehicle emissions and assessment of changes in NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at a large number of receptor points (CD12.28). This modelled traffic flows on the wider local road work for 2018 as 'baseline' and for 2024 'with and without' development, 2024 being the project first year of occupation. The assessment states that the traffic data includes potential traffic flows from the Lea Castle Quarry.

6.2.22 Proposals are for the wider Lea Castle Village development to be provided with 6 access points.

This would serve to distribute the development-related traffic movements extensively on the wider local road network, with reported resulting decrease on some roads and higher on others. The modelled predicted changes in annual mean NO<sub>2</sub> concentrations were 0% of the AQO at all modelled receptor points other than at one location. This was located on Birmingham Road within Kidderminster where a 1% change was predicted. With reference to the IAQM guidance (CD12.26) all predicted impacts due to the wider Lea Castle Village development were therefore predicted to be *negligible*. Predicted changes in both annual mean PM<sub>10</sub> and PM<sub>2.5</sub> concentration were 0% at all receptors, with resulting *negligible* impacts.

6.2.23 The assessment predicted all resulting concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> to be comfortably below the relevant AQOs at all modelled receptor locations.

6.2.24 Taking this into account, and the comments above in paragraphs 6.08-6.20 in relation to the proposed quarry development, cumulative impacts due to traffic emission and impacts on local air quality are not predicted to be significant.

### 6.3 Other Matters – Respirable Crystalline Silica (RCS)

6.3.1 In paragraphs 7.22 and 7.24 the Rule 6 Party SoC makes reference to potential harmful effects of silica sand and silicosis. I have therefore provided further information here in relation to the proposed development.

6.3.2 Silica is a naturally occurring substance found in varying amounts in most rocks, sand and clay and in building products such as bricks and mortars. The mechanical breaking of silica containing materials, particularly cutting, sanding carving etc can give rise to fine dust which can include respirable crystalline silica (RCS). Long-term inhalation of RCS may give rise to silicosis, although extremely high exposures can also give rise to acute silicosis more quickly. Risks of exposure to RCS is greatest for construction workers working on materials such as concrete, mortar and sandstone that contain higher quantities of silica.

6.3.3 Quarrying activities may also give rise to RCS and guidance is provided by the Health and Safety Executive (HSE) to the quarrying industry in relation to silica and Control of Substances Hazardous to Health Regulations 2002 (COSHH). Health and safety controls are employed to manage the potential exposure of employees to RCS, as are employed for all activities that may

pose harm to workers and / or exposure to potentially harmful materials. This includes a series of advice sheets produced by the HSE covering aspects such as excavating and haulage, crushing and dry screening detailing recommended measures to reduce workers exposure to RCS. A workplace exposure limit (WEL) is established of 0.1 mg/m<sup>3</sup> (8-hour time weighted average) for RCS, along with other WELs that are provided for respirable dust and total inhalable dust.

6.3.4 The greatest risks for exposure would be to workers in enclosed environments where RCS may be generated through energetic processing such as crushing and other mechanical activities, and to those undertaking cleaning and maintenance activities in such environments.

6.3.5 The HSE advice notes in relation to crushing and dry screening advise that where possible these operations should be located outdoors away from buildings. Advice in relation to excavating and haulage is provided to operators in control cabs along with general advice to use standard dust suppression measures. Respiratory protective equipment (RPE) is generally not normally required other than for certain internal activities where the risk of exposure is greater.

6.3.6 There is no UK established or recommended ambient air quality standard for RCS. HSE advice is that *'No cases of silicosis have been documented among members of the general public in Great Britain, indicating that environmental exposures to silica dust are not sufficiently high to cause this occupational disease'* (extract from HSE website provided in Appendix KEH10).

6.3.7 There is no recommended methodology for the assessment for potential RCS emissions to ambient air or potential off-site impacts. However, RCS will potentially form a proportion of any PM<sub>10</sub> generated. All the outlined mitigation measures described above in section 5.4, and that would be implemented through a DMP, would serve to reduce dust, PM<sub>10</sub> and also any potential RSC emissions.

6.3.8 The proposals are for sand and gravel / sand extraction with no blasting or other significant breaking activities. Processing will involve the use of water and is understood to not require the use of large crushing plant. The implementation of dust suppression measures in accordance with a DMP would all serve to minimise the risk of any RCS emissions from the site. There is no evidence therefore that the proposed development would pose a potential significant risk to the local population due to RCS.

## 7 Overall Conclusions

- 7.1 WCC has advised it is defending Reason for Refusal 3 with regards to *unacceptable impact on residential amenity and local schools*. In WCCs SoC it is stated that there has not been satisfactory consideration of cumulative impacts with other developments in the area and makes reference to dust and air quality.
- 7.2 In preparing this proof I have therefore reviewed the original Dust Impact Assessment prepared by Vibrock and submitted with the planning application, and other relevant information and consultee responses.
- 7.3 The Vibrock Dust Impact Assessment considered the potential impacts from fugitive dust on local receptors, both with regards to dis-amenity dust and PM<sub>10</sub>. The assessment also included recommended outline mitigation measures that would be incorporated within any future consented operations. The assessment was reviewed by WRS who did not request any further information or raise any objections to the proposals with regards to dust and air quality.
- 7.4 I have carried out further assessment of the potential cumulative impacts of the proposed developments with other consented / allocated development in the area where the consent/allocation post-dates the publication of the original ES. This specifically considers the core and wider Lea Castle Village development to the east. I have considered both the potential impacts of any dust generated by the proposed development on any new sensitive receptors to be introduced by the Lea Castle Village, and the potential cumulative impacts on any existing receptors that may be affected by these developments should they occur concurrently.
- 7.5 In undertaking this assessment I have also considered the proposed mitigation measures and the recommended planning condition that would require the operation of the facility in accordance with an agreed DMP, as in standard best practice, and other relevant proposed conditions. Further regulatory control would be provided through the Environmental Permit that would be applicable to the material import aspects of the development.
- 7.6 I conclude that the Appeal proposals would not result in significant adverse impacts or unacceptable impacts on local amenity either alone or in-combination with the Lea Castle Village development.
- 7.7 Other potential aerial emissions associated with the proposals such as on-road vehicle exhaust emissions are also not predicted to result in significant adverse impacts.
- 7.8 Overall, from my review of the information and results of the assessment, I conclude that, with the incorporation of appropriate mitigation as already employed at the site, the proposed

development complies with the relevant national and local planning policies in relation to dust and air quality.



## **APPENDIX KEH1**

### **Extract of National Planning Policy Framework (NPPF)**



Ministry of Housing,  
Communities &  
Local Government

# National Planning Policy Framework

# 15. Conserving and enhancing the natural environment

174. Planning policies and decisions should contribute to and enhance the natural and local environment by:
- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
  - b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
  - c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
  - d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
  - e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
  - f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
175. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework<sup>58</sup>; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.
176. Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks

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<sup>58</sup> Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

## Ground conditions and pollution

183. Planning policies and decisions should ensure that:
- a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);
  - b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
  - c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.
184. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.
185. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:
- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life<sup>65</sup>;
  - b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
  - c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.
186. Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when

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<sup>65</sup> See Explanatory Note to the *Noise Policy Statement for England* (Department for Environment, Food & Rural Affairs, 2010).

determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.

187. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.
  
188. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.

## **APPENDIX KEH2**

### **Extract of PPG-M**

[Home](#) > [Housing, local and community](#) > [Planning and building](#)  
> [Planning system](#)

## Guidance

# Minerals

Guidance on the planning for mineral extraction in plan making and the application process.

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From: [Department for Levelling Up, Housing and Communities \(/government/organisations/department-for-levelling-up-housing-and-communities\)](#) and [Ministry of Housing, Communities & Local Government \(/government/organisations/ministry-of-housing-communities-and-local-government\)](#)

Published 17 October 2014

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### Related content

[Strategic environmental assessment and sustainability appraisal \(/guidance/strategic-environmental-assessment-and-sustainability-appraisal\)](#)

## Dust emissions

### How should mineral operators seek to minimise dust emissions?

Where dust emissions are likely to arise, mineral operators are expected to prepare a dust assessment study, which should be undertaken by a competent person/organisation with acknowledged experience of undertaking this type of work.

There are 5 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](#)
- make proposals to monitor and report dust emissions to ensure compliance with appropriate environmental standards and to enable an effective response to complaints.

Paragraph: 023 Reference ID: 27-023-20140306

Revision date: 06 03 2014

### Stages of the dust assessment study

Paragraph: 024 Reference ID: 27-024-20140306

Revision date: 06 03 2014

#### Stage 1: Establish existing baseline conditions

Existing ambient conditions should be recorded over a period sufficient to identify seasonal variations in the range of existing conditions which naturally exist (ideally by a dust-monitoring programme). The assessment should take into



account the principal existing dust sources (other than the site) such as air pollution from urban and industrial areas, existing mineral operations, agricultural activities and construction activities.

The location of residential areas, schools and other dust-sensitive land uses should be identified in relation to the site, as well as proposed or likely sources of dust emission from within the site.

The assessment should explain how topography may affect the emission and dispersal of site dust, particularly the influence of areas of woodland, downwind or adjacent to the site boundary, and of valley or hill formations in altering local wind patterns.

The assessment should explain how climate is likely to influence patterns of dispersal by analysing data from the UK Meteorological Office or other recognised agencies on wind conditions, local rainfall and ground moisture conditions.

Paragraph: 025 Reference ID: 27-025-20140306

Revision date: 06 03 2014

### **Stage 2: Identify site activities that could lead to dust emission without mitigation**

Potential dust sources should be identified and their potential to emit dust assessed with respect to the duration of the activity or the potential of dust to become airborne.

Paragraph: 026 Reference ID: 27-026-20140306

Revision date: 06 03 2014

### **Stage 3: Identify site parameters which may increase potential impacts from dust**

This brings together information collected in Stages 1 and 2 with information on sensitive land uses around the site in order to understand how these uses could be affected by dust. Computer modelling techniques can be used to understand how dust could disperse from a site. Alternatively,

a more qualitative approach, relying on professional judgement, could be used to bring together the data collected in Stages 1 and 2.

Paragraph: 027 Reference ID: 27-027-20140306

Revision date: 06 03 2014

#### **Stage 4: Recommend mitigation measures and site design modifications**

Measures to control dust should be specified and described in terms of their potential to reduce dust and consequent impacts.

Paragraph: 028 Reference ID: 27-028-20140306

Revision date: 06 03 2014

#### **What facilities are sensitive or less sensitive to dust emissions?**

The relationship of the activities within mineral workings to surrounding land uses will vary from site to site. Since the nature of those land uses varies, so will their sensitivity to dust. Some environmental features may also be sensitive to dust.

Paragraph: 029 Reference ID: 27-029-20140306

Revision date: 06 03 2014

#### **What additional dust control measures might be necessary?**

Additional measures to control fine particulates (PM10) to address any impacts of dust might be necessary if, within a site, the actual source of emission (eg the haul roads, crushers, stockpiles etc) is in close proximity to any residential property or other sensitive use. Operators should follow the [assessment framework](#) for considering the impacts of PM10 from a proposed site.

Paragraph: 030 Reference ID: 27-030-20140306

Revision date: 06 03 2014

## When should this additional assessment be carried out?

The actual cut-off point for consideration of additional assessments for individual proposals will vary according to local circumstances (such as the topography, the nature of the landscape, the respective location of the site and the nearest residential property or other sensitive use in relation to the prevailing wind direction and visibility).

Paragraph: 031 Reference ID: 27-031-20140306

Revision date: 06 03 2014

## Site Assessment flow chart

[Site assessment flow chart  
\(\[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\\_data/file/579117/minerals1\\\_033.pdf\]\(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/579117/minerals1\_033.pdf\)\)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/579117/minerals1_033.pdf)

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Paragraph: 032 Reference ID: 27-032-20140306

Revision date: 06 03 2014

## **APPENDIX KEH3**

### **Extract of National Planning Policy for Waste (NPPW)**



Department for  
Communities and  
Local Government

# National Planning Policy for Waste

planning authorities, should first look for suitable sites and areas outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development. Local planning authorities should recognise the particular locational needs of some types of waste management facilities when preparing their Local Plan.

## Determining planning applications

7. When determining waste planning applications, waste planning authorities should:

- only expect applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities where proposals are not consistent with an up-to-date Local Plan. In such cases, waste planning authorities should consider the extent to which the capacity of existing operational facilities would satisfy any identified need;
- recognise that proposals for waste management facilities such as incinerators that cut across up-to-date Local Plans reflecting the vision and aspiration of local communities can give rise to justifiable frustration, and expect applicants to demonstrate that waste disposal facilities not in line with the Local Plan, will not undermine the objectives of the Local Plan through prejudicing movement up the waste hierarchy;
- consider the likely impact on the local environment and on amenity against the criteria set out in Appendix B and the locational implications of any advice on health from the relevant health bodies. Waste planning authorities should avoid carrying out their own detailed assessment of epidemiological and other health studies;
- ensure that waste management facilities in themselves are well-designed, so that they contribute positively to the character and quality of the area in which they are located;
- concern themselves with implementing the planning strategy in the Local Plan and not with the control of processes which are a matter for the pollution control authorities. Waste planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced;
- ensure that land raising or landfill sites are restored to beneficial after uses at the earliest opportunity and to high environmental standards through the application of appropriate conditions where necessary.

8. When determining planning applications for non-waste development, local planning authorities should, to the extent appropriate to their responsibilities, ensure that:

- the likely impact of proposed, non-waste related development on existing waste management facilities, and on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;

# Appendix B

## Locational Criteria

In testing the suitability of sites and areas in the preparation of Local Plans and in determining planning applications, waste planning authorities should consider the factors below. They should also bear in mind the envisaged waste management facility in terms of type and scale.

### *a. protection of water quality and resources and flood risk management*

Considerations will include the proximity of vulnerable surface and groundwater or aquifers. For landfill or land-raising, geological conditions and the behaviour of surface water and groundwater should be assessed both for the site under consideration and the surrounding area. The suitability of locations subject to flooding, with consequent issues relating to the management of potential risk posed to water quality from waste contamination, will also need particular care.

### *b. land instability*

Locations, and/or the environs of locations, that are liable to be affected by land instability, will not normally be suitable for waste management facilities.

### *c. landscape and visual impacts*

Considerations will include (i) the potential for design-led solutions to produce acceptable development which respects landscape character; (ii) the need to protect landscapes or designated areas of national importance (National Parks, the Broads, Areas of Outstanding Natural Beauty and Heritage Coasts) (iii) localised height restrictions.

### *d. nature conservation*

Considerations will include any adverse effect on a site of international importance for nature conservation (Special Protection Areas, Special Areas of Conservation and RAMSAR Sites), a site with a nationally recognised designation (Sites of Special Scientific Interest, National Nature Reserves), Nature Improvement Areas and ecological networks and protected species.

### *e. conserving the historic environment*

Considerations will include the potential effects on the significance of heritage assets, whether designated or not, including any contribution made by their setting.

### *f. traffic and access*

Considerations will include the suitability of the road network and the extent to which access would require reliance on local roads, the rail network and transport links to ports.

### *g. air emissions, including dust*

Considerations will include the proximity of sensitive receptors, including ecological as well as human receptors, and the extent to which adverse emissions can be controlled through the use of appropriate and well-maintained and managed equipment and vehicles.

*h. odours*

Considerations will include the proximity of sensitive receptors and the extent to which adverse odours can be controlled through the use of appropriate and well-maintained and managed equipment.

*i. vermin and birds*

Considerations will include the proximity of sensitive receptors. Some waste management facilities, especially landfills which accept putrescible waste, can attract vermin and birds. The numbers, and movements of some species of birds, may be influenced by the distribution of landfill sites. Where birds congregate in large numbers, they may be a major nuisance to people living nearby. They can also provide a hazard to aircraft at locations close to aerodromes or low flying areas. As part of the aerodrome safeguarding procedure (ODPM Circular 1/2003<sup>5</sup>) local planning authorities are required to consult aerodrome operators on proposed developments likely to attract birds. Consultation arrangements apply within safeguarded areas (which should be shown on the policies map in the Local Plan).

The primary aim is to guard against new or increased hazards caused by development. The most important types of development in this respect include facilities intended for the handling, compaction, treatment or disposal of household or commercial wastes.

*j. noise, light and vibration*

Considerations will include the proximity of sensitive receptors. The operation of large waste management facilities in particular can produce noise affecting both the inside and outside of buildings, including noise and vibration from goods vehicle traffic movements to and from a site. Intermittent and sustained operating noise may be a problem if not properly managed particularly if night-time working is involved. Potential light pollution aspects will also need to be considered.

*k. litter*

Litter can be a concern at some waste management facilities.

*l. potential land use conflict*

Likely proposed development in the vicinity of the location under consideration should be taken into account in considering site suitability and the envisaged waste management facility.

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<sup>5</sup> [Safeguarding aerodromes, technical sites and military explosives storage areas and on the application of the Town and Country Planning \(Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas\) Direction 2002](#)



## **APPENDIX KEH4**

### **Extracts of Worcester Mineral Local Plan: MLP 28 and MLP 29**



Worcestershire

# Minerals Local Plan 2018-2036

Find out more online:  
[www.worcestershire.gov.uk/minerals](http://www.worcestershire.gov.uk/minerals)

## Policy MLP 28: Amenity

### Contributing to:

### Objectives MO4, MO5

Planning permission will be granted where it is demonstrated that the proposed mineral development, including associated transport, will not give rise to unacceptable adverse effects on amenity or health and well-being.

A level of technical assessment appropriate to the proposed development will be required to demonstrate that, throughout its lifetime and taking into account the cumulative effects of multiple impacts from the site and/or a number of sites in the locality, the proposed development will not cause unacceptable harm to sensitive receptors from:

- a) dust;
- b) odour;
- c) noise and vibration;
- d) light;
- e) visual impacts; and/or
- f) contamination.

### Reasoned justification

6.26 Mineral sites can cause concern to local communities because of possible disturbance or harmful effects on people's amenity, health and well-being, and living and working environments. Securing a high standard of amenity is fundamental to creating well-designed development<sup>464</sup> and policy MLP 28 seeks to ensure that minerals developments are planned, managed and restored in a way that protects people and other sensitive receptors from unacceptable effects on amenity or health and well-being. The method, phasing and lifespan of mineral workings, their distance to sensitive receptors, and their relationship to their locality will influence the nature and likelihood of such impacts.

6.27 Policy MLP 28 addresses a broad range of issues which should be considered to ensure there are no unacceptable adverse effects on the amenity or health of communities. The policy requires an appropriate level of technical assessment to be submitted with each application. Such assessments should be undertaken by an appropriate and competent expert and should be proportionate to the nature, location and

size of the proposed development and the significance of its effects. The assessments will need to take account of enabling and ancillary works, such as access routes, in addition to the main working area, and will need to consider the impacts which might occur at all stages of the site's life. For each of the issues identified in policy MLP 28, the assessment(s) should:

- identify the sensitive receptor(s)<sup>465</sup> which may be affected by the proposed development;
- quantify the extent of potential impacts at each stage of the proposed development in relation to the baseline conditions, taking account of how the local context (such as topography, watercourses and water features, and man-made structures and infrastructure including roads, railways and waterways) will influence any potential impacts or pathways for effects;
- consider the potential for cumulative impacts from the development itself and/or from other existing or approved development;

464 Ministry of Housing, Communities and Local Government (July 2021) *National Planning Policy Framework*, paragraph 130(f).

465 Sensitive receptors are defined in the glossary.

- demonstrate the measures which would be implemented to ensure adverse impacts would be avoided at source or, where this is not possible, outline the proposed management and mitigation measures to reduce effects to an acceptable level; and
- identify the significance of any residual effects.

6.28 The form which such technical assessments should take will depend on the scale and nature of the proposed development, and in some cases issues may be addressed through an Environmental Impact Assessment. Where there are expected to be significant health impacts,<sup>466</sup> a Health Impact Assessment (HIA)<sup>467</sup> can be a useful tool to enhance the positive aspects of a proposal through assessment, while avoiding or minimising any negative impacts, with particular emphasis on disadvantaged sections of communities that might be affected.

6.29 Developers are expected to proactively monitor impacts and emissions throughout the life of the site to enable issues to be addressed swiftly. Close liaison with communities can help to identify issues and enable feedback and dialogue on the need for and effectiveness of any mitigation measures.

6.30 A wide range of amenity impacts can be mitigated through appropriate site design and layout and the use of the surrounding topography. Complementing the existing features of the natural environment can also deliver wider multifunctional benefits. A common approach to mitigating amenity impacts is to include tree planting or natural screening; this can deliver landscape, biodiversity, and water environment benefits where proposals are influenced by the local context, and should be incorporated in a way which responds to the relevant strategic corridor priorities (see MLP 7 to MLP 12). Other mitigation measures could be realised through considerate site design and working practices including, but not limited to, locating working areas, plant, machinery or haulage routes away from sensitive receptors; fitting plant with silencers; sheeting of lorries and cleaning of wheels before vehicles exit the site; or limiting working hours.

## Dust

6.31 Dust can arise from extraction activities, the operation of processing plant, haulage vehicles and conveyors, and the storage of minerals and soils, where dust can be windblown from stockpiles. There may be temporary impacts from some phases of development, such as site preparation works, soil stripping, or restoration works. If not properly controlled at source, dust can cause nuisance to people and businesses, and harm through deposition on property.

6.32 A dust assessment will be required where dust emissions are likely to arise from a development. The assessment should take account of the location of the source of dust and the surrounding land uses as well as local factors that might affect the dispersal of dust, including topography, the nature of the landscape, and local wind patterns. Atmospheric dispersion modelling may be required to determine whether there is a risk of health effects due to dust emissions. Where necessary, mitigation proposals should be outlined. These might include the design, layout and phasing of operations to increase the distances between sources of pollution and potential receptors, locating dusty operations downwind of receptors, or using planting and screening to absorb pollutants. Working practices such as wheel washing, damping haul roads and sheeting of lorries can also be effective.

## Odour

6.33 Mineral sites are unlikely to be a source of odour. However, there is some potential for odours to arise from on-site water bodies, such as settlement and silt lagoons, or areas of water that are poorly designed or managed. Applications should identify any potential odour sources and demonstrate how they will be managed effectively to prevent unacceptable effects occurring.

<sup>466</sup> Worcestershire County Council (March 2016) *Health Impact Assessments in Planning Toolkit* advocates undertaking health impact screening to determine whether significant health impacts are likely to arise, prior to scoping the extent of any assessment which may be required. The toolkit is available at [http://www.worcestershire.gov.uk/info/20122/joint\\_strategic\\_needs\\_assessment](http://www.worcestershire.gov.uk/info/20122/joint_strategic_needs_assessment).

<sup>467</sup> Health Impact Assessment (HIA) is a process to predict the health implications on a population of implementing a plan, policy, programme or project, aiding the decision-making process.





**Wheel washing facility at Clifton Quarry**

### Noise and vibration

6.34 The introduction of sources of noise or vibration can impact on the use, enjoyment and tranquillity of a locality, and can cause an intrusion that can adversely impact on quality of life, health and well-being.<sup>468 469</sup>

6.35 Potential sources of noise within typical mineral operations include extraction activities and the operation of processing plant, haulage vehicles and conveyors. Activities such as soil-stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, the construction of new permanent landforms, and aspects of site road construction and maintenance may also be noisy in the short term. Each source of noise might have a different characteristic and intensity, and could be capable of causing significant impacts if not properly controlled. After-uses also have the potential to introduce or alter the source, type or level of noise arising from the site.

6.36 Vibration associated with mineral operations is principally caused by vehicle movements, particularly over uneven surfaces. Blasting can be used at some crushed rock workings and can cause both ground vibration and air overpressure.

6.37 An assessment will be required where there are likely to be impacts from noise or vibration. This should identify potential sources of noise and vibration, their general character and the location of noise-sensitive or vibration-sensitive receptors, including properties. Reference should be made to the types and levels of noise or vibration, the time of day noise or vibration will occur, whether they will be continuous or intermittent and the pattern and duration of their occurrence, as well as the prevailing acoustic environment and local factors such as topology and topography.<sup>470</sup>

6.38 Where noise or vibration impacts are identified, mitigation measures should be incorporated to ensure that effects are managed to an acceptable level. This might include appropriate design, layout and phasing of operations to increase the distances between the source of noise and potential receptors or to minimise noise transmission through the use of screening by natural barriers, planting or purpose-built features. Setting noise limits at sensitive properties, controlling working hours, and/or monitoring of noise conditions at mineral workings could also safeguard against disturbance from the site.<sup>471</sup>

468 Defra (2010) *Noise Policy Statement for England*.

469 Tranquil areas which have remained relatively undisturbed by noise, and are prized for their recreational and amenity value for this reason, may be identified and protected. At the time the Minerals Local Plan was submitted to the Secretary of State, there were no designated tranquil areas within Worcestershire but it is possible that such areas may be identified for protection during the life of the plan.

470 Ministry of Housing, Communities and Local Government, *Planning Practice Guidance, Noise* (Revision date: 06 03 2014) and Ministry of Housing, Communities and Local Government, *Planning Practice Guidance, Minerals* (Revision date: 17 10 2014).

471 Ministry of Housing, Communities and Local Government, *Planning Practice Guidance, Minerals* (Revision date: 17 10 2014).

## Policy MLP 29: Air Quality

### Contributing to:

### Objectives MO2, MO3, MO4, MO5

Planning permission will be granted where it is demonstrated that the proposed mineral development, including associated transport, will not give rise to unacceptable adverse effects on air quality, and will help secure net improvements in overall air quality where possible.

A level of technical assessment appropriate to the proposed development will be required to demonstrate that, throughout its lifetime, and taking into account the cumulative effects of multiple impacts from the site and/or a number of sites in the locality, the proposed development will:

- a) not cause unacceptable harm to sensitive receptors, sensitive habitats, or designated sites of importance for biodiversity from air quality. Particular consideration will need to be given to air quality impacts in or impacting upon areas where air quality is known to be poor, such as designated Air Quality Management Areas (AQMAs) or areas that are at risk of designation; and
- b) deliver improved air quality even when legally binding limits for concentrations of major air pollutants are not being breached, unless it is clearly demonstrated that this is not possible.

### Reasoned Justification

6.49 Increases in air pollutants can have harmful effects on human health and the environment. Mineral sites can cause concern to local communities because of possible impacts on air quality. Air quality impacts from mineral development are most likely to arise as a result of emissions from plant and processing equipment or from the impact of associated transport movements. There may also be temporary impacts from some phases of development, such as site preparation or restoration and plant construction.

6.50 Policy MLP 29 seeks to ensure that minerals developments are planned, managed and restored in a way that protects people and other sensitive receptors<sup>477</sup>, sensitive habitats,<sup>478</sup> and designated sites of importance for biodiversity<sup>479</sup> from unacceptable effects on air quality. The method, phasing and lifespan of mineral workings, their distance to sensitive receptors and land uses, and their relationship to their locality will influence the nature and likelihood of such impacts.

6.51 Policy MLP 29 requires an appropriate level of technical assessment to be submitted with each application. Such assessments should be undertaken by an appropriate and competent expert and should be proportionate to the nature, location and size of the proposed development and the significance of its effects. Assessments should:

- Establish the baseline local air quality, including the identification of any locations where air quality is or is likely to be a concern.
- Identify likely changes to air quality throughout the life of the development, including any changes in vehicle-related emissions resulting from the development, and any new point sources of air pollution during all phases of development. Where impacts are likely to result from transport movements this should consider traffic impacts in the immediate vicinity of the proposed development site and further afield.

477 Sensitive receptors are defined in the glossary.

478 Sensitive habitats are those habitats that are sensitive to changes in air quality. There is no definitive list or map of such habitats, as they must be identified on a case-by-case basis at the time of the planning application, taking account of non-designated habitats as well as those on any designated sites. Evidence used in the assessment required under policy MLP 31 (Biodiversity) should also help to identify such habitats for the purposes of policy MLP 29, and relevant guidance should be followed such as Institute of Air Quality Management (2019) *A guide to the assessment of air quality impacts on designated nature conservation sites* and Chartered Institute of Ecology and Environmental Management (2021) *Advice on Ecological Assessment of Air Quality Impacts*.

479 Designated sites of importance for biodiversity are those sites of international, national, or local importance, as defined in the glossary under the headings of Natura 2000 sites, Special Areas of Conservation, Ancient Woodland, Aged or veteran trees, Sites of Special Scientific Interest, and Local Wildlife Sites.

- Identify the sensitive receptors, sensitive habitats, and designated sites of importance for biodiversity<sup>480</sup> that may be affected by the proposed development. Particular consideration will need to be given to air quality impacts in or impacting upon areas where air quality is known to be poor, such as designated Air Quality Management Areas (AQMAs) or areas that are at risk of designation. Where relevant, reference should be made to the Worcestershire Air Quality Action Plan<sup>481</sup> and corresponding action plans of surrounding areas.
- Assess the likely air quality impacts and their significance, including the potential for cumulative impacts from the development itself and/or from other existing or approved development, and clearly state the methods adopted to reach these conclusions.
- Where negative effects are identified, set out acceptable mitigation measures to remove these effects or reduce them to acceptable levels.
- Set out measures to deliver improved air quality where possible, and quantify the contribution these measures will make to securing net improvements in overall air quality. This must be considered even when legally binding limits for concentrations of major air pollutants are not being breached. Measures to deliver improved air quality may include multifunctional green infrastructure measures. Where applicants consider that air quality improvements cannot be delivered as part of the proposed development, the reasons for this should be clearly demonstrated.

6.52 The assessment will need to take account of enabling and ancillary works, such as access routes, in addition to the main working area, and will need to consider the impacts which might occur at all stages of the site's life. In some cases, air quality impacts may be addressed through an Environmental Impact Assessment. Where there are expected to be significant health impacts,<sup>482</sup> a Health Impact Assessment (HIA)<sup>483</sup> can be a useful tool to enhance the positive aspects of a proposal through assessment, while avoiding or minimising any negative impacts, with particular emphasis on

disadvantaged sections of communities that might be affected.

- 6.53 Some potential air quality impacts may be able to be mitigated through appropriate site design and layout and the use of the surrounding topography. Air quality mitigation measures should be influenced by the local context, and should be incorporated in a way which responds to the relevant strategic corridor priorities (see MLP 8 to MLP 12). Other mitigation measures could be realised through considerate site design and working practices including, but not limited to, locating working areas, plant, machinery or haulage routes away from sensitive receptors, or limiting working hours.
- 6.54 Opportunities to secure overall improvements in air quality may be realised through measures such as traffic and travel management and green infrastructure provision and enhancement. Green infrastructure measures that complement the existing features of the natural environment can also deliver wider multifunctional benefits.

480 The requirements of Policy MLP 31 (Biodiversity) will be relevant to considering particular impacts on sensitive habitats and designated biodiversity sites.

481 Worcestershire's *Air Quality Action Plan*, together with information about Air Quality Management Areas in Worcestershire, can be found at [www.worcsregservices.gov.uk/pollution/air-quality.aspx](http://www.worcsregservices.gov.uk/pollution/air-quality.aspx).

482 Worcestershire County Council (March 2016) *Health Impact Assessments in Planning Toolkit* advocates undertaking health impact screening to determine whether significant health impacts are likely to arise, prior to scoping the extent of any assessment which may be required. The toolkit is available at [http://www.worcestershire.gov.uk/info/20122/joint\\_strategic\\_needs\\_assessment](http://www.worcestershire.gov.uk/info/20122/joint_strategic_needs_assessment).

483 Health Impact Assessment (HIA) is a process to predict the health implications on a population of implementing a plan, policy, programme or project, aiding the decision-making process.

## **APPENDIX KEH5**

### **Extracts of Worcestershire Waste Core Strategy Development Plan**



# Waste Core Strategy

## for Worcestershire

ADOPTED WASTE LOCAL PLAN 2012-2027



**Worcestershire  
Waste Core Strategy  
Development  
Plan Document**

November 2012

Find out more online:  
[www.worcestershire.gov.uk/wcs](http://www.worcestershire.gov.uk/wcs)



**worcestershire**  
county council



Objectives WO2

## Policy WCS 13: Green Belt

Waste management facilities will be permitted in areas designated as Green Belt <sup>117</sup> where the proposal does not constitute inappropriate development, or where very special circumstances exist.

### *Explanatory text*

#### *Green Belt*

**6.64** Large areas to the north of the County are designated as Green Belt (see **Figure 16**). There is a presumption against inappropriate development in the Green Belt in national policy<sup>118</sup> and in such cases applicants must clearly justify the very special circumstances why permission should be granted. Very special circumstances, individually or cumulatively, will not exist unless the harm to the Green Belt by reason of inappropriateness and any other harm is clearly outweighed by other considerations.

**6.65** Some types of waste management development have particular locational needs. It would be expected that these locational needs, together with the wider environmental and economic benefits of sustainable waste management, are material considerations that will be given significant weight in determining whether proposals for waste management facilities should be given planning permission. When considering development proposals, the Council will have regard to the cumulative effect of development.

Objectives WO2

## Policy WCS 14: Amenity

Waste management facilities will be permitted where it is demonstrated that the operation of the facility and any associated transport will not have unacceptable adverse impacts on amenity. This must consider impacts on or of:

- i. air quality, including any fumes, dust, odours or bioaerosols. Where relevant, the issues identified in the Herefordshire and Worcestershire Air Quality Management Plan, and those of adjoining authorities, must be taken into account; and
- ii. planned or unplanned fires; and
- iii. noise and vibrations; and
- iv. insects, vermin and birds; and
- v. litter and windblown materials; and
- vi. visual intrusion and light pollution; and
- vii. health

Cumulative effects must be considered. Details of any mitigation or compensation proposals must be included; this may be through enclosing operations or through other appropriate measures.

Where there will be unacceptable adverse impacts on amenity, proposals will only be permitted where it is demonstrated that the benefits of the development at the proposed site clearly outweigh any unacceptable adverse impacts.

<sup>117</sup> Inappropriate development is defined in the *National Planning Policy Framework (2012)*.

<sup>118</sup> Currently the *National Planning Policy Framework (2012)*.





## Explanatory text

### Amenity

**6.66** Relevant assessments should be undertaken to demonstrate that the proposals will not have unacceptable adverse impacts on amenity or health<sup>119</sup>. This should include consideration of any impacts from transport. The issues to be considered will depend on the nature, scale and location of the proposed development. Distances from residential and recreation areas, waterways, waterbodies and other agricultural or urban sites should also be considered where appropriate and should always be taken into account where the proposal relates to landfill<sup>120</sup>.

**6.67** Where amenity impacts are likely applicants should discuss proposals and mitigation measures with the relevant Environmental Health Officer. Where health impacts are likely applicants should discuss proposals and mitigation measures with Environment Agency and the health protection authorities. Possible amenity and health impacts should be identified before applications for planning permission are submitted.

**6.68** In the case of air quality, special attention should be given where the processes could affect:

- national or international sites designated for nature conservation;

- Worcestershire's Air Quality Management Areas (AQMAs), or those of neighbouring authorities, or other areas where air quality is likely to be poor (including the consideration of cumulative impacts of developments on air quality); or
- listed heritage façades through damage or soiling as a result of emissions from point or mobile sources.

**6.69** In most cases, waste management operations are expected to be enclosed. However, the appropriateness of this as a method of mitigating amenity impacts will depend on the nature and scale of the operation. For some processes it may be appropriate to consider techniques such as dust suppression or sheeting of vehicles.

**6.70** Other facilities may need to be located at a suitable distance from sensitive receptors; for example the Environment Agency requires a bioaerosol risk assessment for development managing biodegradable waste within 250 metres of sensitive receptors. Any such assessment should be included as part of the planning application.

<sup>119</sup> Health issues are a material consideration in determining applications for planning permission. The Environment Agency regulates waste management activity in order to prevent harm to human health and the environment from pollution and emissions, currently through Environmental Permitting.

<sup>120</sup> In accordance with the *Waste (England and Wales) Regulations 2011*.

**APPENDIX KEH6**  
**Extracts of Wyre Forest District Local Plan 2016-36**  
**SP33 Pollution and Land Instability**



**Wyre Forest**  
District Council

# Local Plan 2016 - 2036

**April 2022**

Wyre Forest House, Finepoint Way, Kidderminster, DY11 7WF

### Policy SP.33 - Pollution and Land Instability

1. Development proposals must be designed in order to avoid any significant adverse impacts from pollution, including cumulative ones, on any of the following:
  - Human health and wellbeing.
  - Biodiversity.
  - The water environment.
  - The effective operation of neighbouring land uses.
  - An existing or proposed Air Quality Management Area (AQMA) <sup>(20)</sup>
2. Development proposals will not be permitted where the land is contaminated <sup>(21)</sup> and not capable of appropriate remediation without compromising development viability or the delivery of sustainable development. For sites where land contamination is suspected, an adequate site investigation survey will need to be prepared (by a competent person) to demonstrate that land contamination issues have been fully addressed or can be addressed through the development.
3. C. Development proposals will not be permitted in locations where there are risks from land instability. Development proposals within areas known or suspected to be at risk of slope instability or poor ground conditions will need to demonstrate the following:
  - a. Its structural integrity will not be compromised by slope instability;
  - b. The development does not exacerbate any instability on the site or elsewhere;
  - c. The development can tolerate ground conditions by special design; and
  - d. There is long term stability of any structures built on filled or mined land.

For sites suspected of land instability, an adequate site investigation survey will need to be prepared (by a competent person) to demonstrate that land instability issues have been fully addressed.

### Reasoned Justification

**15.1** The NPPF<sup>(22)</sup> clearly sets out, in broad terms, that pollution and land instability are material planning considerations.

**15.2** Pollution can and does have detrimental impacts on the environment and human health. In the absence of a robust local plan policy, both the quality of life of local residents and the ecology of the area would be compromised.

20 The countywide Worcestershire Air Quality Action Plan (September 2013) includes maps of the AQMA in the plan area and is available at <http://www.worcsregservices.gov.uk/media/486190/Final-AQAP-Whole-Doc-v23b-adopted.pdf>

21 As defined under Part IIA of the Environmental Protection Act 1990

22 NPPF Paragraphs 183, 184, 185, 186

**15.3** Pollution can take many forms, e.g. chemical, dust, light, noise, fumes, smell, vibration, all of which can have detrimental impacts on the environment and the quality of life. These potential adverse effects must be carefully considered in the assessment of any planning application and can be the basis for the refusal of a planning application if not adequately addressed. Developers are encouraged to have pre-application discussions with the Council to be advised on the specific requirements.

**15.4** Assessments should:

- Identify the sensitive receptor(s) which may be affected by the proposed development, including residents, businesses, land users and sensitive environmental assets;
- Consider the potential for cumulative impacts with other existing or approved development;
- Demonstrate the measures which would be implemented to ensure adverse impacts would be avoided at source or, where this is not possible, outline the proposed management and mitigation measures to reduce effects to an acceptable level; and identify the significance of any residual effects.

**15.5** Developers are expected to proactively monitor impacts and emissions to enable issues to be addressed swiftly. Close liaison with communities can support this approach, enabling feedback and dialogue on the need for and effectiveness of any mitigation measures.

**15.6** The Wyre Forest District overlies a principal aquifer of regional strategic importance in terms of water supply and there are a number of Source Protection Zones (SPZs) to protect public water resources. For proposed developments that will have an impact on or are affected by groundwater, the Environment Agency's Groundwater protection position statements should be considered to help provide appropriate control measures, especially in areas designated as Source Protection Zone 1 (SPZ1).

**15.7** The term 'poor ground conditions' referred to in Policy SP.33 may include, but is not limited to the following:

- Poorly consolidated made ground and fill material;
- Soft, weak and wet natural soils;
- Areas of shallow mine-workings and mineshafts; or
- Colliery spoil mounds.

## Minerals

**15.8** At present, minerals policy and proposals for the County of Worcestershire are set out in the policies of the Minerals Local Plan (1997) that were "saved" by the Secretary of State in September 2007. These "saved" minerals policies will be replaced by the revised Worcestershire Minerals Local Plan upon its adoption (currently anticipated in spring 2021) which will form part of the overall Development Plan for Wyre Forest District.

**15.9** Most of the north-west of Worcestershire consists of Old Red Sandstone. Carboniferous strata occur in the western parts of Wyre Forest Area where they form a western continuation of the South Staffordshire Coalfield. These strata contain layers of sandstone and shales, ironstone and coal deposits. The NPPF states that permission should not be given for the

## **APPENDIX KEH7**

### **Plans of Site and Lea Castle Village Development**



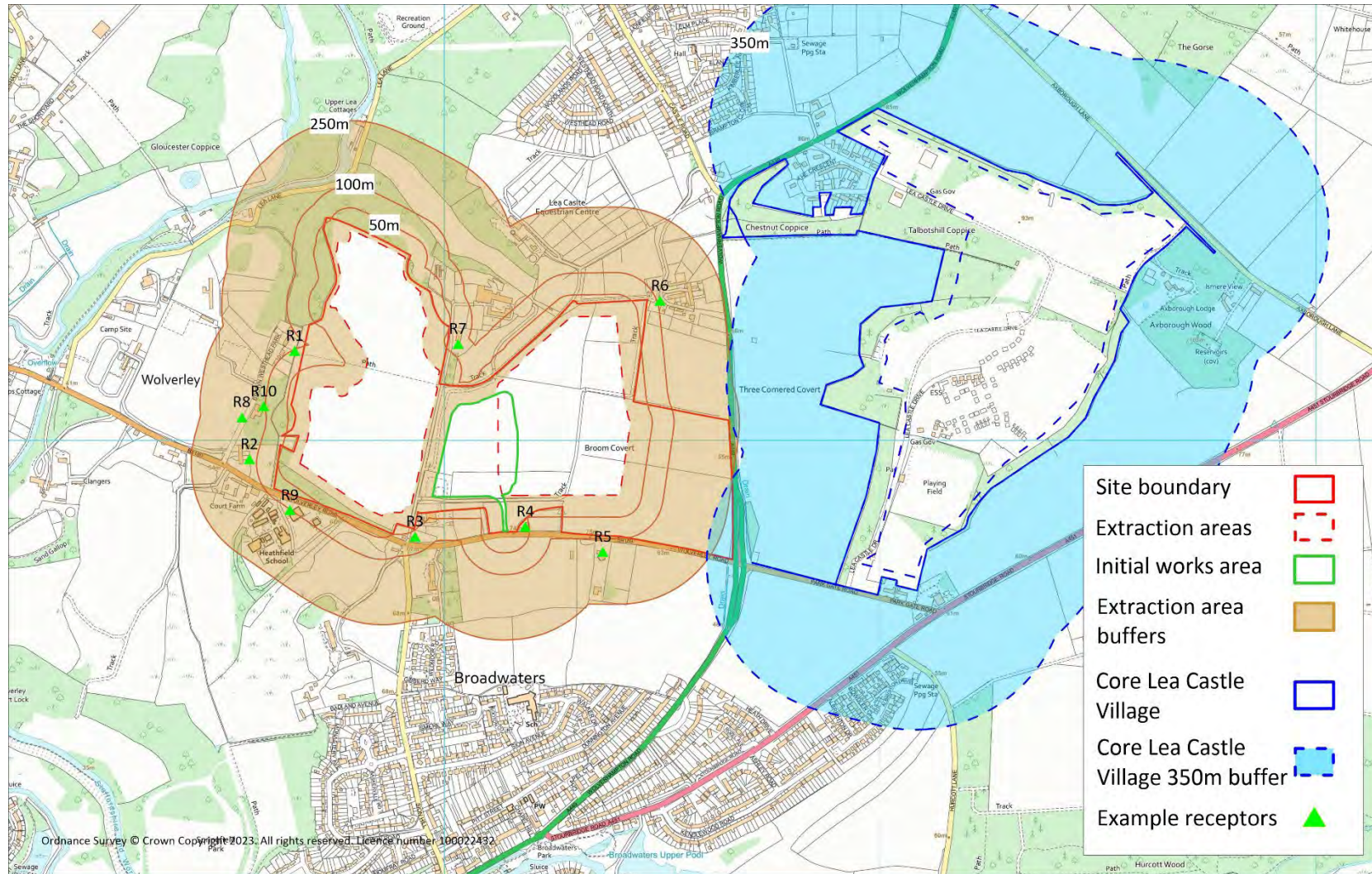


Figure 1: Location of Site and proposed Extraction area in relation to build development part of core Lea Castle Village development



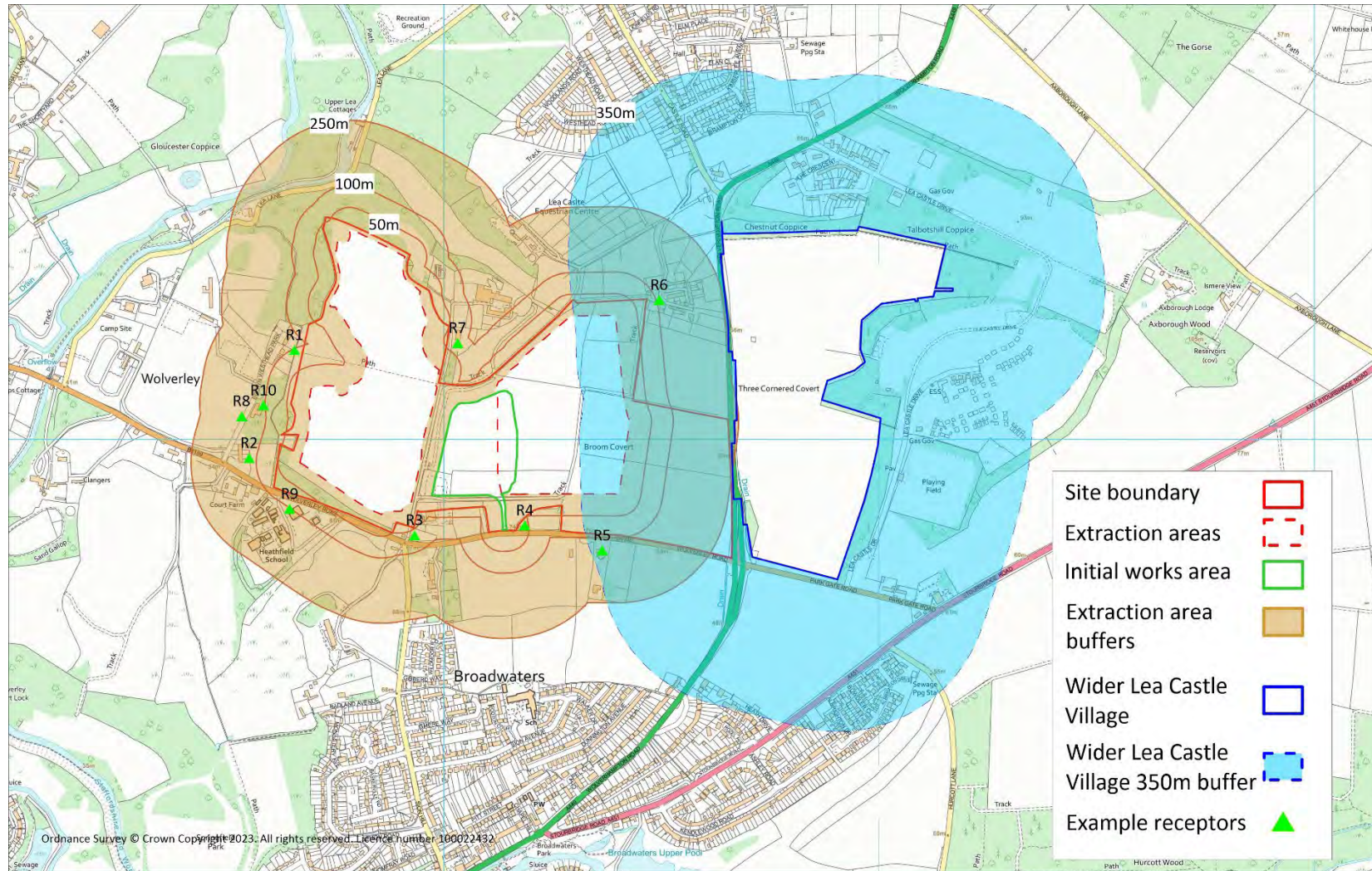


Figure 2: Location of Site and proposed Extraction area in relation to western part of wider Lea Castle Village development

## **APPENDIX KEH8**

### **Kidderminster Road AQMA**



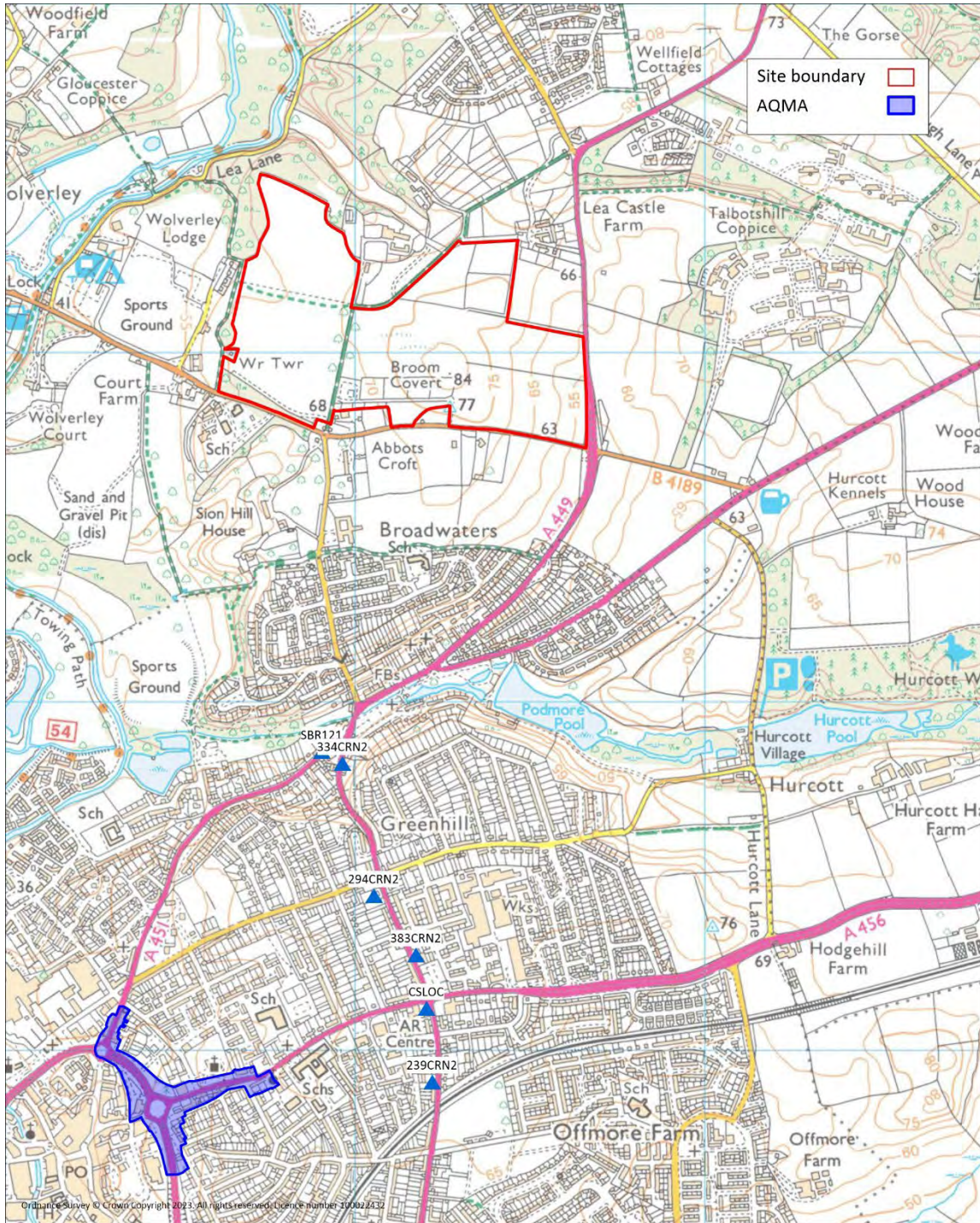


**Plan of Kidderminster Ring Road AQMA (as extracted from Defra website)**

## **APPENDIX KEH9**

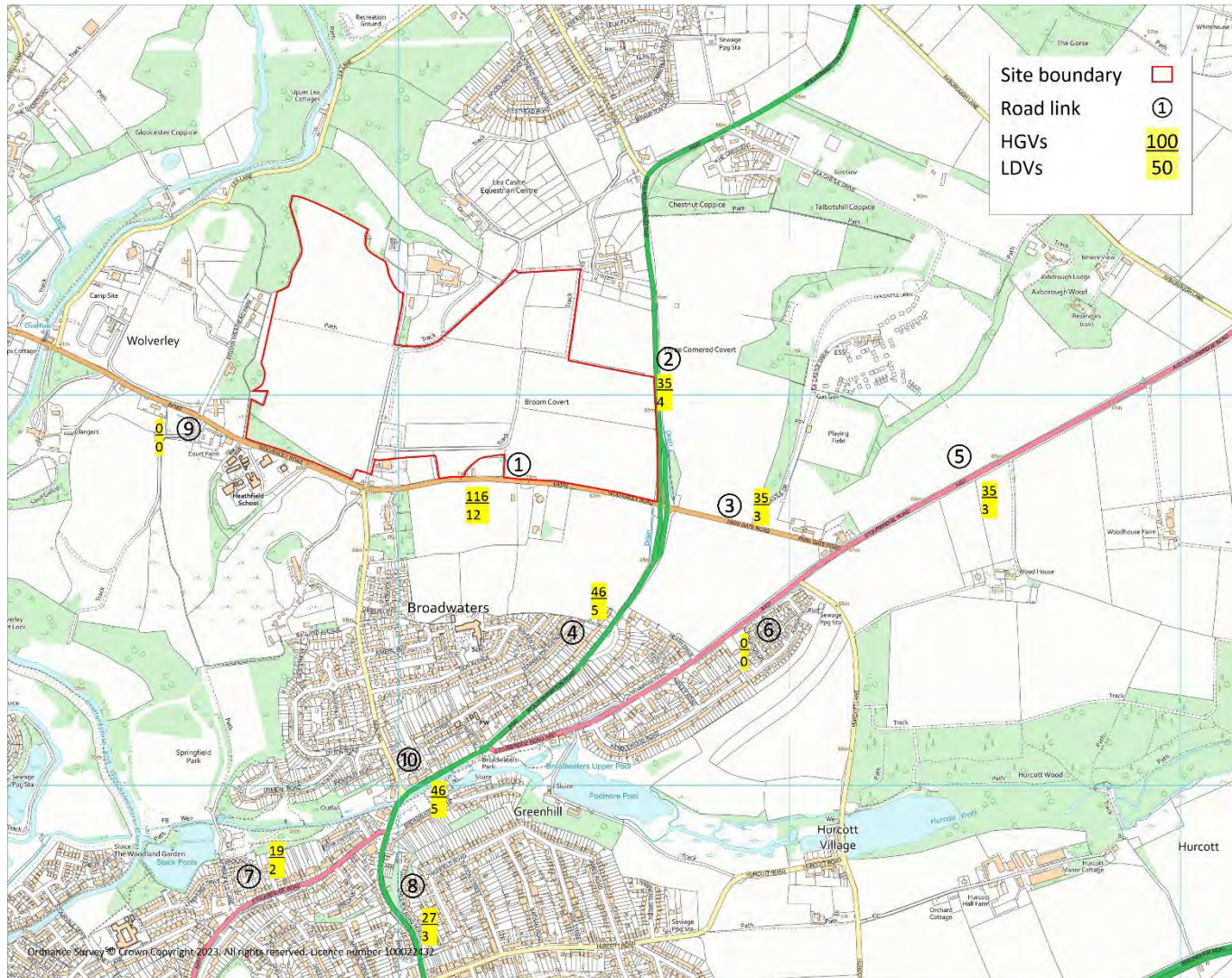
### **Plans of Site and Kidderminster AQMA and Site related HGV movements**





**Plan of Site location in relation to Kidderminster AQMA and diffusion tube monitoring on Chester Road North**





Plan of predicted development-related traffic changes

## **APPENDIX KEH10**

### **HSE Guidance in relation to Quarries and RCS**





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## Quarries

Who we are  
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One of the health risks from working in the quarry industry is that of exposure to fine dust containing crystalline silica (otherwise known as *quartz*). Quartz is found in almost all kinds of rock, sands, clays, shale and gravel. Workers exposed to fine dust containing quartz are at risk of developing a chronic and possibly severely disabling lung disease known as "silicosis". It usually takes a number of years of regular daily exposure before there is a risk of developing silicosis. Silicosis is a disease that has only been seen in workers from industries where there is a significant exposure to silica dust, such as in quarries, foundries, the potteries etc. No cases of silicosis have been documented among members of the general public in Great Britain, indicating that environmental exposures to silica dust are not sufficiently high to cause this occupational disease.

In addition to silicosis, there is now evidence that heavy and prolonged workplace exposure to dust containing crystalline silica can lead to an increased risk of lung cancer. The evidence suggests that an increased risk of lung cancer is likely to occur only in those workers who have developed silicosis.

It should also be noted that excessive long term exposures to almost **any** dust, are likely to lead to respiratory (breathing) problems.

Detailed reviews of the scientific evidence on the health effects of crystalline silica have been published by HSE in the following Hazard Assessment Documents [EH75/4](#)<sup>[1]</sup> and [EH75/5](#)<sup>[2]</sup>. These documents are available from HSE Books.

[COSHH essentials in quarries: Silica](#)<sup>[3]</sup>

[HSE guidance on Silica](#)<sup>[4]</sup>

[Failure to report a case of ill health - Successful HSE prosecution](#)<sup>[5]</sup>

## Resources

[Health and safety at quarries. Quarries Regulations 1999](#)<sup>[6]</sup>

## Related content

[Competence in health and safety](#)<sup>[8]</sup>

[RIDDOR](#)<sup>[9]</sup>

[Explosives](#)<sup>[10]</sup>

## Link URLs in this page

1. EH75/4  
<https://www.hse.gov.uk/pubns/books/eh75-4.htm>
2. EH75/5  
<https://www.hse.gov.uk/pubns/books/eh75-5.htm>
3. COSHH essentials in quarries: Silica  
<https://www.hse.gov.uk/pubns/guidance/qyseries.htm>
4. HSE guidance on Silica  
<https://www.hse.gov.uk/pubns/chan35.htm>
5. Failure to report a case of ill health - Successful HSE prosecution  
<https://www.hse.gov.uk/copd/casestudies/silica.htm>
6. Health and safety at quarries. Quarries Regulations 1999  
<https://www.hse.gov.uk/pubns/books/l118.htm>
7. More resources  
<https://www.hse.gov.uk/quarries/resources.htm>
8. Competence in health and safety  
<https://www.hse.gov.uk/competence/index.htm>
9. RIDDOR  
<https://www.hse.gov.uk/riddor/index.htm>
10. Explosives  
<https://www.hse.gov.uk/explosives/ammonium/index.htm>

## Glossary of abbreviations/acronyms on this page

### RIDDOR

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

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