

## 12.0 CHAPTER 12 NOISE

Supporting Information S8 presents an update on the integrated waste management facility's (IWMF's) noise assessment that assesses the proposed noise impacts associated with the proposed waste recovery, recycling and treatment operations within the IWMF, prepared by Acoustical Control Consultants (Belair Research Limited).

The assessment affirms that the IWMF will meet the requirements of Conditions 38, 39, 40 and 42, and that noise monitoring will be carried out on a quarterly basis (every three months) following the commencement of IWMF operations in accordance with Condition 41.

### 12.1 Updated Noise Baseline 2015

Baseline surveys were originally undertaken in October 2005 and are routinely reviewed for the adjacent quarrying operations; with the most recent targeted baseline monitoring being completed in August and October 2015; this has confirmed that the acoustic environment has remained consistent.

### 12.2 Updated Noise Assessment 2015

The original Noise Assessment noted that BS4142:1997 may not be the most appropriate assessment methodology and that other guidance for example from the World Health Organisation (WHO) and BS8233:1999 Sound Insulation and Noise Reduction for Buildings offered more appropriate means of assessing internal sound levels as a result of external sound at night. The majority of the updates are associated with noise incidence during the night.

Both BS4142:1997 and BS8233:1999 were revised in 2014. One of the significant differences between BS4142:2014 and previous editions of the Standard is the explicit requirement to consider context as part of the assessment. It is no longer adequate to simply compare the Rating Level and the Background Sound Level without due regard to the context of the acoustic environment and the sound source. This is consistent with the original assessment's approach to also consider other more appropriate guidance. BS8233:2014 offers updated guidance on suitable indoor sound levels as a result of external noise. For dwellings the main considerations are to protect sleep in bedrooms and to protect resting, listening and communicating in other rooms. For noise without a specific character it is desirable that the overall average levels during the 8 hour night or 16 hour day time periods do not exceed 30 dBA or 35 dBA respectively.

For amenity space, such as gardens and patios, it is desirable that the average level does not exceed 50 dBA, with an upper guideline value of 55dBA which would be acceptable in noisier environments. For dwellings with conventional windows, an internal target of 35 dBA during the day equates to around 50dBA (possibly slightly lower) outside noise sensitive rooms with openable windows.

The National Planning Policy Framework (NPPF), Noise Policy Statement for England (NPSE) and National Planning Practice Guidance (NPPG) were issued in 2012, 2010 and 2012 respectively.

These documents note that there is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking. Assessments should be proportionate to the proposed development. Local

planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations.

Below the No Observed Effect Level (NOEL) sound is unnoticeable and of no significance. Below the Lowest Observed Adverse Effect Level (LOAEL) sound can be heard but does not cause any changes in behaviour or attitude, although the acoustic character of the area may be slightly changed. Below the Significant Observed Adverse Effect Level (SOAEL) sound may cause slight changes in behaviour or attitude e.g. turning up volume of a television or closing windows. There is potential for some sleep disturbance and a perceived change in the acoustic character of the area and quality of life.

Areas of Tranquillity should be protected, but in general cases it may be inappropriate to achieve a level below the LOAEL as this provides no benefit but may require additional resources such as energy, materials, space, time and money, adversely affecting the sustainability of doing so. Noise above the LOAEL should be mitigated and reduced to a minimum, although it may be appropriate to exceed the LOAEL and create an adverse acoustic impact, if this provides other sustainability benefits that are of greater significance. Noise above the SOAEL should be avoided.

The World Health Organisation: Night Noise Guidelines for Europe provides an update to the WHO - Guidelines for Community Noise document. These documents note that a steady level of 30 dBA within bedrooms is suitable to protect vulnerable people from sleep disturbance and that occasional maximum levels of up to around 42 dBA to 45 dBA are also consistent with this. The difference between a sound level outdoors and the resultant level indoors with open windows varies through Europe due to differing building characteristics and particularly window type. An average difference of around 15 dBA is often used, although this is also dependent upon other factors such as the frequency spectrum of the incident sound.

Based on the above, it is clear that the 2008 approach to the noise assessment for the IWMF was wholly consistent with the revised/ updated informative guidance.

Planning conditions were set based on the report recommendations for operations being undertaken during the night. During the day the existing Bradwell Quarry noise conditions were adopted for the IWMF and an intermediate limit was applied during the evening.

Noise conditions have been set around the site to control the noise levels from site operations at the most sensitive residential properties. These conditions limit noise levels resulting from all operations associated with the site, i.e. coincidental IWMF and quarrying operations. The noise levels that are conditioned under the existing IWMF planning permission are consistent with those that apply to the adjacent quarrying operations.

### **12.3 Noise Modelling - Environmental Permit EPR/KP3035RY/A001 'Duly Made'**

On 24 September 2015 an Environmental Permit application was submitted to the Environment Agency on Gent Fairhead & Co Limited's behalf by Fichtner Consulting Engineers Limited. The application is consistent with the IWMF's proposed integrated waste recovery, recycling and treatment operations.

The Environment Agency confirmed the Environmental Permit (Application Reference EPR/KP3035RY/A001) had been 'duly made' on 17 November 2015.

Noise modelling was completed to support the Environmental Permit Application which confirms that the IWMF will meet the requirements of Conditions 38, 39, 40 and 42. [Refer to Appendix 3A]

The baseline environment used within the model accounts for the existing quarrying operations within other areas of Bradwell Quarry [namely, the ongoing quarrying operations], as such the model confirms the cumulative impact of parallel daytime operations in and around the site.

## 12.4 Cumulative Noise Assessment

There will be no overall change in the noise impacts arising from the development of the IWMF site. Cumulative impacts associated with the development of the IWMF alongside the former Site A2 and existing Site A3 and A4 quarrying operations were considered by the 'Site Specific Issues to be Addressed' set out within Essex County Council's emerging Replacement Minerals Local Plan and adopted 2014 Minerals Local Plan, namely:

*'Careful consideration must be given to the final low-level restoration contours to ensure the final landform blends with the surrounding topography and could blend with the levels and planting of the strategic waste management development (Ref ESS/37/08/BTE) if implemented.'*

Similarly the future extension of quarrying operations across Bradwell Quarry into Site A5 (as a 'preferred' site) and Site's A6 and A7 (as 'reserve' sites) will be designed to limit impacts associated with their development on the local noise climate.

The potential stockpiling of overburden materials from within the footprint of the IWMF across New Field has been assessed and demonstrates that the operations will comply with the existing site noise limits.

In considering the potential Noise Impacts associated with the installation of the proposed electricity cable and water abstraction and discharge pipelines (Presented as Appendix 12A "Acoustic Assessment (Addendum)" to the Addendum ES), standard methods of working will be applied to the works to manage, control to mitigate noise impacts to residential properties or members of the public, i.e. the use of appropriate plant and equipment, progressing the work in a phased and systematic manner, limiting the times when the works are carried out. Therefore, the noise impact associated with these works will be low, only apply during normal working hours and will be transient and short term in nature.

It is concluded that from a noise assessment perspective the EIA for the IWMF proposal and wider foreseeable developments in and around the site have been considered and assessed.