

# 10dB acoustics

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## **PROPOSED RESTORATION OF BARRINGTON QUARRY, CAMBRIDGESHIRE**

### **ENVIRONMENTAL STATEMENT REVIEW**

**Client:** Ms Emma Fitch, Minerals and Waste Planning, Cambridgeshire County Council,  
Shire Hall, Castle Hill, Cambridge, CB3 0AP

**Brief:** To examine the submitted Environmental Statement in respect of noise  
and

**Site:** Cemex, Barrington Quarry, Cambridgeshire.

**Dates:** This report 3 July 2018

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# CONTENTS

Page No

1	OBJECTIVES.....
2	ADVICE FROM
3	ASSESSMENT OF NOISE CHAPTER (APPENDIX A OF
4	ASSESSMENT OF VIBRATION CHAPTER (APPENDIX B OF ES)
5	CONCLUSIONS.....

## **1. OBJECTIVES**

- 1.1. Cambridgeshire County Council has granted planning consent for importation by rail of restoration material to infill an existing quarry void and the operators of the site, CEMEX, have applied to extend the period for restoration and increase the amount of
- 1.2. The application includes an Environmental Statement (ES) that contains noise and vibration assessments, the purpose of this report is to review these assessments and advise the County Council regarding their content.

## **2. ADVICE FROM COUNSEL**

- 2.1. Following the submission of the ES comments were made and passed to the authors of the Noise Chapter, WBM, discussions were held and a final response to those comments was provided dated 4 June 2018. In view of concerns regarding the interpretation and applicability of the current guidance relating to this type of development the County Council has sought advice from Counsel and this has been taken into account in this review. It should be noted that the comments from Counsel
- 2.2. In this regard it is appropriate to note that since the original consent was granted for this site the planning guidance system has changed radically and the standards used in assessing that application have either been withdrawn or changed. Furthermore, information has emerged from a recent planning appeal in respect of fracking in Lancashire (Department for Communities and Local Government, Cuadrilla Bowland Ltd and Cuadrilla Elswick Ltd) giving advice on noise standards for minerals planning
- 2.3. In view of its importance in clarifying the current position regarding guidance and standards the advice from Counsel is considered first, followed by an examination of
- 2.4. The points that Counsel was requested to clarify are as follows;
- Whether the Planning Practice Guide Minerals (PPGM) applies to this site and development.
  - Whether BS4142:2014 'Methods for rating and assessing industrial and commercial sound' was relevant to the assessment of some noise aspects of this application.
  - What is the correct interpretation of the noise limits contained in the PPGM in the context of an Environmental Statement?

- What guidance is available on what would constitute an “unreasonable burden” as applied to the provision of noise mitigation?
  - What degree of evidence should be provided if a claim of “unreasonable burden” is made based on financial impact?
- 2.5. The first three points are of critical importance in determining what noise limits should be applied to certain activities, in particular noise from quarry infill operations affecting existing and proposed residential receptors, and noise from operations at
- 2.6. The last two points relate particularly to the provision of physical mitigation in respect of the area near to Wilsmere Down Farm and potentially to Foxton Sidings.
- 2.7. **Whether the Planning Practice Guide Minerals (PPGM) applied to this site and development** – the advice from Counsel may be summarised as follows. Firstly, provided that what is applied for comprises “normal operations” significant weight should be given to the PPGM. It is clear that this is National Guidance from the Government on noise standards for minerals applications.
- 2.8. Secondly, in the recent decision on fracking in Lancashire this guidance was central to setting of the appropriate night time noise level. The Secretary of State clearly adopted the Inspector’s analysis in the decision letter. The Inspector gave considerable weight to the PPGM guidance in arriving at his “*Conclusions on the appropriate night-time noise limit*”.
- 2.9. Thirdly, the only use of the Foxton Sidings is for the restoration of the quarry and thus it is absolutely part of the operations of the restoration, and the importation by rail is preferable than by road for good planning reasons.
- 2.10. **Whether BS 1 2:201 “Methods for rating and assessing industrial and commercial sound” was relevant to the assessment of some noise aspects of this application** – the

original application for infilling at the quarry was determined in 2011, prior to the

publication of the current version of 854142, which was released in 2014. There are significant differences between the two versions and in respect of this application it is important to note that paragraph 1.3 (h) of 854142:2014 states that, *The standard is not intended to be applied to the rating and assessment of sound from: h) Other sources falling within the scopes of others standards or guidance.* This limitation was not contained in 854142:1997, which was used in determining the original

- 2.11. It was this section that led the Inspector in the Lancashire Fracking decision to give

*The scope of this British Standard is set out in section 1 of the document. It describes methods for rating and assessing sound of an industrial and/or commercial nature. The methods described use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident. It states that the standard is not intended to be applied to the rating and assessment of sound from sources falling within the scopes of other standards or guidance. ....I conclude that, although BS 4142 highlights some useful concepts which may assist in the assessment of likely noise impacts, its specific application to the proposed development should be viewed with some caution and all*

- 2.12. This reasoning was endorsed by the Secretary of State in the Decision Letter.

- 2.13. **What is the correct interpretation of the noise limits contained in the PPGM in the context of an Environmental Statement?** – Counsel has advised that the correct interpretation of the 42dB L<sub>Aeq,1h</sub> night time noise limit is that it is an upper longstop limit, not one that will be acceptable in all cases. The reasons for this are as follows.

- 2.14. Firstly the wording of the PPGM paragraph 21 is consistent with this meaning. That is why it speaks of reducing to a minimum any adverse impacts. If 42dB was always acceptable that would not make sense.
- 2.15. Secondly the last sentence of paragraph 21 suggests that 42dB will not always be the correct limit. The sentence says *“Care should be taken, however, to avoid any of these suggested values being implemented as fixed thresholds as specific circumstances may justify some small variation being allowed...”*
- 2.16. Thirdly this accords with the fracking decision endorsed by the Secretary of State.
- There the Inspector clearly set this out in analysis that was accepted by the Secretary of

*However, it seems to me that the in any event level of 42dB(A) LAeq,1h ;free field at a noise sensitive property is plainly an upper limit or a ceiling. Indeed, this is how Dr Hiller describes it in para 5.45 of his proof of evidence. Subject to the issue of unreasonable burdens, para 21 of PPGM requires that noise limits are set to reduce to a minimum any adverse impacts. I concur with LCC that that must refer to significant adverse impacts and other adverse impacts within the noise hierarchy. In terms of the noise hierarchy, adverse impacts cease to arise only below the threshold of the LOAEL (Lowest Observable Adverse Effect Level).*

*Having regard to para 21 as a whole, it is clear that this upper limit or ceiling cannot reasonably be regarded as representing a LOAEL. Its drafting reflects the assumption that, in principle, adverse effects can occur below 42dB(A) LAeq, 1h (free field). If it were otherwise, then no requirement to reduce to a minimum below that level would have been imposed. Furthermore, the noise hierarchy table set out PPGM, para 5, makes it clear that the requirement to mitigate and reduce to a minimum applies to the observed adverse effects which occupy the ground between the LOAEL and the SOAEL (Significant Observed Adverse Effects Level). It is below the SOAEL that the requirement*

*the view that 42dB(A) LAeq, 1h (free field) should be regarded as the LOAEL in this*

- 2.17. The analysis then goes on in that decision to set out a lower level than 42dB for the LOAEL of 39dBA. That was after considering the particular characteristics of the noise in that case and, in addition, the World Health Organisation (WHO) Night-time Noise Guidance.
- 2.18. The fracking decision also set out some helpful guidance that the *“minimum adverse impacts”* level can be equated with the LOAEL. This is set out in paragraph 12.244 which provides that, *“PPGM in respect of night-time noise requires compliance with noise limits set to ‘reduce to a minimum any adverse impacts...’ . This poses the question as to what might amount to a minimum adverse impact in this case. I agree with LCC (Lancashire County Council) that it seems logical to equate the minimum*
- 2.19. This is again a passage that was endorsed in the Decision letter.
- 2.20. **What guidance is available on what would constitute an “unreasonable burden” as applied to the provision of noise mitigation?** –although the costs of barriers have been provided by WBM in their response dated 23 May 2017, no other financial information relating to the project has been provided. In the Lancashire Fracking case costs were provided for a barrier that would reduce the number of residents that would experience noise levels of 40dB from 3 to 0 and above 35dB from 22 to 6. Although the costs of the barrier, £1.46 million, was provided the Inspector did not regard this as disproportionate, and the Inspector did not think the costs were very meaningful in the absence of the overall scheme construction, operational costs and
- 2.21. Although the WBM response of 23 May 2017 contains estimated costs of barriers, no overall scheme value is given to set that against and it is therefore not possible to give

any consideration to whether or not those costs would be unreasonable. There is also little or no consideration of the effectiveness of other potential mitigation options, such as the provision of a short fence to shield noise from waiting engines, or limiting/prohibiting the early morning arrivals of trains and what that would do to the length of construction time. Counsel has therefore concluded that it would be surprising if the evidence submitted so far would be sufficient to suggest getting to the

### **3. ASSESSMENT OF NOISE CHAPTER (APPENDIX A OF ES)**

3.1. The ES revised by WBM and dated 4 June 2018 is examined in some detail below.

3.2. **1 Introduction** – no comments.

3.3. **2 Relevant Policy and Guidance Documents** – this section copies current planning guidance and the current planning conditions relating to noise. Section 2.5 considers the issue of train noise and I am not convinced that guidance for the control of noise from a high speed train line which is part of a major national infrastructure project is relevant to this application. Although the noise may be from trains, it is likely to be of a significantly different character and the Barrington application is not one of national significance. However, this may be a moot point in terms of limits and is clearly a point

3.4. **3 Existing Planning Permission and Noise Limits** – the existing planning conditions are described and proposals made for limits to apply to the various activities and receptors associated with the current proposal.

3.5. Although the limit relating to daytime train movements on the branch line (62dB  $L_{Aeq,1hr}$ ) is quoted as representing the Lowest Observable Adverse Effect Level (LOAEL) it should be noted that when this level was set in the original planning consent it was

acknowledged that noise from trains would be very significant at existing residential

properties and the limit was in excess of both the World Health Organisation noise limits and the limits in MPS2 (the minerals guidance in force at that time). The limit therefore does not represent LOAEL, it is at the very least the Significant Observable Adverse Effect Level (SOAEL). I would also point out that in the original application for this site I was very concerned that predicted railway noise levels at existing houses would exceed SSdB LAeq,1h and this exceedance was not in my view acceptable. The decision to allow the 62dB level was against my advice and was made on the basis that any consent granted for the operation would be limited to S

- 3.6. WBM have indicated that a limit for train movements at the permitted residential

development will be SSdB LAeq,1hr and that train movements through Barrington will be assessed by considering the suggested hourly limit of SS dB LAeq,1h and also the HS2

- 3.7. Much of section 3.3 is given over to discussion of why the original noise limit for

Foxton Sidings was incapable of being met; I do not intend to consider this in detail other than to point out that the limit was based on WBMs own response to the Regulation 19 request and that it was not anticipated that this would require some form of extended consideration and interpretation of train noise variation not

- 3.8. Again, this is something of a moot point, it is my view that the advice given by counsel Richard Ground should be taken; the sidings are part of the quarry operation and as the guidance has changed since the original consent was granted the PPGM limits therefore apply and this limit coincides with that suggested by WBM, 42dB LAeq,1h. However, I am concerned that achieving this limit relies upon the locomotive being stabled at particular positions and the engine being switched off until 07:00. This requires the cooperation of third party organisations and individuals (drivers) and I am

indicates that train operators are often reluctant to switch off engines for relatively

short durations. The issue of mitigation at Foxton Sidings is considered in detail later in

- 3.9. **4 Site Description** - This section describes the site and the proposal. The previous consent was for an infilling of the quarry over a 5 year period, this proposal is to infill
- 3.10. The proposed hours of operation are identical to those in the previous consent.
- 3.11. The applicants are seeking to vary the current permission in respect of the number of trains using the branch line, increasing this to a maximum of 4 loaded and 4 empty trains per day but maintaining an average of 3 loaded and 3 empty trains per working day over a calendar month.
- 3.12. No trains will enter Foxton Siding prior to 05:30 and the applicants are currently proposing that no trains will enter the sidings until a noise mitigation scheme is submitted and approved.
- 3.13. **5 Baseline** – baselines are considered for both the permitted new housing and existing dwellings. Measurements have been made by WBM in respect of the permitted housing development and the results of these used to propose site noise limits.
- 3.14. **5.1 Permitted Housing** - In respect of the daytime noise affecting the permitted new housing the proposal is to regard 45 dB  $L_{Aeq,1h}$ , which is considered to be the representative daytime background noise level +10dB, as the Lowest Adverse Effect Level (LOAEL) and 55 dB  $L_{Aeq,1h}$  as the Significant Observed Adverse Effect Level (SOAEL). The suggested limits for evening and night time quarry noise are both 42dB  $L_{Aeq,1h}$ .

- 3.15. The proposal to use background +10dB as LOAEL and 55dB LAeq,1h as SOAEL for daytime noise are considered reasonable, as is the proposal to use background +10dB as the evening limit.
- 3.16. **5.2 Existing Housing** - The proposed evening noise limits for existing dwellings are  
  
where the proposal is to increase the evening noise limit from LAeq,1h to 44dB 42dB
- 3.17. **5.3 Foxton Sidings** – Measurements of background and ambient noise have been made near to College Farm, which is representative of properties in the vicinity of Foxton Sidings. Background noise levels have been reviewed for the period from around 5.30am to 7am. The baseline background noise levels during this period ranged  
  
median value is 40 LA90,15min and the modal value is 39 LA90,15min. The baseline ambient noise levels in this period range from 40 dB to 58 dB LAeq,5min. The logarithmic average of the samples is 52 dB LAeq,5min.
- 3.18. **5.4 Train Noise** - Train noise is also considered and results of measurements given.  
  
These indicate that current noise levels from 2 trains per hour could be between 56 and 62 dB LAeq,1h, at 14m and 10m distance respectively. It should be noted that where brake squeal has occurred during measurements, noise levels may be up to 67dB
- 3.19. **6 Impact Assessment** – This section gives details of the type of activity taking place on the site and the methods of calculating the noise impact of these activities. I have checked the detail of the example calculation given and am broadly satisfied with the methodology and input data.
- 3.20. Paragraph 5.3 contains a table of calculated noise levels affecting existing housing and in general these are within the limits given in the current consent. However, the levels

predicted for Wilsmere Down Farm are significantly higher than the current consent

limits, but it should be noted that the exceedance only occurs when site activity

- 3.21. Noise levels will exceed 44dB  $L_{Aeq,1h}$  (i.e. more than 10dB above the quoted background noise level) at Wilsmere Down Farm when infill activity is taking place relatively close to the dwelling, but Cemex advise that the overall duration of activity daytime SOAEL of 55  $L_{Aeq,1h}$ , and will only occur when activity is carried on in relatively small area, the impact is not significant.
- 3.22. The issue of mitigation for Wilsmere Down Farm is considered in more detail later in this report.
- 3.23. **6.4 On-Site Activities Affecting Permitted Housing** - Noise impacts have been calculated for the permitted new housing and without mitigation night time and evening noise levels will exceed the proposed noise limits at all assessed
- 3.24. In their 2014 report on noise likely to affect the residential development Jacobs derived the following noise limits from their measured background noise levels and these were used in the outline application Environmental Statement to assess the residential development.

Table 8.24: Background levels and limits for restoration operations

Period	Limit	Average Background level measured in September 2014	Limit adopted for this assessment
Early Morning (0600 - 0700)	42 dB $L_{Aeq,1hour}$ (condition 51)	-	42 dB $L_{Aeq,1hour}$
Daytime (0700 - 1900)	Either 10 dB above the background noise levels specified in the periodic noise monitoring scheme or 55 dB $L_{Aeq,1h}$ free field whichever is the lower (condition 52)	32 dB $L_{Aeq}$	42 dB $L_{Aeq,1hour}$
Evening (1900 - 2200)	10 dB above the background noise levels specified in the periodic noise monitoring scheme (condition 53)	29 dB $L_{Aeq}$	39 dB $L_{Aeq,1hour}$

- 3.25. It should be noted that the outline application did not consider any levels in excess of those given above in their assessment of noise impact and the ES noise chapter contains the following statement regarding Significance Criteria;

*Planning conditions 51, 52, and 53 set out noise limits to be achieved during the restoration activities, and these are consistent with the limits for minerals working set out in the Technical Guidance to the NPPF. These limits have been adopted as thresholds of significance for the purpose of this assessment. If noise levels at proposed properties exceed these levels, then a significant effect has been deemed to occur.*

- 3.26. The later measurements carried out by WBM indicate that the representative background noise levels are higher than those used by Jacobs and the proposal is to use a limit of 45dB  $L_{Aeq,1hr}$  for daytime noise, and the suggested limits for evening and
- 3.27. In the report to the South Cambridgeshire planning committee the comments of the Environmental Health Officer are reported as follows;

*The restoration activities associated with the quarry (county planning reference*

*against noise if the two were to co-exist. Recommend refusal unless a Grampian style condition or 5106 is imposed preventing the commencement of any residential development until the county minerals permission for restoration activities have been completed in full or additional noise mitigation measures to address activities is agreed. These measures would indicate siting of earth bunds/acoustic fences, operational noise management plan, reduction in hours when restoration permitted and dust mitigation and management strategy.*

- 3.28. The planning officer's assessment of that was;

*The Council's environmental health officer advises that without mitigation the restoration activities associated with the quarry would result in an unacceptable impact on the living conditions of future residents. The quarry is within the control of the applicants and subject to mitigation measures such as installing earth bunds, acoustic fences, controlling hours of restoration no harm arises through noise*

- 3.29. In respect of mitigation for train unloading and infilling activities the Jacobs report

*If the residential development is to be occupied during restoration activities, Cemex*

*would implement a programme of noise mitigation aimed at reducing noise levels associated with rail unloading and earth moving operations such that the limits specified in conditions 51, 52, and 53 attached to permission 5/1080/10/CM are met at*

*This programme of mitigation would be submitted to accompany the information submitted to discharge condition 49 attached to permission 5/1080/10/CM, when the detailed design information relating to the rail/road transfer facility is determined.*

*With a suitably designed programme of mitigation in place, it is considered that the planning limits specified in conditions 51, 52, and 53 attached to permission*

- 3.30. Condition 17 decision notice for the residential development states;

*No development shall commence until a detailed noise insulation scheme or noise mitigation strategy to address noise associated with Barrington Quarry Minerals Permission 5/01080/10/CW has been submitted to and approved in writing by the Local Planning Authority. The development shall be constructed in accordance with the approved details*

- 3.31. It should also be noted that in respect of daytime noise Minerals Permission

*Noise levels at the boundary of any residential property attributable to quarry infill operations shall not exceed either 10 dB above the background noise levels specified in the periodic noise monitoring scheme or 55 dB LAeq,1h free field **whichever is the lower** between 0700 and 1900 hours. Levels may be measured directly or derived from a combination of measurements and calculation using propagation corrections. All measurements shall be carried out in accordance with the*

- 3.32. The condition therefore appears to be based on the premise that there was no reason why the LOAEL in respect of quarry infill operations, background plus 10dB, could not be met at all residential properties.

- 3.33. Clearly the South Cambridgeshire District Council will in due course determine a reserved matters application for the residential development, but it is unclear what effect the application considered in this report (S/0204/16/CW) will have in this

basis of one set of noise limits being met, but the current application to extend the

period for restoration and increase the amount of material to be placed in the quarry void over a larger area considers the noise impact on the permitted residential

- 3.34. There is an overlap of responsibility in respect of noise from infill activities affecting

the permitted housing, the County Planning Authority having responsibility for determining the current application for infill activities and potentially imposing conditions to control noise, whilst the South Cambridgeshire District Council has the responsibility for determining any reserved matters application for

- 3.35. As a reserved matters application has not yet been submitted it is not possible to give any firm indication of the noise levels that are likely to be acceptable to SCDC. It should be borne in mind that even if the levels proposed by WBM are accepted as being satisfactory by the minerals planning authority there is no guarantee that the same

- 3.36. **6.5 Train Noise on Branch Line** - Train noise levels at Barrington are currently generally within the limits given in Condition 25 of the permission for the existing site but changes are proposed to the operation of the trains and the effects of these changes are considered. Measurements of train noise at Barrington undertaken by WBM indicate that this limit is currently being achieved for 1 train event per hour, provided brake squeal does not occur.

- 3.37. Due to the nature of the railway line it is not possible to operate more than 2 trains in any one hour and allowing for a maximum of 2 train events per hour, the noise limit of 62 dB LAeq,1h at 10m from the head of the nearest rail would still be achieved. Allowing 4 trains per day would still result in a maximum of 2 trains in any one hour, therefore this change would not result in a breach of the current noise limits. Based upon monitoring results this conclusion is correct.

- 3.38. The current permission allows for a maximum of 3 loaded trains and 3 empty trains in any one day on the branch line between 7am and 8pm. This is an upper limit per day.
- 3.39. CEMEX are seeking permission to increase this to up to 4 loaded trains and 4 empty trains on the branch line between 7am and 8am, but with an overall limit of 3 loaded trains and 3 empty trains per day as a calendar monthly average.
- 3.40. Operating 4 loaded trains and 4 empty trains on the track would not give rise to any breach of the current noise limits, based on monitoring results, but the overall noise emission level over the period from 07:00 to 20:00 would increase by approximately 1dB. Such an increase in noise level would normally be regarded as insignificant.
- 3.41. If this change is permitted it is essential that the averaging period is carefully defined as the use of a calendar monthly average is open to interpretation. I would prefer the averaging to be made over the **working days** contained in any calendar month to avoid any ambiguity.
- 3.42. It must be recognised that although consent was granted for the operation of the railway line in conjunction with the original quarry infilling scheme, it was acknowledged at that time that the noise from the trains passing through Barrington would represent a significant adverse noise impact, as assessed against the guidance in force at that time, Minerals Planning Statement 2 (MPS2). It should be noted that the daytime and night time noise limits in the PPGM and MPS2 are effectively identical. The only difference between the two guidance documents in this respect
- 3.43. Counsel has indicated that as the only use of the Foxton Sidings, and by inference the railway line, is for the restoration of the quarry they are thus absolutely part of the operations of the restoration. This means that the guidance given in the PPGM will apply to the railway line and Foxton Sidings.

- 3.44. Given that the predicted daytime noise from the operation of the railway line exceeds the PPGM upper limit of  $L_{Aeq,1h}$  at existing houses immediately adjacent to railway line the conclusion must be that the noise associated with the operation of the Foxton to Barrington railway is likely to have a significant adverse impact on a number of residential premises. This conclusion was reached in respect of the original infilling application and remains the same for the current application. However, the current application, if approved, would allow the significant adverse impact to continue over a very much longer period, potentially 15 years. However, the options for mitigation are very limited and it is clear that there are other planning considerations to be taken into
- 3.45. Without mitigation the noise impact of train noise on the permitted dwellings may exceed the PPGM upper limit of  $SSdB L_{Aeq,1h}$  at some new dwellings, but WBM consider
- 3.46. **6.5 Train Noise at Foxton Exchange Sidings** – The train noise limits proposed by WBM in respect of the Foxton Sidings area are  $L_{Aeq,1hr}$  prior to 07:00 with no train 42dB  $L_{Aeq,1hr}$  during daytime. These would apply at the facade of any dwelling in respect of night time noise and at the boundary of any residential property during daytime. These noise limits accord
- 3.47. The calculations carried out by WBM indicate that without mitigation the limits may be exceeded under some circumstances, dependent upon the type of train and duration of idling when stationary.
- 3.48. **7 Proposed Mitigation Measures** – This section considers potential mitigation measures to reduce the noise impact of the proposed development. In considering mitigation it is essential that the aims of the National Planning Policy

*Planning policies and decisions should aim to:*

- *avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established (subject to the provisions of the Environmental Protection Act 1990 and other relevant law); and*
- *identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*

3.49. The Planning Practice Guidance Minerals expands upon this concept as follows;

*Mineral planning authorities should aim to establish a noise limit, through a planning condition, at the noise-sensitive property that does not exceed the background noise level (LA90,1h) by more than 10dB(A) during normal working hours (0700-1900). Where it will be difficult not to exceed the background level by more than 10dB(A) without imposing unreasonable burdens on the mineral operator, the limit set should be as near that level as practicable. In any event, the total noise from the operations*

*For operations during the evening (1900-2200) the noise limits should not exceed the background noise level (LA90,1h) by more than 10dB(A) and should not exceed 55dB(A) LAeq, 1h (free field ). For any operations during the period 22.00 – 07.00 noise limits should be set to reduce to a minimum any adverse impacts, without imposing unreasonable burdens on the mineral operator. In any event the noise limit should not*

- 3.50. One of the critical issues in considering noise limits is whether or not mitigation is required and if it is, whether requiring such mitigation would be an unreasonable burden on the mineral operator. Minerals Planning Authorities are required to take a view on whether or not to impose the requirement for mitigation but can only do so if they are provided with sufficient information on which to
- 3.51. WBM have provided costings for the provision of barriers in respect of both Barrington and Foxton Sidings but without information from Cemex regarding the overall scheme construction, operational costs and budget it is difficult to place these into context. Although there are obvious commercial sensitivities in this respect, this clearly makes it difficult for the local planning authority to make an informed judgement on this
- 3.52. **7.1 On site Activity Affecting Existing Dwellings** - In this instance it is clear that noise levels at Wilsmere Down Farm will exceed the LOAEL of 10dB above background for at least some portion of the life of the development and under those circumstances mitigation must be considered in order reduce the adverse impact.
- 3.53. WBM have calculated that the noise from infilling operations would exceed the noise limits when working occurs within approximately 85m of the working edge and this time taken to complete the works within this distance would be approximately 27 working days. However, the noise levels would still be below 55dB  $L_{Aeq,1hr}$ , which is the
- 3.54. The provision of a 2m bund along the boundary would reduce the exceedance to 1dB, which is regarded as a minor issue, but obviously the construction of the bund would generate relatively high noise levels for a significant period. Temporary works such as bund construction are subject to a higher PPGM noise limit of  $L_{Aeq,1hr}$  and this higher noise impact must be offset against the extent of mitigation provided by the

- 3.55. WBM have proposed a schedule of operational controls that would avoid adverse noise impacts during the more sensitive evening and night time periods. On balance I am of the view that given the relatively short duration of the potential daytime noise limit exceedance, the construction of the bund may cause more disturbance than
- 3.56. **7.2 On site Activity Affecting Permitted Dwellings** – the proposed mitigation, comprising barriers and operational controls, is described in detail in the ES chapter. However, the mitigation has been assessed against the limit levels proposed by WBM, which differ from the limits used in the outline consent assessment. At present the views of the SCDC planning authority regarding these proposed limits are not
- 3.57. The mitigation options discussed comprise limitations on the setback distances for working at specified times and the provision of earth bunds at the infill edge. WBM have calculated that by using the proposed mitigation there should be no adverse impacts during the evening or night time. There will be some adverse impact during Phase 3 operations close to the infill boundary at one location, but this is not predicted to exceed the PPGM upper noise limit of 55dB LAeq,1hr and physical
- 3.58. Overall, the mitigation proposed by WBM in respect of the permitted dwellings appears to be satisfactory.
- 3.59. **7.3 Train Noise on Branch Line** - No physical mitigation is proposed in respect of train noise affecting existing dwellings in Barrington, however this issue was considered in respect of Barrington when the original infill application was determined, and the following is an extract from the committee report submitted at that time;

*Consideration has been given to the desirability of erecting noise barriers between the single track railway and the adjacent housing. To be effective such barriers would have*

*to be located on both sides of the track and be approximately 5 metres in height. The erection of the barriers would have a severe impact on the outlook from adjacent housing and could result in shading of gardens. On balance, it is considered that any beneficial impacts on amenity from reduction to noise is not outweighed by the significant visual impact of such structures especially given the occasional nature of the train movements recommended. Clearly it would not be feasible to erect any noise*

- 3.60. These concerns are likely to be relevant to the current application, and WBM have considered the effect of a 2m high barrier. Such a barrier would be ineffective against noise from the locomotive due to the noise source height but would provide
- 3.61. Costings have been provided for a 2m barrier but these need to be put into the context of the overall scheme construction, operational costs and budget, which have not been provided. WBM have indicated that they consider the noise from train passbys in Barrington as not constituting a significant adverse noise impact. However, as indicated in paragraphs 3.42 to 3.44 of this report, the noise levels from train movements exceeds the SSdB  $L_{Aeq,1hr}$  overall limit specified in PPGM and in this context does constitute a significant adverse noise impact.
- 3.62. **7.4 Train Noise at Foxton Exchange Sidings** – Mitigation is discussed comprising a mix of operational controls and barriers but WBM are suggesting that this may be approved following the grant of any consent for the project, and the mitigation is presented in the form of examples of what may be employed.
- 3.63. Night time controls that have been suggested include a time restriction with no trains entering the sidings prior to 05:30, specific operational requirements for any train arriving between 05:30 and 07:00, and physical mitigation in the form of a barrier. The result of these controls would allow trains arriving prior to 07:00 to meet

limit of 42dB  $L_{Aeq,1hr}$ . The provision of the barrier means that there is significantly less reliance on third party operatives turning off the locomotive after arrival.

- 3.64. During daytime if a Class 66 locomotive is allowed to idle within the sidings the noise levels is predicted to be below the noise limit of 55dB  $L_{Aeq,1hr}$  but older locomotives (to be phased out within 12 months) will exceed the limit if allowed to idle for more than 30 minutes.
- 3.65. The proposal to erect a barrier to mitigate noise prior to 07:00 is welcome but I am concerned that this presented as an example of mitigation and not a firm commitment. This aspect requires clarification and confirmation that it will be included in the mitigation package.
- 3.66. **8 Residual/Secondary Impacts** – this section begins by stating that there are no impacts at or above SOAEL, which I do not agree with as the noise impact of train movements within Barrington is above the 55dB  $L_{Aeq,1hr}$  limit given on PPGM. However, it is for the planning authority to determine if this exceedance is allowable in the circumstances taking into account the need to achieve other planning
- 3.67. There will be further residual impacts at Wilsmere Down Farm and the permitted housing development, the extent of the latter depending upon the final site layout and
- 3.68. **9 Summary and Conclusions** – this sections summarises the ES Chapter and I have no comments to make in respect of it as all points have been covered elsewhere in this report. However, I remain concerned that the issue of physical mitigation at Foxton Sidings is merely suggested as a possibility and not a commitment.

#### **4. ASSESSMENT OF VIBRATION CHAPTER (APPENDIX B OF ES)**

- 4.1. The submission in respect of Vibration is technically complex, extremely comprehensive, and is considered to be satisfactory in its entirety.
- 4.2. In respect of existing residential receptors in Barrington the only change that would be brought about by the application proposal in comparison to the current railway operation is that the maximum number of trains permitted in a day would be increased from 3 each way to 4 each way, with a limitation that the average number of trains in any calendar month would not exceed 3 each way. Even with the increase in the number of train movements on a single day from 6 to 8 the current daily VDV (16-hour) limit would be met.
- 4.3. The chapter considers the potential effects of groundborne vibration on buildings and on occupiers, and from groundborne noise on occupiers. The conclusions are that the level of vibration would be below recommended limit levels in respect of even minor damage to buildings and that there would be no significant effects on occupiers from either groundborne vibration or groundborne noise.
- 4.4. The combined effects of internal airborne noise with groundborne noise and with groundborne vibration have also been examined and the conclusion is that the internal airborne noise levels would not be significantly increased by the predicted groundborne noise levels. It was also concluded that the noise level equivalent to the vibration level in terms of annoyance did not result in any significant increase in the
- 4.5. With regard to the permitted residential development the Chapter contains a brief consideration of the potential for vibration to have an adverse effect on buildings and future occupiers. The original 2010 ES included a Chapter on Vibration and this indicated the relevant vibration limit values could be achieved at the property with the

the permitted housing development states that the nearest housing would be

approximately 20m from the railway, and it is reasonable to assume that groundborne vibration level would be lower at the increased distance. The operating manual for the Barrington Light Railway, submitted with the application, imposes a speed restriction for trains within the works sidings of 5mph, whereas where trains pass the existing housing on the branch line speeds of up to 15mph are permitted. It should be noted that Mr Taylor quotes speed limits of 8 km/h and 15 km/h in his report, the first value is a direct conversion of 5mph to km/h, but the second figure is incorrect and

- 4.6. The conclusion that may be drawn from consideration of these factors is that the

vibration limits in force for the current infilling operation are likely to be met in respect of the permitted housing development. However, the scope of the existing vibration monitoring scheme should be extended to include the permitted housing development

## **S. CONCLUSIONS**

- 5.1. Following the advice of Counsel it is clear that the noise impact of the quarry site should be judged against the standards in PPGM, as the guidance used in assessing the
- 5.2. Comparing the predicted noise levels with the limits contain in the PPGM it is concluded that the noise impact of activities within the quarry is not likely to result in significant adverse impacts to the majority of existing dwellings. One property, Wilsmere Down Farm, is likely to experience adverse noise impacts from infilling activity for at least part of the restoration scheme, but this will be for a limited duration and it is likely that the construction of a mitigation bund would cause a
- 5.3. The issue of noise affecting the permitted residential development requires consideration by the SCDC planning authority as they will determine the reserved matters application.
- 5.4. Judged against the limits given in PPGM, noise from train movements on the branch line is likely to cause a significant adverse noise impact for those dwellings that are adjacent to the line for the duration of the infilling operation, and there will be adverse impacts at other properties.
- 5.5. Activities at Foxton Sidings during the night have the potential to cause adverse impacts and require control.
- 5.6. Groundborne vibration levels will increase to a marginal extent if the maximum number of trains using the railway line is increased from 6 to 8, but the limits imposed in the original infilling consent will be met. As these limits are based on a current British Standard they are considered to be the correct limits for this