

Town and Country Planning Act 1990

Section 78 Appeal

Ref: APP / E1885 / W / 22 / 3310099

**Land at Lea Castle Farm, Wolverley Road, Broadwaters, Kidderminster,
Worcestershire**

**Appeal by NRS Aggregates Limited against the refusal of planning permission by
Worcestershire County Council**

Proof of Evidence of Rachel Canham with regard to Noise –

Rebuttal to Rule 6 (Stop the Quarry Campaign) Proof

Author Rachel Canham BEng MSc CEng FIOA
Date 22 October 2024
Revision Rebuttal
WBM Ref 5342

Contents

1	Introduction	3
2	STQC Chapter 1 (Planning Matters).....	3
	<i>Paragraphs 3.43-3.48</i>	<i>3</i>
3	STQC Chapter 2 (Concept Restoration)	5
	<i>Paragraph 4.10.....</i>	<i>5</i>
	<i>Paragraphs 5.4-5.5</i>	<i>6</i>
	<i>Addendum Paragraphs 14-27</i>	<i>6</i>
	<i>Pocket Parks (Page 20 of document).....</i>	<i>9</i>
4	STQC Chapter 3 (Inert Fill Demand and Capacity Re-determination 2024).....	9
5	STQC Chapter 4 (Impact on Local Amenities)	9
	<i>Paragraphs 2.10-2.11, 4.20.....</i>	<i>9</i>
	<i>Paragraphs 4.3, 4.10.....</i>	<i>11</i>
	<i>Paragraph 4.8.....</i>	<i>12</i>
	<i>Paragraphs 4.12, 4.16.....</i>	<i>13</i>
	<i>Paragraphs 4.13, 4.14.1, 4.15.....</i>	<i>14</i>
	<i>Paragraph 4.21, Note 2.....</i>	<i>15</i>
6	STQC Chapter 5 (Economic Impact).....	16
	<i>Paragraphs 4.2, 4.4, 9.4.....</i>	<i>16</i>
	<i>Paragraph 4.5.....</i>	<i>18</i>
	Appendix A – BHS “Advice on Noise affecting routes used with horses”	20

1 Introduction

- 1.1 My name is Rachel Canham. I am a Director of Walker Beak Mason Limited (WBM), which specialises in acoustic consultancy. I hold the degrees of Bachelor of Engineering in Electroacoustics from Salford University in 1993 and a Master of Science in Environmental Acoustics from London South Bank University in 1998. I became a Chartered Engineer in 2003 and a Fellow of the Institute of Acoustics in 2011. I have been practicing as an acoustic consultant since 1993 and joined WBM in 1999.
- 1.2 I have prepared a proof of evidence regarding noise arising from quarrying, processing and restoration activities within the proposed quarry site at Lea Castle Farm.
- 1.3 Proofs have also been submitted by Worcestershire County Council (WCC) and the Rule 6 party, Stop the Quarry Campaign (STQC).
- 1.4 WCC have confirmed that they intend to defend only one reason; reason for refusal 2 (unacceptable impact on openness of the Green Belt). WCC do not intend to defend reason for refusal 3 (unacceptable impact on residential amenity and local schools) that relates to noise, and have not included any information about noise in their proof.
- 1.5 STQC confirmed that they intend to defend all nine reasons for refusal. They have prepared a proof of evidence comprising five chapters. Although they have not prepared a specific proof regarding noise, noise is mentioned in several of the chapters comprising their proof.
- 1.6 This document sets out my responses to the STQC proof chapters regarding noise.

2 STQC Chapter 1 (Planning Matters)

Paragraphs 3.43-3.48

- 2.1 Paragraphs 3.43-3.48 of Chapter 1 of the STQC proof refer to the Wyre Forest Local Plan and state:

Policy SP.16 - Health and Wellbeing

Development should help minimise negative health impacts and maximise opportunities to ensure that people in Wyre Forest District lead healthy, active lifestyles and experience a high quality of life.

- 3.43 *The development does not help minimise negative health impacts and maximise opportunities to ensure that people in Wyre Forest District lead healthy, active lifestyles and experience a high quality of life. Inspector Normington only found development would not likely result in any significant adverse noise impacts for those residing or visiting the site area.*
- 3.44 *Inspector Normington also found in the absence of any compelling technical evidence to the contrary, the appeal proposals would not result in unacceptable levels of dust on the amenity of nearby existing or proposed sensitive land uses.*
- 3.45 *Inspector Normington found dust suppression measures would serve to minimise the risk of any RCS emissions from the site. He found no compelling evidence that clearly demonstrates that the proposed development would pose a potential significant risk to the local population due to RCS.*
- 3.46 *Inspector Normington found concluded that the proposal would be unlikely to have a significant adverse effect on public health with reference to air quality.*
- 3.47 *Overall, Inspector Normington was satisfied that, subject to appropriate planning conditions setting out mitigation and compliance measures, the proposed development would not, by reason of noise, dust or poor air quality, have a significant adverse effect on the amenity of the area or the living conditions and health of those living nearby or using recreational features.*
- 3.48 *With respect, absence of significant adverse harm is not the policy test nor is it any comfort to local people. The policy test is to minimise negative health impacts and maximise opportunities for healthy, active lifestyles and experience a high quality of life.*

- 2.2 With regard to noise impacts, the general aims for national planning guidance are to avoid significant adverse impact, and mitigate and minimise adverse impacts (see the NPSE, NPPF and Planning Practice Guidance for Noise). Local planning guidance for minerals (Worcestershire Minerals Local Plan July 2022) requires sites to not give rise to unacceptable adverse impacts.

- 2.3 As noted in the NPSE, where the impact lies somewhere between the lowest observed adverse effect level and the significant observed adverse effect level, the second aim of the NPSE requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life. However, as stated in paragraph 2.24 of the Explanatory Note to the NPSE “*This does not mean that such adverse effects cannot occur*”.
- 2.4 The Planning Practice Guidance for Minerals provides guidelines for the determination of noise limits for mineral sites. Adherence to these noise limits is considered to be appropriate to avoid significant adverse impact.
- 2.5 The site noise calculations relating to operations from the proposed quarry are all at or below the suggested site noise limits presented by WBM in the noise assessment. Note that the limits are ‘suggested’ (based on the advice within Planning Practice Minerals) as it would be for the relevant planning authority to set actual noise limits.
- 2.6 Note also that the calculations are ‘worst case’ as they assume simultaneous operation of all plant items at the nearest point to the receptors. This is considered a ‘worst case’ in order to determine compliance with the suggested site noise limits in those circumstances, but such a scenario is unlikely to occur in practice.

3 STQC Chapter 2 (Concept Restoration)

Paragraph 4.10

- 3.1 Paragraph 4.10 of Chapter 2 of the STQC proof refers to the use of proposed scheme, and states:
- 4.10 NRS promote the operation as a phased restoration implying that the local communities will still be able to access the land whilst the quarrying is in operation. In reality, who will use the site when you have a massive quarrying operation in progress, the noise, dust, vehicle movements, conveyors and processing plant. Surrounded by mountainous bunds of spoil.*
- 3.2 Various Public Rights of Way (PROW) are across the site whilst the site is worked as a quarry, some of the PROWs are temporarily diverted away from active areas of extraction or infilling operations.

- 3.3 There are no planning guidance limits for Public Rights of Way (PROW). With regard to the noise levels affecting the various PROW in the locality of the proposed quarry, noise along PROW is not covered by the noise guidance set out in the PPGM. There is little guidance on threshold or relative noise levels that are appropriate for these types of receptors. The users of PROWs are considered to be transitory.
- 3.4 As the quarry site is worked over the different phases, the majority of PROW are either located behind bunds (and therefore acoustically screened from site operations) or located at a reasonable distance from active workings.
- 3.5 The highest site noise levels experienced by users of the PROWs would be experienced only for a short period of time when the person is at the closest possible approach to the site operations. As the person travels along the PROW, the site noise level should reduce as the distance from the site operations increases.

Paragraphs 5.4-5.5

- 3.6 Paragraphs 5.4-5.5 Chapter 2 of the STQC proof refer the issues of noise from other uses of another former quarry, and state:

Court Farm Quarry

- 5.4 *The Landowner is also the owner of the now defunct Court Farm Quarry on the opposite side of the B4189 only a few hundred metres from the proposed site.*
- 5.5 *When this quarrying operation ended, it was just left to the forces of nature by the owner and now its only purpose is to function as a Motocross Track which is rented out to motorcycle clubs from outside the area, the noise from the motorbikes is very loud and can even be heard in Cookley.*

- 3.7 The planning application and appeal before the inspector should be considered on its own merit. I cannot comment on the noise from activities generated from another site. It is for the planning authorities to permit (or not) ongoing activities on the site once restoration has been completed, taking noise into account in their future decisions.

Addendum Paragraphs 14-27

- 3.8 Addendum Paragraphs 14-27 Chapter 2 of the STQC proof refer to drawing reference: E2370-SGA.002 Revised Plant Layout and state:

14. *Noise level at 10m reduced by 8.3% with new plant layout.*
15. *Where is the evidence/modelling to prove that the revised plant layout and noise levels are achievable.*
16. *The comment at the bottom of the drawing states ; "PLEASE NOTE THIS IS A PRE-SALES DRAWING AND SHOULD BE USED FOR DISCUSSION/QUOTATION PURPOSES ONLY"*
17. *The noise levels stated can only regarded as an estimation for quotation purposes, it doesn't mean they are achievable, and I suspect, given the reduced size of the plant with the same throughput, the levels will be much greater.*
18. *Nobody can be really certain what the noise levels will be when until the plant is operational.*
19. *The operation of this plant of this plant will represent an exponential increase in continual background noise*
20. *Let us also put this in context during the daily operation of the quarry*
21. *If the quarry goes ahead this will become an industrialised area, the openness of the great belt will disappear and the tranquil qualities that make this land a desirable space for the local populations to enjoy will be gone.*
22. *There will be the constant machinery noise from the crushing and processing plant*
23. *Noise from the excavators and tipper trucks constantly moving freshly dug sand and gravel to the processing plant, they will also be transporting inert waste for the infill(let's not forget their vehicle reversing alarms as well).*
24. *Lorries transporting the sand and gravel from site and importing waste infill*
25. *The whole site will be a constant discordant cacophony of noise which will make the area unusable for anyone but the quarrying company.*
26. *All amenity for people to enjoy the site will be lost.*
27. *I am a resident of Cookley, I live next door to the village school, noise carries a considerable distance, I can hear Mr Strong on his tractor in my garden, one tractor, if the quarry was in operation, it would be heard in Cookley, Lea Castle, Broadwaters, Wolverley and everywhere in between, at those distances it might be well be regarded as acceptable levels, but it will be a constant back ground noise for 10 years or longer, a continual daily drone, day after day, year after year.*

28. *This does nothing to protect and enhance the surrounding environment, it is a sudden and permanent degradation, there is almost a paradox going on here, we are building thousands of homes within 200m of the site, encouraging families to settle in the area, yet at the same time we are on the brink of allowing a massive quarrying operation within the vicinity, how can they be considered to be mutually acceptable concepts.*

- 3.9 Drawing reference: E2370-SGA.002 Revised Plant Layout shows the sound pressure levels at different distances and locations from the new processing plant. The noise output varies depending on the direction from the plant – however the worst case, highest noise level has been used in the calculations in order to assess the worst case.
- 3.10 The requirements for noise output from the processing plant once installed on site and operational could be secured by an appropriately worded planning condition, and/or checked on a regular basis by ongoing noise monitoring. Likewise, noise from site vehicles under the control of the quarry operators could be required to use broadband / white noise reversing alarms rather than beepers, under an appropriately worded planning condition.
- 3.11 All of the noise sources, including processing plant, mobile plant on site and vehicles have been included in the noise calculations, which demonstrate that the site noise levels at the adjacent receptors, although likely to be audible at times, will be at or below appropriate planning noise limits for such activities. Note also that the calculations are ‘worst case’ as it assumes simultaneous operation of all plant items at the nearest point to the receptors, which is unlikely to occur in practice.
- 3.12 The operation of a quarry may change the character of the area to include some industry. However, many of the noise sources associated with the quarry are already present in the locality including HGV movements along local roads and engine noise such as that associated with tractors and agricultural activity.
- 3.13 See also the comments above regarding Chapter 1 (Planning Matters). With regard to noise impacts, the general aim for national planning guidance is to avoid significant adverse impact, and mitigate and minimise adverse impacts – this does not mean that noise will not be heard, but that the site noise is as an acceptable magnitude.

- 3.14 As noted in the Noise Policy Statement for England (NPSE), where noise impact lies between the lowest observed adverse effect level and the significant observed adverse effect level, reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life. However, as stated in paragraph 2.24 of the Explanatory Note to the NPSE “*This does not mean that such adverse effects cannot occur*”.

Pocket Parks (Page 20 of document)

- 3.15 Pocket Parks (page 20) Chapter 2 of the STQC proof refers to the inclusion of pocket parks in the final restoration plan and includes the text:

The pocket park on the edge of phase 3 is located adjacent to the Wolverley rd with all the inherent traffic noise , hardly a suitable place for a park, the proposed bridleway, leading to it is also next to the main road, totally unsuitable for horses.

- 3.16 The pocket park adjacent the Phase 3, by the side of Wolverley Road is the first of three pocket parks to be developed as park of the restoration plan. Once works are complete in Phases 4 and 5 and the plant area, two other pocket parks are proposed that are located further away from Wolverley Road and as such will be exposed to lower levels of road traffic noise.

4 STQC Chapter 3 (Inert Fill Demand and Capacity Re-determination 2024)

- 4.1 There are no comments regarding noise in this chapter.

5 STQC Chapter 4 (Impact on Local Amenities)

Paragraphs 2.10-2.11, 4.20

- 5.1 Paragraphs 2.10-2.11, 4.20 of Chapter 4 of the STQC proof refers to bridleways and state:

- 2.10 *The current bridle path is quiet, with no noise from the main road, it is peaceful, and during our early morning rides in the Summer you'll see a lot of wildlife including deer, foxes, owls, pheasants etc utilising it too. Riders don't have to worry about traffic, which has got a lot worse in recent years. The proposal of bunds or bales of hay along the drive will certainly not drown out the sound of a full-time working quarry, removing the tranquillity and calm for the next eleven plus years.*
- 2.11 *I refer to document CD15.13 Lea Castle Farm Non-Technical Summary 8.10.4 In respect of all site PROW, appropriate safety fencing will be in place together with small scale visual mitigation measures including the placement of straw bales to screen temporary quarry activities. So the openness of hacking my horse has been replaced by safety fencing and bunds or straw bales so I'm now riding through a narrow tunnel with no visual openness, natural light, and significant noise from the quarry that my horse can't see either. I cannot see over the lowest height bunds of 3m and neither can my horse who is a flight or fight animal.*
- ...
- 4.20 *The additional bridle way does not outweigh the 10+ years of noise, dust and loss of quiet open space if this quarry is approved, because no noise mitigation has been put into place at any point during this plan if riders were forced to use this revised bridle way. Or for the horses living in proximity the site itself. What is being proposed conflicts with several references from their website as noted above.*
- 5.2 Various Public Rights of Way (including bridleways) occur across the site whilst the site is worked as a quarry, some of which are temporarily diverted away from active areas of extraction or infilling operations.
- 5.3 There are no planning guidance noise limits for PROW. With regard to the noise levels affecting the various PROW in the locality of the proposed quarry, noise along PROW is not covered by the noise guidance set out in the PPGM. There is little guidance on specific or relative noise levels that are appropriate for these types of receptors. The users of PROWs are considered to be transitory.
- 5.4 As the quarry site is worked over the different phases, the majority of PROW are either located behind bunds (and therefore acoustically screened from site operations) or located at a reasonable distance from active workings.
- 5.5 In order to provide acoustic screening, bunds will need to would block the 'line of sight' between the noise sources (site plant) and the receptors, thus providing acoustic screening.

- 5.6 The highest site noise levels experienced by users of the PROWs would be experienced only for a short period of time when the person is at the closest possible approach to the site operations. As the person travels along the PROW, the site noise level should reduce as the distance from the site operations increases.
- 5.7 Once the site has been restored, the original PROWs are to be re-instated and, in some places, upgraded.
- 5.8 Comments on the responses to horses to noise are addressed in subsequent paragraphs.

Paragraphs 4.3, 4.10

- 5.9 Paragraphs 4.3, 4.10 of Chapter 4 of the STQC proof refer to the response of horses to noise and state:

4.3 The BHS stated in their objected in May 2024 Sudden movement, noise and continuous levels of noise can be a hazard for equestrians as horses are flight animals, therefore these hazards should be located away from the highway to avoid a psychological obstruction.

...

4.10 Horses are prey animals and their usual response to danger is flight. A horse may also spin to identify the direction of the threat. A horse prevented from running by its rider or driver may plunge or spin around in a small area while trying to see the threat. There is a danger to a handler, rider or carriage-driver (equestrian) who may be knocked over or thrown during the spin or bolt, and even if staying with the horse, may not be able to stop before losing contact or encountering another hazard. While in flight mode, a horse is difficult to control and could run into a dangerous situation which it would normally avoid (such as traffic)

(Source <https://www.bhs.org.uk/media/qb4dgvr/f/noise-1218.pdf>)

- 5.10 With regard to the impact of sound on horses, the British Horse Society (BHS) gives some guidance on a horse's response to noise in the document "Advice on Noise affecting routes used with horses" (Nov 22). This document is reproduced in Appendix A and includes the following text:

“Considering how similar a noise may be to a natural predator is a useful guide to whether a horse will be troubled by it. A quiet rustling is likely to have greater impact than a high speed train because the former could easily be associated with a predatory animal moving into position to attack whereas a train is a continuous steady loud noise which is not clearly a predator; it can be heard from far away and the majority of horses these days have been exposed to and accepted commonly occurring mechanical noises from their birth. There are many situations of horses unperturbed by trains or motor traffic, even for the first time, in fields or on bridleways alongside a railway or motorway. Because a human hears a sound, it is often assumed that this is what is troubling a horse, but the horse may have heard that sound long before and already dismissed it as not a threat, but could be reacting to a sound or movement that a human has not seen, possibly even behind it.”

5.11 Note that noise from the quarry will be mechanical in nature.

Paragraph 4.8

5.12 Paragraph 4.8 of Chapter 4 of the STQC proof refers to regarding footpaths and states:

4.8 The proposal to move the footpath makes it less accessible to all to enjoy. The current footpath is long and flat with no inclines so can be utilised by all. It is quiet, peaceful and the surrounding views can be enjoyed by all walking along it. The new footpath will be sited alongside the A449 and B4189 both busy noisy roads, users will lose the peace and calm of the previous footpath, they will lose the views, but they will see plenty of traffic, and hear lots of traffic from a busy A and B road. There are portions of the new route which are steep so the disabled, families with buggies and prams etc will lose the use altogether. The current footpath is a direct safe route from Cookley to Wolverley or the Sion Hill area of Kidderminster. The proposed new route is not direct, there is no clear communication from NRS and PROW on the dedicated new routes, footpath or bridle way. Please see email here (Source http://e-planning.worcestershire.gov.uk/swift/MediaTemp/989-28226.06.14_Response_to_PROW_Officer.pdf) So cannot understand how this application can be agreed with such diluted information on such a heavily utilised right of way by the general public.

5.13 Various Public Rights of Way (PROW_ are across the site whilst the site is worked as a quarry, and some of the PROWs are temporarily diverted away from active areas of extraction or infilling operations. The diverted PROWs are generally across fields – the PROW adjacent Wolverley Road is a new, proposed route.

- 5.14 There are no planning guidance noise limits for PROW. With regard to the noise levels affecting the various PROW in the locality of the proposed quarry, noise along PROW is not covered by the noise guidance set out in the PPGM. There is little guidance on specific or relative noise levels that are appropriate for these types of receptors. The users of PROWs are considered to be transitory.
- 5.15 As the quarry site is worked over the different phases, the majority of PROW are either located behind bunds (and therefore acoustically screened from site operations) or located at a reasonable distance from active workings.
- 5.16 In order to provide acoustic screening, bunds will need to would block the 'line of sight' between the noise sources (site plant) and the receptors, thus providing acoustic screening.
- 5.17 The highest site noise levels experienced by users of the PROWs would be experienced only for a short period of time when the person is at the closest possible approach to the site operations. As the person travels along the PROW, the site noise level should reduce as the distance from the site operations increases.
- 5.18 Once the site has been restored, the original PROWs are to be re-instated and, in some places, upgraded.

Paragraphs 4.12, 4.16

- 5.19 Paragraphs 4.12, 4.16 of Chapter 4 of the STQC proof refer to concerns about noise mitigation and state:

4.12 Similar concerns raised regarding a former Leicester quarry, with regard to the transportation of inert waste & soil (as proposed for the Lea Castle application) saw the application being refused as follows: "...Taking into account British Horse Society comments on the potential for injuries to horses and safety concerns, the inspector concluded that the size of lorries and frequency of traffic would conflict with other users of the lane and make the access unsafe, contrary to the requirement of minerals and waste local plan policy. She also found details of a proposed acoustic fence outside the equestrian centre insufficient to demonstrate that lorry noise effects on occupiers and horses kept there would be sufficiently mitigated... ..Inspector: Rebecca Norman; Written representations..."

....

4.16 *The appeal decision referenced above and fully available at Appendix 7 concludes at clause 16 stating “Consequently, I am unable to conclude that the proposed development would comply with Policy DM2 of the LMWLP, insofar as it relates to the need to demonstrate that minerals and waste development would be acceptable in terms of potential effects from noise to adjoining land uses and users, amongst other things.”. This clearly gives the inquiry precedence to refuse the appeal based on the noise effects of other land users.*

5.20 The planning application and appeal before the inspector should be considered on its own merit. I cannot comment on the decisions made with regard to noise from other applications without having specific information about the noise levels generated by the subject of such an application.

Paragraphs 4.13, 4.14.1, 4.15

5.21 Paragraphs 4.13, 4.14.1, 4.15 of Chapter 4 of the STQC proof refers to noise from conveyors and state:

4.13 *Horses will not be able to be ridden over the conveyor that the application is proposing is buried under the tree lined drive, which currently is part of the bridleway / pathway. The vibration across the bridle way / pathway will be noisy and unpredictable. Unlike police horses who are trained for such activities these are leisure and competition horses. So, the reaction here will be to ‘spook’ or run from the noise and vibrations, causing injury or at worse death.*

...

4.14.1 *Safety Concerns for Riders and Horses: Horses are sensitive animals that can be easily spooked by unfamiliar sights, sounds, and vibrations. The noise and movement from an underground conveyor belt could cause sudden distress or unpredictable behavior in horses, making the bridleway unsafe for riders. Any disturbance could lead to accidents, particularly in an area where riders expect peace and quiet.*

...

4.15 *The BHS have stated in their statement*

...The Lea Castle Quarry proposals indicate that a conveyor below would be located under bridleway WC 626B. Sudden movement, noise and continuous levels of noise can be a hazard for equestrians as horses are flight animals, therefore these hazards should be located away from the highway to avoid a psychological obstruction.

Which further concrete the fact that you cannot and should not put a conveyor under a public bridleway utilised by horse riders...

5.22 The noise from the conveyor would only be experienced at that the crossing point and the conveyor noise level will reduce rapidly as the distance between the conveyor and the rider/horse increases. Within a couple of minutes, it would be expected that the horse and rider would be at least 200 metres from the calculation point and therefore it would be expected that the conveyor noise levels would have reduced by at least 20 dB(A).

5.23 With regard to the impact of sound on horses, the British Horse Society (BHS) gives some guidance on a horse's response to noise in the document "*Advice on Noise affecting routes used with horses*" (Nov 22), including the following:

"Considering how similar a noise may be to a natural predator is a useful guide to whether a horse will be troubled by it. A quiet rustling is likely to have greater impact than a high speed train because the former could easily be associated with a predatory animal moving into position to attack whereas a train is a continuous steady loud noise which is not clearly a predator; it can be heard from far away and the majority of horses these days have been exposed to and accepted commonly occurring mechanical noises from their birth. There are many situations of horses unperturbed by trains or motor traffic, even for the first time, in fields or on bridleways alongside a railway or motorway. Because a human hears a sound, it is often assumed that this is what is troubling a horse, but the horse may have heard that sound long before and already dismissed it as not a threat, but could be reacting to a sound or movement that a human has not seen, possibly even behind it."

5.24 Note that as the conveyor would be a constant non-fluctuating noise source, there would be no sudden loud aspect of the noise that might be expected to startle the horse.

Paragraph 4.21, Note 2

5.25 Paragraph 4.21, Note 2 of Chapter 4 of the STQC proof refers to noise from bunds and states:

2 *Noise Amplification: Bunds can unintentionally trap and reflect noise from quarry operations, such as machinery, blasting, or vehicle movements, intensifying the sound near bridleways. Loud, unexpected noises can easily frighten horses, leading to erratic behaviour or accidents.*

5.26 The bunds are formed from piled earth which are considered to be acoustically 'soft' rather than 'hard' and as such would not reflect noise.

- 5.27 The material is extracted from site using excavators. There will not be any blasting used at this site.
- 5.28 When behind a bund, the physical structure of the bund would block the 'line of sight' between the noise sources (site plant) and the receptors, thus providing acoustic screening. This is sometimes referred to as being in the shadow zone of the bund.
- 5.29 If a receptor moved so it was no longer screened from a noise source by a bund, there could be a perceived increase in noise due to the lack of acoustic screening as the receiver (e.g. person or horse on PROW) moves out of the shadow zone of the bund. However, amplification of the site noise would not occur.
- 5.30 With regard to the impact of sound on horses, the British Horse Society (BHS) gives some guidance on a horse's response to noise in the document "*Advice on Noise affecting routes used with horses*" (Nov 22), including the following:

"Considering how similar a noise may be to a natural predator is a useful guide to whether a horse will be troubled by it. A quiet rustling is likely to have greater impact than a high speed train because the former could easily be associated with a predatory animal moving into position to attack whereas a train is a continuous steady loud noise which is not clearly a predator; it can be heard from far away and the majority of horses these days have been exposed to and accepted commonly occurring mechanical noises from their birth. There are many situations of horses unperturbed by trains or motor traffic, even for the first time, in fields or on bridleways alongside a railway or motorway. Because a human hears a sound, it is often assumed that this is what is troubling a horse, but the horse may have heard that sound long before and already dismissed it as not a threat, but could be reacting to a sound or movement that a human has not seen, possibly even behind it."

- 5.31 Note that noise from the quarry will be mechanical in nature.

6 STQC Chapter 5 (Economic Impact)

Paragraphs 4.2, 4.4, 9.4

- 6.1 Paragraphs 4.2, 4.4, 9.4 of Chapter 5 of the STQC proof raises concerns about noise impact on employment at tourism and state:

4.2 *Impact of Perception in Economic Decision Making*

Perception plays a significant role in shaping economic decisions. For example, even if data suggests a development might boost employment, negative perceptions—such as fears about environmental harm, noise, or pollution—can deter investment, reduce property values, or drive away tourists. In cases of quarrying, the perception of harm to the landscape or quality of life can have an outsized impact on tourism and local businesses, even if actual impacts are less severe than expected.

...

4.4 *Likelihood of Reductions in Tourism and Leisure*

Quarries often involve large-scale land disturbance, which can degrade the scenic value of rural areas. Tourists seeking outdoor recreation, eco-tourism, or countryside experiences may be discouraged by the visual impact, noise, and dust from quarry operations. Over time, the presence of a quarry can lead to a reduction in visitors, impacting hospitality businesses, tour operators, and local attractions, all of which rely on maintaining a pristine environment.

Just because NRS have submitted reports on dust and noise that say there aren't impacts doesn't mean people still won't behave like there will be.

...

9.4 *The previous inspector found “no conclusive evidence” of a negative impact but also only found that the impact of the quarry on the local economy would be “a benefit of minor significance”. The perception of local people of health impacts from dust and noise gives rise to significant negative human factor impact on the local economy. This will have impact not just in perception but in reality as people will use these negative feeling to decide on where they spend their money be it on leisure and tourism or on education of their children. Risk to the existing local economy is in my view high whilst benefit of quarrying is low.*

6.2 With regard to noise impacts, the general aim for national planning guidance is to avoid significant adverse impact, and mitigate and minimise adverse impacts (see the NPSE, NPPF and Planning Practice Guidance for Noise). Local planning guidance for minerals (Worcestershire Minerals Local Plan July 2022) also requires sites to not give rise to unacceptable adverse impacts.

6.3 Mitigation measures have been included in the form of bunds to provide acoustic screening from different parts of the site as the scheme progresses.

6.4 The worst case site noise calculations from operations from the proposed quarry are all at or below the suggested site noise limits, in order to avoid significant adverse impact.

Paragraph 4.5

6.5 Paragraph 4.5 of Chapter 5 of the STQC proof raises concerns about the noise impact on the school and state:

4.5 Why Parents May Not Want to Send Children to Schools Near Quarries

Parents may be hesitant to send their children to schools located near quarries due to concerns about pollution, noise, and safety. Dust and air pollution from quarries can aggravate respiratory conditions, and the noise from blasting can be disruptive to the learning environment. Moreover, the perception of environmental degradation around a school can lead to fears about long-term health effects, making schools near quarries less attractive to parents who prioritize their children's well-being

6.6 The material is extracted from site using excavators. There will not be any blasting used at this site.

6.7 The previous baseline noise surveys at the location used to represent Heathfield Knoll gave the following results:

Date	Baseline Noise Survey Results dB	
	Ambient dB $L_{Aeq,T}$	Background dB $L_{A90,T}$
June / July 2018	55 (average)	48 (average)
February 2023	57, 60	53, 55
August 2024	56, 57	45, 46

6.8 Based on the background noise levels, the site noise limit for the school is 55 dB $L_{Aeq,1h}$.

6.9 The calculated site noise affecting the school is up to 53 dB $L_{Aeq,1h}$ for the original scheme and 45 dB $L_{Aeq,1h}$ for the revised scheme. Both of these values are below the site noise limit.

6.10 In addition, the calculated site noise is also below the existing ambient noise level affecting the school site, which is generally due to road traffic noise.

6.11 Although it is likely that noise from the quarry will be audible at time on parts of the school site, it is likely to be below the level of the road traffic noise. As such, the noise from the quarry is unlikely to be any more disruptive than the existing levels of road traffic noise.

Rachel Canham BEng MSc CEng FIOA

Appendix A – BHS “Advice on Noise affecting routes used with horses”

Advice on Noise affecting routes used with horses

The
British
Horse
Society

The law and management of public access rights vary widely between the four countries of the United Kingdom. Practical elements of the following advice apply in all countries but the legal requirements in Scotland and Northern Ireland may differ from those in England and Wales.

More advice is available on bhs.org.uk/accessadvice.

IMPORTANT This guidance is general and does not aim to cover every variation in circumstances. Where it is being relied upon, The Society recommends seeking advice specific to the site.

A horse’s range of hearing is greater than a human to higher frequencies (over 33 kHz in the horse compared with under 20 kHz in humans) although a horse may not be able to hear the lowest frequencies audible to humans.¹ Hearing ability is very important to survival for a horse and its ears can pick up sound at a lower volume and a greater distance than will be detected by a human. As with humans, there is variation in quality of detecting sound at the extremes of the range with some horses hearing much better than others. Age may decrease aural function, as may certain health conditions.

Horses are prey animals and their usual response to danger is flight. Their instincts will assume that unexpected noises are a predator and a threat so they will flee first and check later. A horse will hear a sound, quite possibly not detected by a human near it, may freeze to remove its own noise, then spin and run away from the noise. Depending on temperament and the perceived threat level, the horse may stop and turn back to the source of the noise to check whether further action is needed, or may carry on running. A horse may also spin to identify the direction of the threat. A horse prevented from running by its rider or driver may plunge or spin around in a small area while trying to see the threat.

There is a danger to a handler, rider or carriage-driver (equestrian) who may be knocked over or thrown during the spin or bolt, and even if staying with the horse, may not be able to stop before losing contact or encountering another hazard. While in flight mode, a horse is difficult to control and could run into a dangerous situation which it would normally avoid (such as traffic).

Horses can become difficult to handle in conditions where there is a continuous level of noise because it may mask other sounds that could be a threat. This can be a reason for unsettled behaviour in wind or by the sea or heavy traffic, especially in an unusual environment where the horse is not comfortable with the general threat level.

¹ Saslow, C. A. (2002) Understanding the perceptual world of horses. Applied Animal Behaviour Science, 78: 209-224.

Nov-22

Noise affecting routes used with horses

Variation in their temperament, the nature of the environments they have known and their confidence will affect how horses respond to a noise. Generally, sudden noises are more likely to trigger flight responses with the severity of reaction increasing with proximity of the noise.

Horses can become accustomed to noise, whether short sharp sounds, continuous noise or discontinuous noise (e.g. gunshot, motorway, train). Police and military horses have proven their resilience to noise but the training involved is highly skilled and the horses are very carefully selected. Some horses would never reach the same acceptance with the same training. Such training is beyond the scope of most horse owners therefore it should be assumed that noise is likely to be distressing to horses which are not accustomed to it. If a human may be disturbed by a noise, then so may a horse be disturbed, but a horse will be concerned about many sounds which humans are able to recognise and dismiss instantly.

Temperament and experience will affect whether individual horses can become habituated to noise or whether their distress level continues or rises. It must not be assumed that a noise that is accepted by one horse will be accepted by all.

Environments which are likely to produce noise should be avoided in the vicinity of routes used by equestrians, particularly byways, bridleways and minor roads which should be protected for quiet recreation and exercise. Sudden loud noises should particularly be avoided, e.g. birdscarer gas-guns.

The impact of noise on horses can be reduced by acoustic barriers; by vegetation or buildings. Where noise near horses is unavoidable, mitigation through the range of sound for horses should be considered through use of acoustic barriers where possible.

Considering how similar a noise may be to a natural predator is a useful guide to whether a horse will be troubled by it. A quiet rustling is likely to have greater impact than a high speed train because the former could easily be associated with a predatory animal moving into position to attack whereas a train is a continuous steady loud noise which is not clearly a predator; it can be heard from far away and the majority of horses these days have been exposed to and accepted commonly occurring mechanical noises from their birth. There are many situations of horses unperturbed by trains or motor traffic, even for the first time, in fields or on bridleways alongside a railway or motorway. Because a human hears a sound, it is often assumed that this is what is troubling a horse, but the horse may have heard that sound long before and already dismissed it as not a threat, but could be reacting to a sound or movement that a human has not seen, possibly even behind it.

If this is a saved or printed copy, please check [bhs.org.uk/accessadvice](https://www.bhs.org.uk/accessadvice) for the latest version (date top of page 2).