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For **Grundon Waste Management**
Grange Lane
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Grundon Colthrop Lane, Thatcham
Application for an Environmental Permit
BS 4142 Noise Assessment

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WBM

WBM (the trading name of Walker Beak Mason Limited) is an established independent acoustic consultancy specialising in architectural & building acoustics, environmental noise, planning issues and expert work. WBM is a member of the Association of Noise Consultants and is also a Corporate Member of the Institute of Environmental Management & Assessment. The consultants are members of the Institute of Acoustics.

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1 Introduction

Grundon Waste Management are submitting an application to the Environment Agency (EA) for a permit relating to augmenting and expanding their operations on their site at Colthrop Quarry near Thatcham in Berkshire.

This report sets out the calculated noise levels arising from the operation, for use in a BS 4142:2014+A1:2019 assessment at the nearest dwellings to the site.

The calculated noise levels are compared with representative background sound levels at the nearest dwellings to the site. These have been determined from an attended noise survey undertaken by WBM in June 2025 with measurements at the nearest dwellings when operations on the site were not taking place. Noise measurements of the plant in operation were also undertaken by WBM on a separate day in June 2025.

This comparison of the calculated noise levels arising from the existing and proposed site operations including the augmented recycling operations with the background sound levels established in June 2025 forms the basis for the BS 4142:2014+A1:2019 assessment method for the nearest dwellings to the site.

The latest planning permission for the site including the additional plant items was granted by West Berkshire Council on 04 April 2025 (Application No. 24/02827/MINMAJ).

Condition 4 of that permission contains the following text relating to site noise limits:

"*4. Noise levels*

The continuous noise level LAeq (1 hour) attributable to the operations subject to this permission at the Colthrop cottages, identified on Site Layout Block plan number: 60/P/003E, attached to permission 10/02540/MINMAJ, this permission shall not exceed the background noise level L90 by more than 10dB(A) or an absolute limit of 55dB(A) LAeq (1 hour) freefield measured at 1.2 to 1.5 metres above ground level between the approved hours of operations."

To aid comprehension, a glossary of acoustic terms is presented in Appendix A.

Site plans showing the site layout and the nearest dwellings to the site are presented in Appendix B.

The survey locations used by WBM for the attended sample measurements in June 2025 are shown on a site plan in Appendix C.

The details of the noise surveys conducted by WBM in June 2025 are provided in Appendix D with the full results in Appendix E.

The results of the plant noise survey undertaken by WBM in June 2025 and the information relating to the silt presses to be installed as provided by Grundon Waste Management for use in creation of the SoundPLAN noise model are summarised and presented in Appendix F.

The assumptions included in the creation of the SoundPLAN noise model for the calculations are detailed in Appendix G.

A SoundPLAN noise calculation plot presenting the calculated daytime noise levels from the operations on the site is presented in Appendix H.

The full breakdown of the BS 4142 assessment is included as Appendix I.

2 Environment Agency Permit and Requirements

Grundon Waste Management are submitting an application to the Environment Agency (EA) for a permit to augmented and expanded recycling operations on their site at Colthrop Quarry near Thatcham in Berkshire.

For this application the Environment Agency require a noise impact assessment (NIA) to be conducted in line with the requirements of BS4142: 2014 + A1:2019.

The information that must be submitted to the Environment Agency in a noise impact assessment that uses computer modelling or spreadsheet calculations is provided in GOV.UK Guidance "*Noise impact assessments involving calculations or modelling*" and "*Guidance – Noise and vibration management: environmental permits*".

The Environment Agency generally require the overall site noise and BS 4142:2014+A1:2019 Rating Level to be no more than 5 dB above the representative background sound level, although this is dependent on context. Additional guidance on the use of BS 4142:2014+A1:2019 when applying for a permit is provided in the Environment Agency "*Method implementation document (MID) for BS 4142*" dated 27 March 2023.

The normal wording of Environment Agency permits such as that being applied for includes text requiring that the site does not "*cause pollution*" at the nearest off-site noise sensitive receptors.

To provide some clarification on this requirement, the Environment Agency guidance "*Noise and vibration management: environmental permits*" includes the following text:

"*Unacceptable level of audible or detectable noise*
This level of noise means that significant pollution is being, or is likely to be, caused at a receptor (regardless of whether you are taking appropriate measures).
You must take further action or you may have to reduce or stop operations. The environment agencies will not issue a permit if you are likely to be operating at this level.
The closest corresponding BS 4142 descriptor is 'significant adverse impact' (following consideration of the context)."

Significant pollution can therefore be equated to the BS 4142 descriptor 'significant adverse impact' which is defined in the standard as "*A difference of +10 dB or more… depending on the context*".

The methods outlined in BS 4142:2014+A1:2019 are appropriate for the noise assessment of the proposed operations including HGV movements within the site. The assessment does not cover noise from HGV movements outside the application/site boundary, which is also outside of the scope of BS 4142:2014+A1:2019.

3 British Standard 4142: 2014+A1:2019

British Standard (BS) 4142:2014+A1:2019 "*Methods for rating and assessing industrial and commercial sound*" describes methods for assessing the likely effects of sound of an industrial and/or commercial nature on residential properties. It includes the assessment of sound from industrial and manufacturing processes, M&E plant and equipment, loading and unloading of goods and materials, and mobile plant/vehicles on the site. It can be used to assess sound from proposed, new, modified or additional industrial / commercial sources, at existing or new premises used for residential purposes.

The standard describes methods to measure and determine ambient, background and residual sound levels, and the rating levels of industrial / commercial sound.

BS 4142:2014+A1:2019 is not intended to be used for the derivation or assessment of internal sound levels, or for the assessment of non-industrial / commercial sources such as recreational activities, motorsport, music and entertainment, shooting grounds, construction and demolition, domestic animals, people, and public address systems for speech.

Ambient sound is defined in BS 4142: 2014+A1:2019 as "*totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far*". It comprises the residual sound and the specific sound when present.

Residual sound is defined in BS 4142: 2014+A1:2019 as "*ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound*".

The background sound level is the $L_{A90,\,T}$ of the residual sound level, and is the underlying level of sound. Measurements of background sound level should be undertaken at the assessment location where possible or at a comparable location.

The measurement time interval should be sufficient to obtain a representative value (normally not less than 15 minutes) and the monitoring duration should reflect the range of background sound levels across the assessment period. The background sound level used for the assessment should be representative of the period being assessed.

The specific sound level is the $L_{Aeq,Tr}$ of the sound source being assessed over the reference time interval, T_r. BS 4142:2014+A1:2019 advises that T_r should be 1 hour during the day and 15 minutes at night.

The rating level is the specific sound level plus any adjustment for the characteristics of the sound (tone, impulse, intermittent or other acoustic feature).

The standard describes subjective and objective methods to establish the appropriate adjustment. The adjustments for the different features and assessment methods are summarised in the table below.

Acoustic Feature	Adjustment for Acoustic Feature		
	Subjective Methods	**Objective Methods**	
Tonality	+2 dB if just perceptible +4 dB if clearly perceptible +6 dB if highly perceptible	Third Octave Analysis	Narrow Band Analysis
		+6 dB if tones identified	Sliding scale of 0 to +6 dB depending on audibility of tone
Impulsivity	+3 dB if just perceptible +6 dB if clearly perceptible +9 dB if highly perceptible	Sliding scale of 0 to +9 dB depending on prominence of impulsive sound	
Intermittency	+ 3 dB if intermittency is readily distinctive	n/a	
Other	+ 3 dB if neither tonal nor impulsive, but otherwise readily distinctive	n/a	

Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be taken into account. If one feature is dominant, it might be appropriate to apply a single correction. The rating level is equal to the specific sound level if there are no features present.

The level of impact is assessed by comparing the rating level of the specific sound source with the background sound level. Other factors that may require consideration include the absolute level of sound, the character and level of the residual sound compared to the specific sound, and the sensitivity of the receptor and scope for mitigation.

When the rating level is above the background sound level, a difference of around +5 dB is likely to indicate an adverse impact and a difference of around +10 dB or more is likely to indicate a significant adverse impact, depending on the context.

The lower the rating level with respect to the background sound level, the less likely it is that the specific sound source will have an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

4 Description of Site and Noise Climate

The Colthrop Quarry site is located to the east south-east of Thatcham in Berkshire and is accessed off Colthrop Lane via a bailey bridge over the River Kennet.

The nearest residential properties to the site are No. 11 to 22 Colthrop Cottages which are located adjacent to the access road to the north-west of the site.

To the north of the site and the River Kennet is a predominantly industrial and commercial area and the site is otherwise surrounded by agricultural land or grassland apart from the now worked Kennetholme Quarry area to the east.

As well as the operation on the Grundon Waste Management site, there is also a concrete plant within the more general site to the south of the Grundon operations that is operated by Axtel (the operating hours for this plant are the same as those of the Grundon site). As this plant is not operated by the applicant, it has not been included in the BS4142 assessment, but has been considered in the section relating to cumulative impact.

The site layout showing the operations on site including the location of the silt presses that are yet to be installed is shown on the plan in Appendix B.

The operating hours for the site are as follows (these are not to change):

- Mondays - Fridays 07:00–18:00; and
- Saturdays 07:00 to 13:00.

No operations take place on Sundays or Public/Bank Holidays

For this reason with regard to BS 4142:2014+A1:2019, the assessment period is therefore 1 hour for daytime (07:00 to 23:00 hours) with no requirement for a night-time assessment.

This BS 4142:2014+A1:2019 assessment concentrates on the nearest residential properties to the site described above, but the SoundPLAN noise maps include a visual representation of the calculated site noise levels across a wider area in the vicinity of the site.

The residential locations selected for site noise calculations in the BS 4142:2014+A1:2019 assessment are Colthrop Cottages (OS Grif Reference E: 454007 N: 166322) that are located adjacent to the access road to the wider site.

This location was chosen for the purposes of this assessment as representative of the closest residential properties to the site.

The assessment location listed and the representative noise survey locations used by WBM in June 2025 are shown on the plan in Appendix C.

Based on the noted observations made during the noise surveys, the daytime sound levels in the area are generally influenced by distant (and some local) road traffic and local industrial activity as well as the River Kennet. Other sound sources in the area included occasional aircraft movements, birdsong, and breeze in the foliage.

The concrete plant operated on the wider site by Axtel was just audible during the first (baseline) noise survey, but this was not operating during the second noise survey.

The site was not audible during the first (baseline) noise survey as site operations were not taking place at that time. During the second survey, the site was just audible in the background.

5 Summary of Baseline Sound Level Data

WBM Baseline Survey – June 2025:

In June 2025, manned environmental sound level measurements were taken at:

Location 1: Colthrop Cottages.

The baseline measurements were undertaken during the daytime on Wednesday 25 June 2025 whilst the site operations were not taking place. As the operations on site were not taking place during the baseline noise survey the background sound level ($L_{A90,T}$) can be considered uninfluenced by site noise and suitable for use in the BS4142 assessment.

The noise climate during the baseline survey was primarily affected by distant road traffic noise (as well as HGV movements on the site access road relating to the Axtel concrete plant), birdsong, breeze in the trees with occasional aircraft movements, some power tool use at the dwellings, and industrial activity noted.

The second set of measurements with the plant operating on the site was undertaken on Friday 27 June 2025. As the site was operating normally during this period (and the Axtel concrete plant was not operating), the site noise estimates were made during these measurements. As the processing plant is a relatively constant noise source, it was estimated to be close to the measured background sound level as the plant operations were just audible during all the measurements as a stable broadband noise source. The estimated site noise levels were no more than 45-46 dB(A) and this was used as a check level for the site noise calculations for the plant.

The details of the two noise surveys are presented in Appendix D with the full results in Appendix E.

Plant measurements of the processing plant were also obtained by WBM on the second visit to the site on Friday 27 June 2025. Additional noise data relating to the silt presses to be installed was supplied by Grundon Waste Management and all the information related to these noise sources is summarised and presented in Appendix F.

Representative Ambient / Residual and Background Sound Levels:

The following table presents representative daytime ambient / residual ($L_{Aeq,T}$) and background ($L_{A90,T}$) sound levels at the residential assessment location based on the data obtained by WBM in June 2025. As the operations on the site were not taking place during the first survey, for the purposes of a BS4142 assessment the residual sound level and the ambient sound level measured during the survey are the same.

Daytime (07:00 – 18:00) **Position**	**Ambient / Residual Sound Level dB $L_{Aeq,T}$**	**Background Sound Level dB $L_{A90,T}$**
1. Colthrop Cottages	53	40

Three additional baseline measurements were taken at a location to the north-west of Colthrop Cottages, but the background sound levels at this location were dominated by water noise from the nearby weir. Ddue to the presence of the weir, the average L_{A90} background sound level at this additional location was 48 dB $L_{A90,15min,free\text{-}field}$. For completeness, note that the average ambient level was also 53 dB $L_{Aeq,15min,free\text{-}field}$ at this location.) These measurements were disregarded as that location is exposed to elevated noise levels and is also shielded from the noise from the site due to the residences themselves.

6 Calculation of Site Noise Levels

Noise calculations of the existing and proposed site operations were undertaken using SoundPLAN noise mapping software, utilising the calculation methods in BS ISO 9613-2:2024: "*Acoustics. Attenuation of sound during propagation outdoors - Engineering method for the prediction of sound pressure levels outdoors*."

A digital ground model (DGM) based on topographic data was created for the calculation area.

The following scenario was modelled:

- All existing and proposed daytime operations (07:00 to 18:00 hours).

The operation of the different elements of the processing plant (main screen and sand plant, secondary screen and conveyors) were modelled as taking place for 100% of the assessment period. The vibrating feed hopper was included as being operational 25% of the assessment period and the loading shovel was modelled as being in two locations for a total of 50% of the time with four one-way movements in between.

The calculations were undertaken as a worst case scenario with the operation of the silt presses taking place for 100% of the time with the operation being at the level for the noisier opening cycle for 5 minutes (8.33%) and the quieter filtration cycle for 55 minutes (91.67%).

Although there will be intermittent depositing of material from the silt presses into the bays underneath the silt presses, this will be for a matter of seconds over the course of an hour. As the duration is this activity is very short, and the material is very soft sand/silt known as filter cake, the noise from this activity is likely to be relatively insignificant. The bays will also shield the depositing of this material from the residential receptors at Colthrop Cottages.

For these reasons, the depositing of the material into the bays has not been specifically modelled for this assessment as the overall noise levels from this aspect of the operation would not be considered to be of any significance.

HGV movements have been included as 6 one-way movements into and out of the site per hour with the sound power level used for the movements of HGVs on the access road based on measured levels of HGV movements within a similar site.

The calculations assume that there is on average 90% soft ground across the calculation area.

The 2.5 metre high acoustic fence adjacent to the access road was included in the noise model, but no other additional structures or stockpiles that may provide barrier attenuation between the site operations and the dwellings have been included. The calculated site noise levels presented are therefore likely to an overestimate.

Details of plant noise data supplied by Grundon are presented in Appendix F.

Details of sound power level data and assumptions used for the SoundPLAN noise model are presented in Appendix G.

The SoundPLAN daytime noise contour plot covering the assessment area for all the site operations is presented in Appendix H.

7 Comparison of Calculated Site Noise with Existing Sound Levels

An assessment has been undertaken in accordance with BS 4142:2014+A1:2019 "*Methods for Rating and assessing industrial and commercial sound*" for the nearest dwellings to the operations on the site as described above.

For the BS 4142:2014+A1:2019 assessment, the receiver location representative of the nearest residential properties to the site has been used for site noise calculations.

A plan showing the site layout which includes the nearest residential properties is presented in Appendix B. The residential locations used for the noise surveys are also shown in Appendix C.

A comparison of the noise levels from all the operations on site calculated at the selected residential assessment location closest to the site with the representative daytime background and residual sound levels at that location is as follows.

Receiver Location Daytime (07:00-18:00)	**Calculated Site Noise Level (All Proposed and Existing Operations) dB $L_{Aeq,1h}$**	**Representative Background Sound Level dB $L_{A90,15min}$**	**Representative Residual Sound Level dB $L_{Aeq,15min}$**
1 Colthrop Cottages	46	40	53

As can be seen from the table, the calculated site sound levels from the site operations are 6 dB above the background sound level at the nearest residences to the site (Colthrop Cottages) as was the case during the second survey on Friday 27 June 2025.

Note that the calculated sound level at Colthrop Cottages from the proposed new plant items (silt press and associated infrastructure) is 23 dB $L_{Aeq,1hr,free\text{-}field}$ and therefore the calculated site sound level from the site including the new items is no more than calculated (and observed/estimated during the survey on Friday 27 June 2025) from the processing plant without the new items.

8 BS 4142 Assessment

The information to be reported, as specified in Section 12 of BS 4142:2014+A1:2019, is set out in full in Appendix I (where relevant) and the findings are summarised on the following pages.

For the BS4142 assessment, when the rating level is above the background sound level, a difference of around +5 dB is likely to indicate an adverse impact and a difference of around +10 dB or more is likely to indicate a significant adverse impact, depending on the context.

The lower the rating level with respect to the background sound level, the less likely it is that the specific sound source will have an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

Considering the nature of the operations, particularly in the context of the existing ambient and background sound environment in the area during the daytime and the observations made during the survey on Friday 27 June 2025 at the dwellings, one would not expect any acoustic features of the noise to be readily distinguishable at the dwellings and an acoustic feature correction would not be appropriate.

As such, there is no adjustment necessary in the BS4142 assessment for the character of the noise and the rating level is the same as the specific sound level.

Normal Daytime (07:00-18:00) Operations:

The overall calculated daytime site noise level is above the representative background sound levels by 6 dB(A) at Colthrop Cottages.

The difference between the rating levels and the representative daytime background sound levels presented are just above the level that indicates an adverse impact (depending on context) in BS4142: 2014 + A1: 2019 at the residential location considered.

The overall calculated site noise level is below the representative residual sound levels by 7 dB(A) at Colthrop Cottages.

The baseline residual levels at Colthrop Cottages were between 51 and 56 dB $L_{Aeq,15min}$ in June 2025.

The daytime noise climate at these dwellings will continue to be influenced by distant road traffic (HGV movements to the wider site on the access road), breeze in trees, local activity, faint river noise, and other industrial/commercial noise to the north, with some activity at the Axtel concrete plant and the site just audible in the background.

Uncertainty

The main uncertainty in site noise calculations is whether the actual operation will generate the predicted site noise levels at the nearest dwellings.

To address this uncertainty, the model includes all main operations on site taking place simultaneously with the “on-times” used being 100% of the assessment period for most operations. The loading shovel is included as operating for 50% of each hour at two locations with 4 movements per hour in between. This is likely to be a considerable overestimate of the loading shovel during the course of one hour. The vibrating feed hopper is included as operating for 25% of the time which is likely to also be a considerable overestimate. The HGV movements are based on a high volume of site traffic in a single hour.

Apart from the acoustic fence adjacent to the access road, none of the existing buildings/structures on the site (including stockpiles which were noted during the site visit of being 2 to 4 metres in height depending on location) and in the surrounding area are included in the SoundPLAN noise model. This results in a likely underestimate of the attenuation of site noise between the operating areas and the dwellings.

The consideration of a worst case scenario is used to offset any uncertainty in the calculation methods/model creation.

Context

In context, the operation will be taking place on an existing site in an area that has a significant amount of existing commercial / industrial activity and transportation noise. The noise from the daytime site operations is likely to be just audible in the background and will not be readily distinctive from the existing industrial/commercial noise in the area as noted during the survey conducted on Friday 27 June 2025 as there will be effectively no change to the existing permitted operation of the processing plant (and the overall site sound levels) with the addition of the new plant items.

Considering the context of the industrial area and the fact that the sound levels from the existing permitted processing plant control the calculated site sound levels at Colthrop Cottages indicating that there would be no change in site sound levels at the nearest dwellings, it is considered that the additional plant items and continued operation of the processing plant will not result in adverse impact at Colthrop Cottages.

Understanding the context of the site and locality and the total proposed and existing operations on the Grundon site, the operations do not introduce a new type of noise or novel acoustic character to the area. As such, perception of any audible noise by local residents would not be expected to provoke the same reaction as if this were a new source in an area otherwise devoid of such noise sources and noise characteristics.

For the reasons listed above, with the consideration of context it is expected that sound level at the assessment location due to proposed and existing site operations will not represent an adverse impact.

The daytime soundscape for the nearest dwellings to the site will continue to be affected by distant road traffic (HGV movements to the wider site on the access road), breeze in trees, local activity, faint river noise and other industrial/commercial noise to the north, with some activity at the Axtel concrete plant and the site just audible in the background.

It is expected that the site operations will be just audible in the background at the nearest residential receptor to the site during the daytime, but is unlikely to be readily identifiable/distinguishable most of the time at the nearest dwellings (as is currently the case).

The context has been considered in more detail in Appendix I, Section q.

9 Cumulative Impact of Proposals

The site is located in an area that is predominantly commercial/industrial with Colthrop Cottages being the nearest residential properties to the site. The next nearest residential areas are to the west north-west well beyond other commercial/industrial premises.

The nearest other noise source in the area is the concrete plant operated by Axtel on the south of the wider Colthrop Quarry site to the south of the Grundon operations.

The main other noise generating industrial/commercial premises in the area are those immediately to the north of the site on the industrial estate over the River Kennet.

During the baseline daytime noise survey in June 2025, the activities on the neighbouring sites were audible on a few occasions with the Axtel concrete plant noted as being just audible in the background during the baseline survey on Wednesday 25 June 2025. Based on the estimated and calculated site sound levels, the continuing operations on the site are unlikely to have a noticeable impact on the cumulative noise levels from other existing premises in the area.

The nature and character of the site operations is similar to other existing commercial and industrial premises operating in the area. As such there is unlikely to be any change in the character of the area caused by the proposals and therefore no concern for cumulative noise impact in terms of additional noise character introduced by the site operations.

10 Summary and Conclusions

Grundon Waste Management are submitting an application to the Environment Agency (EA) for a permit relating to augmenting and expanding on their site at Colthrop Quarry near Thatcham in Berkshire.

This report sets out the calculated noise levels arising from the existing and proposed operations on the Grundon site, for use in a BS 4142:2014+A1:2019 assessment at the nearest dwellings to the site.

The calculated noise levels are compared with representative background sound levels at the nearest dwellings to the site. These have been determined from an attended noise survey undertaken by WBM on Wednesday 25 June 2025 when the site operations were not taking place.

Estimated site sound levels were established during a second survey on Friday 27 June 2025 when the processing plant at the site was operating (and the Axtel concrete plant on the wider site was not). Plant measurements were also taken during this survey and this data was used to inform the SoundPLAN noise model.

This comparison of the estimated and calculated noise levels arising from the site with the background sound levels established in June 2025 forms the basis for the BS 4142:2014+A1:2019 assessment method for the nearest dwellings to the site.

The calculations demonstrate a rating level of 46 dB $L_{Ar,Tr}$ at Colthrop Cottages which is 6 dB(A) above the representative background sound level of 40 dB $L_{A90,T}$ in that area. The representative residual sound level at Colthrop Cottages is 53 dB $L_{Aeq,T}$.

The conclusion of the assessment for Colthrop Cottages is that the ongoing and proposed site operations have been demonstrated to be of no adverse impact at that location during the normal daytime operating hours of the site once context is taken into account.

It is expected that the site will be just audible in the background at Colthrop Cottages during the normal daytime operating hours of the site (as is currently the case as the calculated sound levels at the residences from the new elements are over 20 dB(A) below the sound levels from the existing permitted processing plant).

The daytime soundscape for Colthrop Cottages will continue to be affected by distant road traffic noise (HGV movements to the wider site on the access road), birdsong, breeze in trees, faint river noise, local activity, occasional aircraft movements and other industrial/commercial noise to the north with some site noise and operations at the Axtel concrete plant just audible in the background.

The comparison of the calculated noise levels arising from the existing and proposed site operations has been compared to existing background and residual sound levels in the area and it is concluded that there will be no adverse impact arising from the continuing site operations at the nearest residential receptors following consideration of context.

Dr Robert Storey
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Appendix A – Glossary of Acoustic Terms

General Noise and Acoustics

The following section describes some of the parameters that are used to quantify noise.

Decibels dB

Noise levels are measured in decibels. The decibel is the logarithmic ratio of the sound pressure to a reference pressure ($2x10^{-5}$ Pascals). The decibel scale gives a reasonable approximation to the human perception of relative loudness. In terms of human hearing, audible sounds range from the threshold of hearing (0 dB) to the threshold of pain (140 dB).

A-weighted Decibels dB(A)

The 'A'-weighting filter emulates human hearing response for low levels of sound. The filter network is incorporated electronically into sound level meters. Sound pressure levels measured using an 'A'-weighting filter have units of dB(A) which is a single figure value to represent the overall noise level for the entire frequency range.

A change of 3 dB(A) is the smallest change in noise level that is perceptible under normal listening conditions. A change of 10 dB(A) corresponds to a doubling or halving of loudness of the sound. The background noise level in a quiet bedroom may be around 20 –30 dB(A); normal speech conversation around 60 dB(A) at 1 m; noise from a very busy road around 70-80 dB(A) at 10m; the level near a pneumatic drill around 100 dB(A).

Façade Noise Level

Façade noise measurements are those undertaken near to reflective surfaces such as walls, usually at a distance of 1m from the surface. Façade noise levels at 1m from a reflective surface are normally around 3 dB greater than those obtained under freefield conditions.

Freefield Noise Level

Freefield noise measurements are those undertaken away from any reflective surfaces other than the ground.

Frequency Hz

The frequency of a noise is the number of pressure variations per second, and relates to the "pitch" of the sound. Hertz (Hz) is the unit of frequency and is the same as cycles per second. Normal, healthy human hearing can detect sounds from around 20 Hz to 20 kHz.

Octave and Third-Octave Bands

Two frequencies are said to be an octave apart if the frequency of one is twice the frequency of the other. The octave bandwidth increases as the centre frequency increases. Each bandwidth is 70% of the band centre frequency.

Two frequencies are said to be a third-octave apart if the frequency of one is 1.26 times the other. The third octave bandwidth is 23% of the band centre frequency.

There are recognised octave band and third octave band centre frequencies. The octave or third-octave band sound pressure level is determined from the energy of the sound which falls within the boundaries of that particular octave of third octave band.

Appendix A (continued)

Equivalent Continuous Sound Pressure Level $L_{Aeq,T}$

The 'A'-weighted equivalent continuous sound pressure level $L_{Aeq,T}$, is a notional steady level which has the same acoustic energy as the actual fluctuating noise over the same time period T. The $L_{Aeq,T}$ unit is dominated by higher noise levels, for example, the $L_{Aeq,T}$ average of two equal time periods at, for example, 70 dB(A) and 50 dB(A) is not 60 dB(A) but 67 dB(A).

The $L_{Aeq,}$ is the chosen unit of BS 7445-1:2003 "Description and Measurement of Environmental noise".

Maximum Sound Pressure Level L_{Amax}

The L_{Amax} value describes the overall maximum 'A'-weighted sound pressure level over the measurement interval. Maximum levels are measured with either a fast or slow time weighted, denoted as $L_{Amax,f}$ or $L_{Amax,s}$ respectively.

Rating Level (BS 4142) $L_{Ar,T}$

With regard to BS 4142, the rating level is the specific sound plus any adjustment for the characteristics of the sound.

Residual Sound (BS 4142)

With regard to BS 4142, the residual sound is the ambient sound remaining at the assessment location when the specific source is suppressed to such a degree that it does not contribute to the ambient sound.

Specific Sound Level (BS 4142) $L_{Aeq,T}$

With regard to BS 4142,the specific sound level is the sound pressure level (in terms of $L_{Aeq,T}$) produced by the specific sound source at the assessment location.

Statistical Parameters L_N

In order to cover the time variability aspects, noise can be analysed into various statistical parameters, i.e. the sound level which is exceeded for N% of the time. The most commonly used are the $L_{A01,T}$, $L_{A10,T}$ and the $L_{A90,T}$.

$L_{A01,T}$ is the 'A'-weighted level exceeded for 1% of the time interval T and is often used to gives an indication of the upper maximum level of a fluctuating noise signal.

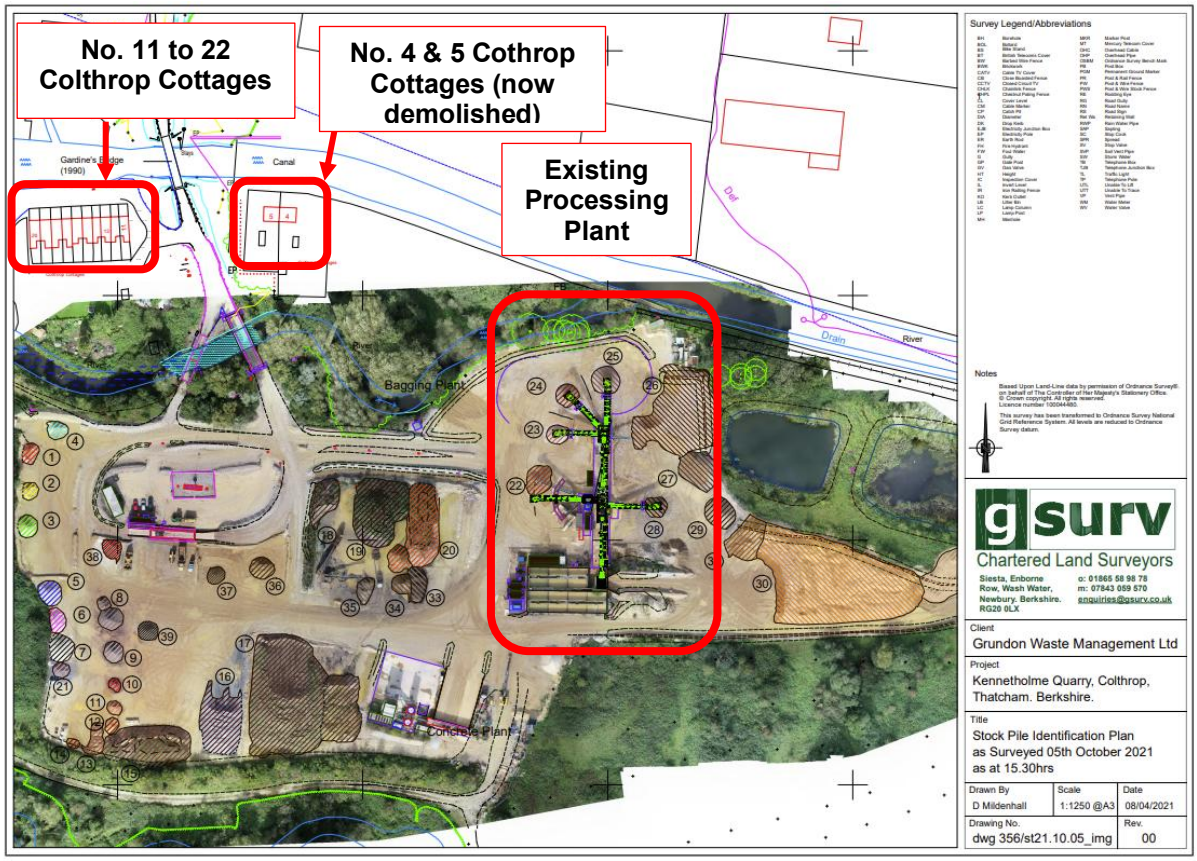
$L_{A10,T}$ is the 'A'-weighted level exceeded for 10% of the time interval T and is often used to describe road traffic noise. It gives an indication of the upper level of a fluctuating noise signal. For high volumes of continuous traffic, the $L_{A10,T}$ unit is typically 2–3 dB(A) above the $L_{Aeq,T}$ value over the same period.

$L_{A90,T}$ is the 'A'-weighted level exceeded for 90% of the time interval T, and is often used to describe the underlying background noise level.

With regard to BS 4142, the $L_{A90,T}$ of the residual sound is used to describe the background sound level.

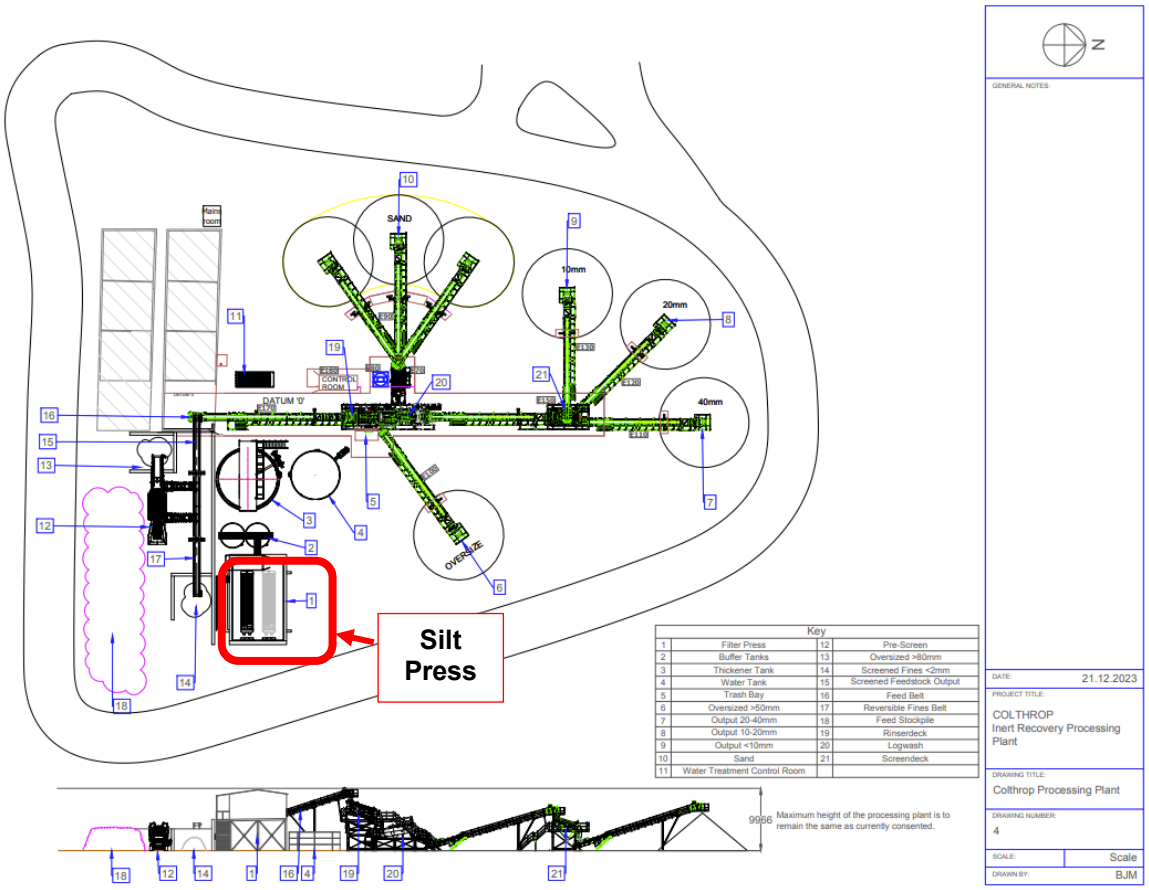
Appendix B – Plans Showing Proposed Site Layout

Site Plan Showing Colthrop Cottages:



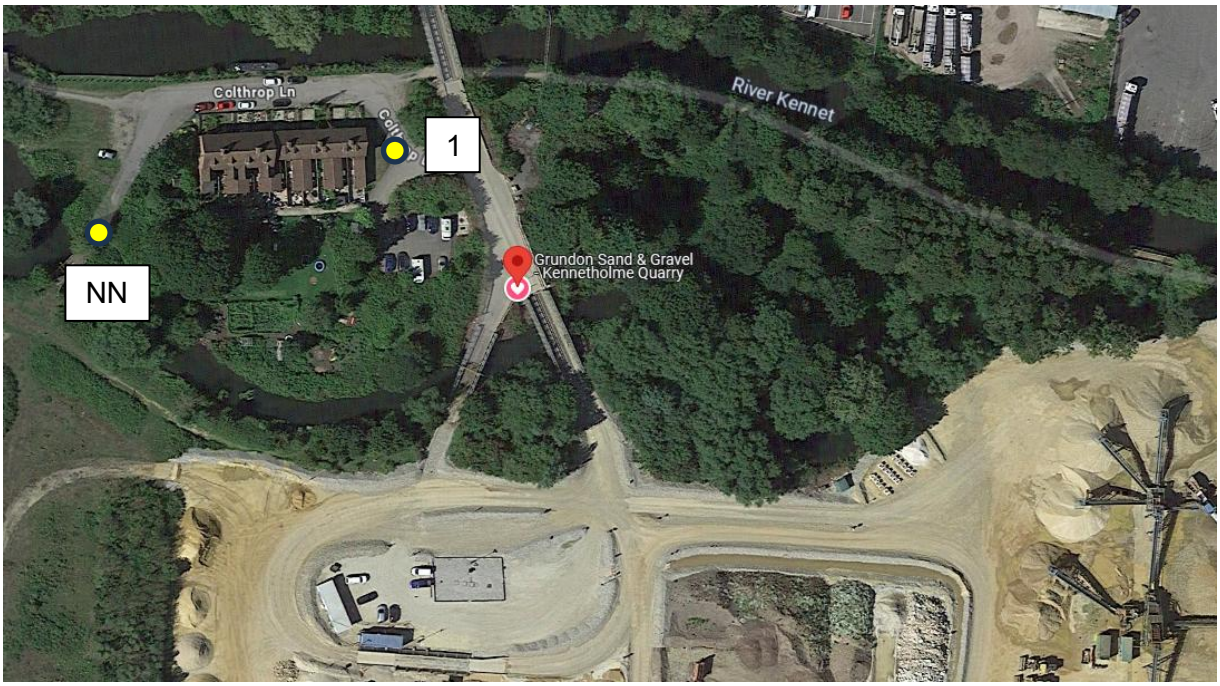
Appendix B (continued)

Plant Layout and Elevations:



Appendix C – WBM Noise Survey Locations/Assessment Location

Off-site measurement positions



Location		Description (free field positions)
1	Colthrop Cottages	On grass verge approximately 5 metres east of Colthrop Cottages, in line with the southern façade.
NN	Additional Location (not used)	Approximately 20 metres southwest of Colthrop cottages, approximately 5 metres from the River Kennet.

Appendix C (continued)

On-site measurement positions

Appendix D – Survey Details June 2025

Dates and Locations of Manned Baseline and Plant Noise Surveys

14:35 – 17:15, Wednesday 25 June 2025 (Baseline); and

08:50 – 11:10, Friday 27 June 2025 (Second Survey & Plant Measurements).

At Location 1. Colthrop Cottages, plus additional location as shown in the plan and described in Appendix C.

Surveys carried out by

Johan Beavis Berry

Weather Conditions

Date	Conditions
Wednesday 25 June 2025	4-5 Oktas, south-westerly breeze 2-3 m/s, ~25°C
Friday 27 June 2025	4 Oktas, south-westerly breeze 3-4 m/s, ~20°C

Instrumentation used (Serial Number)

Instrumentation	Date
Norsonic 140 Sound Level Meter (1403136)	Wednesday 25 June 2025 & Friday 27 June 2025
Norsonic 1251 Calibrator (31992)	

Calibration

The sensitivity of the meter was verified on site immediately before and after the survey. The measured calibration levels were as follows:

Survey Date	Start Cal	End Cal
14:35 – 17:15, Wednesday 25 June 2025	113.6 dB(A)	113.6 dB(A)
08:50 – 11:10, Friday 27 June 2025	113.7 dB(A)	113.7 dB(A)

The meter and calibrator are tested monthly against Norsonic Calibrators, type 1253 (serial number 22906) and type 1256 (serial number 125626100) both with UKAS approved laboratory certificate of calibration. In addition, the meter and calibrator undergo traceable calibration at an external laboratory every two years.

Survey Details

On Wednesday 25 June 2025 attended baseline sample measurements of 15 minute duration were taken at a location representative of the nearest residential dwellings to the site (three additional measurements were taken at the northern side of the dwellings, but theses were not used in the assessment). The microphone of the meter, positioned on a tripod, was at a height of between 1.2 and 1.5 metres above local ground level, with a windshield used throughout. The Grundon site was not operating during this survey.

On Friday 27 June 2025, attended sample measurements of 15 minute duration were taken at a location representative of the nearest residential dwellings to the site (with the Grundon plant operating). Plant measurements of around 1 minute duration were also taken on site between the plant site and the dwellings.

Appendix E – Sample Survey Results

Wednesday 25 June 2025 – Baseline Measurements (Site Not Operating)

Location	Start Time	Results dB (T = 15 minutes)				Comments / Observations
		$L_{Aeq,T}$	$L_{Amax,f}$	$L_{A10,T}$	$L_{A90,T}$	
1 Colthrop Cottages	14:37	56	85	55	41	Birdsong, breeze in trees, distant road traffic, faint running water, occasional distant jet aircraft. Intermittent angle grinding and DIY noise from dwelling though not frequent enough to influence the L_{A90}, typically raising levels to 50-52 dB(A) when grinding. Frequent HGV movements arriving and departing wider site. Ambient levels in lulls of angle grinding observed to be 43 to 45 dB(A). Noise from wider site direction (Axtel concrete plant site) including faint broadband reversing alarms, occasional impacts and very faint plant noise near start of sample.
	15:12	52	73	53	39	Birdsong, breeze in trees, faint running water, distant road traffic noise and occasional jet aircraft, train passing on mainline 15:15. Intermittent angle grinding and DIY at dwelling. Very loud military aircraft 15:20 up to 70 dB(A), light aircraft 15:23. Audible activity from wider site direction (Axtel concrete plant site) including intermittent impacts, HGV movements and falling material.
	15:48	51	75	50	41	Birdsong, breeze in trees, intermittent angle grinding and DIY sounds at dwelling, faint running water. Occasional impacts and broadband reversing alarms from wider site direction (Axtel concrete plant site), light aircraft 15:54. Occasional HGV arrival/departure on access road over bridge.
	16:24	54	81	53	39	Birdsong, breeze in trees, distant road traffic noise, faint running water, intermittent angle grinding at dwelling, HGVs on access road crossing bridge. Nearby strimmer/chainsaw (east) briefly 16:33. Occasional passing pedestrians, overhead light aircraft 16:40, occasional vehicles (from wider site and private) crossing bridge. Occasional vehicles passing measurement position to access dwellings. Distant general industrial noise from north including tonal reversing bleepers and impact noises.
	16:39	52	74	53	37	
	16:54	54	81	55	39	

Appendix E (continued)

Wednesday 25 June 2025 – Baseline Measurements (Site Not Operating)

Additional location (not used in assessment)

Location	Start Time	Results dB (T = 15 minutes)				Comments / Observations
		$L_{Aeq,T}$	$L_{Amax,f}$	$L_{A10,T}$	$L_{A90,T}$	
Additional Location to North	14:55	52	67	56	48	Birdsong, breeze in trees, running water from nearby weir controlling sound climate. Offsite tonal reversing bleepers (north), distant road traffic, occasional distant aircraft and light aircraft overflight. Intermittent angle grinding and DIY noise from dwelling with observed sound levels up to 60 dB(A). Intermittent drill-type noise from wider site direction approximately 50 dB(A), along with occasional impacts and HGV movements (Axtel concrete plant site). Industrial noise from north including vehicle movements.
	15:31	52	65	54	49	Birdsong, weir controlling background sound level, angle grinder and DIY sound at dwelling. Intermittent drill-type sound from wider site direction plus clanking impact noises (Axtel concrete plant site).
	16:06	54	68	58	49	Birdsong, breeze in trees, weir controlling background sound level, occasional light aircraft. Nearby angle grinding at dwelling with increased on-time (approximately 60%). Occasional impact noises on wider site (Axtel concrete plant site).

Appendix E (continued)

Friday 27 June 2025 – Existing Site Noise Measurements (Site Operating)

Location	Start Time	Results dB (T = 15 minutes)				Comments / Observations
		$L_{Aeq,T}$	$L_{Amax,f}$	$L_{A10,T}$	$L_{A90,T}$	
1 Colthrop Cottages	08:52	51	75	51	46	Birdsong, breeze in trees, very faint running water, helicopter 08:54, crane movement at depot to north 08:55 and 09:02 onwards, passing trains 08:56, 09:03, van arrives on access road over bridge 09:03, car departs over bridge 09:05. Site just audible in background with broadband plant and broadband reversing alarms noted . Site estimate no more than ≈46 dB(A)
	09:09	48	64	49	45	Birdsong, breeze in trees, very faint running water, aircraft 09:16, activity at depot to north throughout sample, passing trains 09:18. Site just audible in background with broadband plant and broadband reversing alarms noted plus falling material 09:22. Site estimate no more than ≈45-46 dB(A)
	10:43	53	71	54	46	Birdsong, breeze in trees (increased wind speed), crane engine to north throughout sample, nearby voices and occasional distant jet aircraft, vehicle departs 10:45 (loud exhaust), 2 vans arrive 10:47, depart 10:50. Site just audible in background with broadband plant noted. Site estimate no more than ≈46 dB(A).

Appendix F – Plant Noise Data

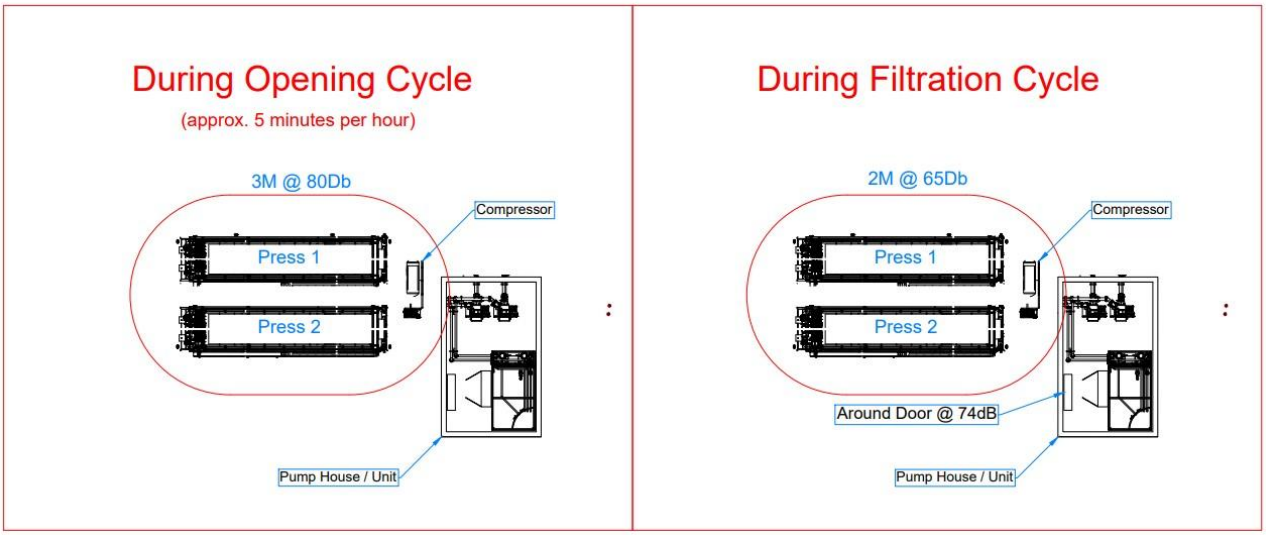
The data from the plant measurements relating to the processing plant to be used are presented in the table below:

Start Time	Loc	Results dB (T = 1 minute)				Comments / Observations
		$L_{Aeq,T}$	$L_{Amax,f}$	$L_{A10,T}$	$L_{A90,T}$	
09:28	Riverside	63	66	64	62	Foliage, partial screening
09:52	A	65	66	65	64	On bund (mic height 2m)
09:56	A	66	78	67	64	On bund (mic height 2m). Including loading shovel impacts
09:58	B	66	73	67	66	On bund (mic height 2m)
10:01	B	66	69	67	66	On bund (mic height 2m)
10:05	C	62	66	63	61	Mic height 1.5m
10:08	D	58	65	60	56	Mic height 1.5m. Including vehicle movement
10:10	D	58	66	59	56	On bund (mic height 2m)
10:12	E	60	63	62	59	Behind 0.5m bund
10:15	F	64	66	65	63	In gap between stockpiles (partially screened)
10:18	G	68	70	69	68	On bund (mic height 2.5m)
10:21	G	70	72	70	69	On bund (mic height 2.5m)
10:24	H	55	63	56	53	Possible extraneous influence
10:26	H	55	60	57	54	Possible extraneous influence
10:29	I	51	56	52	49	Extraneous influence incl birdsong and distant aircraft

Appendix F (continued)

The plant noise data used for the silt presses are based on the following information provided by the operator:

Silt Presses:



Appendix G - SoundPLAN Noise Mapping Assumptions

Calculations were undertaken using SoundPLAN 9.1 (updated 27 June 2025) and utilising the method in BS ISO 9613-2:2024: "*Acoustics. Attenuation of sound during propagation outdoors - Engineering method for the prediction of sound pressure levels outdoors*."

Noise calculations were made on a 1 metre grid at a calculation height of 1.5 metres above local ground level to represent ground floor level.

The calculations assume 90% soft ground across the calculation area.

Barrier attenuation is included in the calculations due to that afforded by the existing acoustic fencing adjacent to the access road (2.5 metres in height), but not due to any other structures on site.

Sound Power Level data for the silt presses and the processing plant has been included based on plant noise data provided by the operator and plant measurements on site on Friday 27 June 2025 respectively. This data is detailed in Appendix F.

Sound Power Level data for the loading shovel, plant conveyors and HGV movements on site are based on measurements of the same type of plant previously measured on this and other sites contained within the WBM plant noise database.

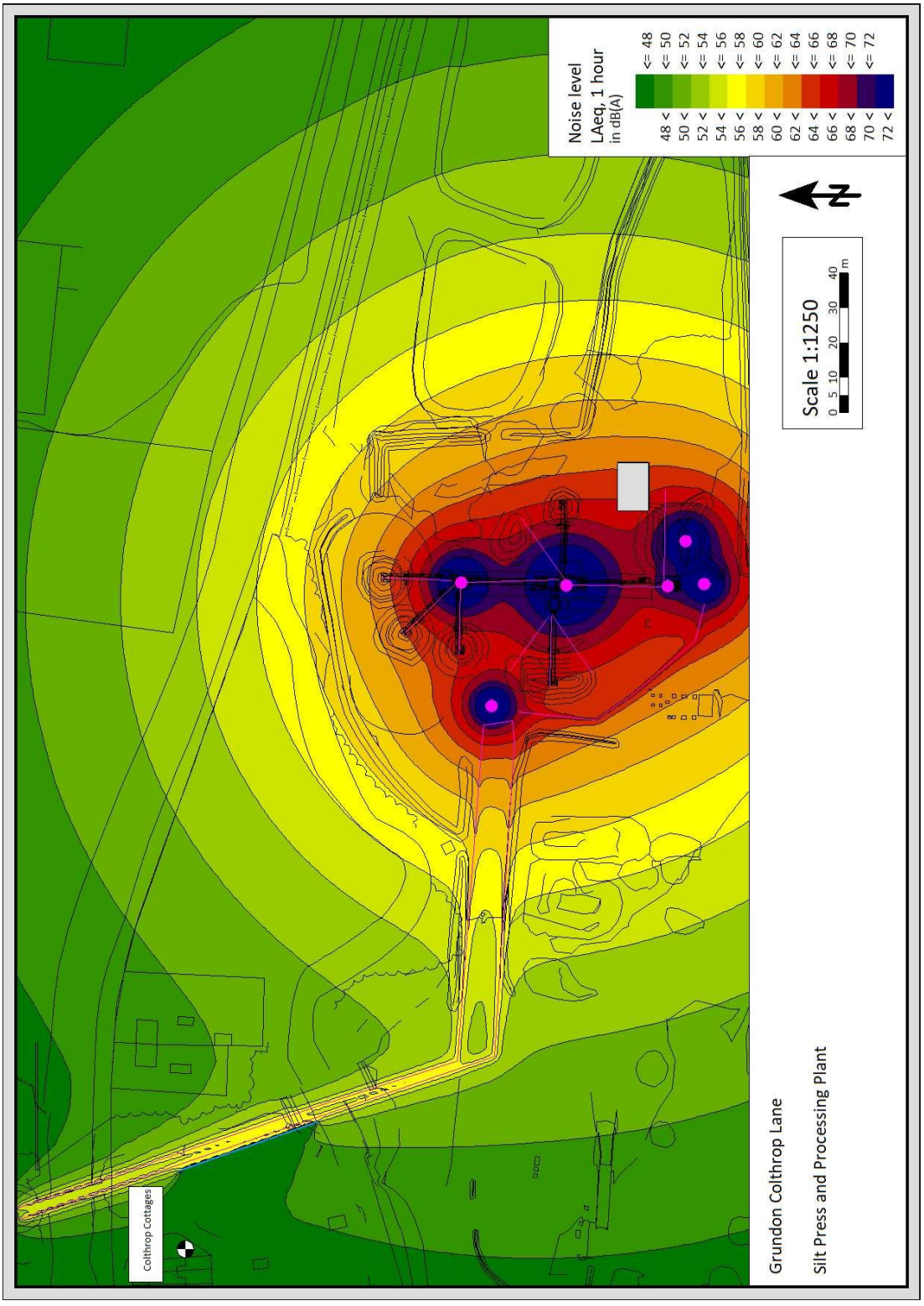
The building enclosing the silt presses has been assumed to be single skin trapezoidal steel (as included in the existing SoundPLAN library) and was modelled as such.

A summary of the data input into the SoundPLAN calculations is presented in the following table.

Plant Item	Sound Power Level dB L_{WA}	Source Height (m)	On time	OS Grid Reference
Existing Processing Plant/Operations				
Main Screen/Sand plant	104	2.5	100%	E: 454198 N: 166213
Secondary screen	100	2.5	100%	E: 454198 N: 166243
Feed hopper	93	2	25%	E: 454197 N: 166184
Conveyors (9)	74/metre	1 to 4	100%	Various
Loading Shovel	104	2	25% at each of two locations	E: 454163 N: 166234 (loading) E: 454198 N: 166173 (at hopper)
Loading Shovel Movements	104 @ 15 kph (61.2/metre)	2	4 one-way movements	As above
Silt Presses				
Opening cycle	97.5	2	8.33%	
Filtration cycle	79	2	91.67%	
Pre-screen	106	3.5	100%	
Conveyor	74/metre	2	100%	
HGV movements				
HGVs within site	93 @15 kph (51.2/metre)	2	6 per hour	N/A

Appendix H – SoundPLAN Noise Plot

All Existing & Proposed Site Operations (07:00-18:00):



Appendix I – BS4142 : 2014 + A1: 2019 Assessment

(a) Statement of Qualifications

See details about The Author on page 2 of this report.

(b) Source Being Assessed

1) Description of the main sound sources and of the specific sound

The sources under investigation are the augmented and expanded recycling operations on site as well as HGV movements around the site. The main noise sources are listed in Appendix G and would give rise to the specific sound levels at the off-site receiver locations.

2) Hours of operation

The normal hours of operation are Mondays - Fridays 07.00–18.00 and 07:00 to 13:00 Saturdays. No operations on Sunday or Bank/Public Holidays.

3) Mode of operation (e.g. continuous, twice a day, only in hot weather)

The operations will only take place during the hours stipulated above.

4) Statement of operational rates of the main sound sources (e.g. maximum load setting, 50% max rate, low load setting)

The measurements and assessment have been based on a "*maximum load setting*" i.e. with all main fixed elements of the site operating simultaneously for the entire assessment period of one hour apart from the vibrating feed hopper (25% on time) and the loading shovel (at the feed hopper and HGV loading area) that has been included as operating for 50% of the one hour period (25% at each location with four one-way movements in between).

HGV movements are input as being 6 one-way movements per hour as representative of the normal expected movements.

The calculated site noise levels are therefore likely to be an overestimate.

The processing plant and silt press operation is modelled based on data provided by the operator and presented in Appendix F. The breakdown of the noise sources included in the SoundPLAN noise model is tabulated in Appendix G.

5) Description of premises in which the main sound sources are situated (if applicable).

The site is open with the processing plant and silt press operated by Grundons located/to be located in the northern part of the wider site. Vehicles access the site from the north-west via the access road across the bailey bridge over the River Kennet. A site plan is provided in Appendix B.

Appendix I (continued)

(c) Subjective Impressions

1) Dominance or audibility of the specific sound

At the assessment location (Colthrop Cottages), the ambient and background sound levels are generally controlled by distant road traffic plus local HGV movements as well as local and industrial/commercial activity including operations on the wider site in the background.

Given the separation distances involved between the proposed new plant items on site and the dwellings considered, the calculated sound levels due to those items as well as the existing ambient and background sound levels including observations/estimates made relating to the exiting permitted site operations during the second survey on Friday 27 June 2025, it is expected that the specific sound will continue to be just audible in the background, but will be largely masked by other environmental noise.

2) Main sources contributing to the residual sound.

The daytime noise climate in the area during the surveys undertaken by WBM in June 2025 was affected primarily by distant road traffic noise, HGV movements to the wider site on the access road, with other industrial/commercial activity, occasional aircraft, local activity, faint river noise and operation at the Axtel concrete plant just audible to audible at times. The existing site operations were just audible in the background during the second survey when the plant was operating.

(d) The Existing Context and Sensitivity of Receptor

The noise climate during the daytime at the chosen assessment location is characterised primarily by distant road traffic noise, local HGV movements to the wider site on the access road, local activity and other industrial/commercial noise. The site is located to the south of a large industrial estate on the northern side of the River Kennet and the area in general is a mixed commercial / industrial and residential use. There are numerous other commercial / industrial sites neighbouring residential dwellings in the locality. With regard to sensitivity, the receptor location is residential properties and are therefore considered to be of “High” sensitivity. Whilst the receptor is considered to be of high sensitivity, the context of the site and surroundings indicates that residents in this type of area would expect some audibility of noise from industrial and commercial operations. Other sources of noise in the area included occasional aircraft, birdsong, breeze in trees, faint river noise and other local activity including that from industrial/commercial premises in the area and the Axtel concrete plant on the wider site.

(e) Measurement Locations and Justification

Measurement locations, their distance from the specific sound source, the topography of the intervening ground and any reflecting surface other than the ground, including a photograph, or a dimensioned sketch with a north marker. A justification for the choice of measurement locations should also be included.

The measurement location used for the consideration of the baseline noise data and for site sound estimation of the existing permitted operations on site was near to residential properties to the north-west of the site adjacent to the access road. The data were used to determine the acoustic environment and to measure residual (ambient) and background sound levels in the vicinity of these nearest dwellings as well as to establish estimated site sound levels from the existing permitted operations (and to assess the presence of any acoustic features of the sound from the existing operations).

Appendix I (continued)

The receptor location selected for this assessment is representative of the closest residential areas to the site.

(f) Sound Measuring Systems, Including Calibrator / Pistonphone

1) Type

See Appendix D

2) Manufacturer

See Appendix D

3) Serial number

See Appendix D

4) Details of the latest verification test including dates

See Appendix D

(g) Operational Test

1) *Reference level(s) of calibrator, multi-function calibrator or pistonphone;*
   See Appendix D

2) *Meter reading(s) before and after measurements with calibrator, multi-function calibrator or pistonphone applied.*
   See Appendix D

(h) Weather Conditions

1) Wind speed(s) and direction(s)

See Appendix D.

2) Presence of conditions likely to lead to temperature inversion (e.g. calm nights with little cloud cover) None.

3) Precipitation None

4) Fog None.

5) Wet ground None.

6) Frozen ground or snow coverage None.

7) Temperature: See Appendix D.

8) Cloud Cover See Appendix D

(i) Date(s) and Time(s) of Measurements

See Appendix D

(j) Measurement Time Intervals

15 minutes

Appendix I (continued)

(k) Reference Time Interval(s)

The reference time interval is 1 hour for the daytime assessment between 07:00 and 23:00 hours.

(l) Specific Sound Level

1) Measured sound level(s)

The specific sound level for the existing and proposed site operations could not be measured at the assessment location as the proposed operations on site are not yet on site, Site sound levels from the existing permitted processing plant and associated operations was just audible in the background during the second survey on Friday 27 June 2025 and were estimated to be no more than 45-46 dB(A). It is expected that the site operation including the proposed new elements would generally be just audible in the background at the assessment location when running as is currently the case. This has been determined from calculation based on sound level data based on the data provided by the operator for the proposed new elements and plant noise measurements on site for the existing operations.

2) Residual sound level(s) and method of determination

The representative residual sound level was determined from the attended noise surveys at Location 1. The measurements were undertaken in June 2025.

The representative daytime residual noise levels were as follows:

1. Colthrop Cottages 53 dB $L_{Aeq,15min,free\text{-}field}$

3) Ambient sound level(s) and method of determination

As measurements were undertaken without the operations at the site taking place, the ambient sound level is the same as the residual sound level. The representative residual and ambient sound levels were determined from the attended noise survey at Location 1. The measurements were undertaken in June 2025.

The representative daytime ambient noise levels were as follows:

1. Colthrop Cottages 53 dB $L_{Aeq,15min,free\text{-}field}$

Appendix I (continued)

For the daytime baseline sample measurements at the attended survey location the following "Comments" were made:

Location 1 – Colthrop Cottages	Birdsong. Breeze in trees. Some river noise. Distant road traffic noise. Some HGV movements to Axtel concrete plant on access road. Some power tool use at dwellings. Distant aircraft movement. Axtel concrete plant just audible in background.

4) Specific sound level(s) and method of determination

The specific sound levels for the assessment location has been determined from measurement/estimation and calculation (see Sections 6 and 7 of this report) as follows:

Daytime (07:00 to 18:00):

46 dB $L_{Aeq,1\ hour,\ free\ field}$ for Colthrop Cottages

5) Justification of methods

Calculation was used as the additional elements to be installed on the site are not yet in place and therefore cannot be measured at the nearest dwellings.

6) Details of any corrections applied

See the Potential Impact of Uncertainty section (q) at the end of this appendix.

(m) Background Sound Level(s)

Background sound level(s) and measurement time interval(s) and, in the case of measurements taken at an equivalent location, the reasons for presuming it to be equivalent.

The 15-minute attended sample measurements undertaken in June 2025 at the residential survey location gave a representative daytime background sound level of:

1. Colthrop Cottages — 40 dB $L_{A90,15min,free\text{-}field}$

(n) Rating Level(s)

1) Specific sound level(s)

The specific sound level(s) stated earlier are:

Daytime (07:00 to 18:00):

46 dB $L_{Aeq,1h,free\text{-}field}$ for Colthrop Cottages.

2) Any acoustic features of the specific sound

The potential adjustments for the different features and assessment methods are summarised in the table in Section 3 of this report. Considering the nature of the proposed operations particularly in the context of the existing ambient and background sound environment in the area during the daytime and the level of the estimated and calculated site sound levels at the dwellings as well as observations at the dwellings during normal operation of the existing/permitted plant, one would not expect any acoustic features of the noise to be readily distinguishable at the dwellings and an acoustic feature correction would not be appropriate.

Appendix I (continued)

3) Rating level(s)

The rating levels for daytime are therefore 0dB above the specific noise level stated above. This results in the following rating level determined in accordance with BS 4142:2014+A1:2019:

Daytime (07:00-19:00):

46 dB $L_{Aeq,1h,free\text{-}field}$ for Colthrop Cottages.

(o) Excess of the level(s) over background sound level(s)

Excess of the rating level(s) over the measured background sound level(s) and the initial estimate of the impacts

The rating level, the background sound level and the excess of the rating level over the representative background sound level for the operating hours of the site are presented in the following table:

Receiver Location Daytime (07:00-18:00)	**Rating Level dB $L_{Ar,\ Tr}$**	**Representative Background Sound Level dB $L_{A90,15\ min}$**	**Excess of Rating Level over Background Sound Level**
1. Colthrop Cottages	46	40	+6

When the rating level is above the background sound level, a difference of around +5 dB is likely to indicate an adverse impact and a difference of around +10 dB or more is likely to indicate a significant adverse impact, depending on the context.

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

(p) Conclusions of the assessment after taking context into account

Location: Colthrop Cottages:

The calculations demonstrate a rating level of 46 dB $L_{Ar,\ Tr}$ at Colthrop Cottages which is 6 dB(A) above the representative background sound level of 40 dB $L_{A90,\ T}$. The representative residual sound level at Colthrop Cottages is 53 dB $L_{Aeq,T}$.

Although the initial conclusion would be that the assessment indicates an adverse impact at Colthrop Cottages during the daytime operating hours of the site, context must be taken into consideration.

In context, the augmented and expanded operation will be taking place on an existing site in an area that has a significant amount of existing transportation noise and industrial activity and any audible noise from the site operations is unlikely to be readily distinctive from the existing transportation and industrial/commercial noise in the area.

The calculated site sound levels from the proposed new elements do not noticeably impact the overall calculated site sound levels due to the existing/permitted operations on site and this is backed up by the estimated site noise levels during the second survey undertaken on Friday 27 June 2025.

Appendix I (continued)

It should also be noted that the calculated and estimated site sound levels are well below the site noise limit in the current planning permission for the site of no more than 10 dB(A) above the background noise level or an absolute limit of 55 dB $L_{Aeq,1\ hour\ free\ field}$ at Colthrop Cottages as well as being below the level considered by the EA as 'causing pollution'.

As there will be no change to the sound environment at the nearest dwellings to the site due to the continuing permitted operations as well as the proposed new elements, it can be considered that the overall site operations would not constitute an adverse impact at the nearest receptor.

The daytime soundscape for Colthrop Cottages will continue to be affected by distant road traffic noise, local HGV movements to the wider site on the access road, faint river noise, birdsong, breeze in tress, other industrial/commercial activity, occasional aircraft movements and local activity. The operation of the Axtel concrete plant is likely to remain just audible in the background as is currently the case when operational.

It is expected that the site will continue to be just audible in the background at Colthrop Cottages, but will generally not be readily identifiable/distinguishable at this location most of the time during the daytime operating hours of the site (as is currently the case).

(q) The potential impact of uncertainty

Section 10 of BS 4142:2014+A1:2019 states: "*Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty. Report the level and potential effects of uncertainty*."

One of the largest levels of uncertainty is whether the recycling operations gives rise to the calculated noise level at the receiver locations considered.

The measurements and assessment have been based on a realistic worst case scenario during the normal daytime site operations.

The calculations and assessment have been based on a "*maximum load setting*" i.e. with the main fixed plant items all operating continuously and simultaneously for the entire assessment period (the vibrating feed hopper is included as operating for a generous 25% of the assessment period, while the loading shovel is included as operating for 50% of the assessment period spilt evenly between at the HGV loading area and the feed hopper) and is therefore likely to be an overestimate.

The modelled scenario is therefore very much a worst case for when all plant is operating.

The model allows for a worst case scenario to provide a more robust assessment.

Existing HGV movements have been included as being 12 per hour (daytime) for the asphalt plant to reasonable worst case scenario with regard to the rate of HGVs entering and leaving the plant (as per the normal hourly HGV movements associated with that operation) with an additional 8 HGVs per hour entering/leaving the recycling area for the recycling operations also representing a reasonable worst case scenario based on average daily figures. The Sound Power Level used for HGV movements within the site is based on movements at 15 kilometres per hour.

As stated above, for the majority of the time, the scenario as modelled will not occur because there will be some variability in the site operations and all mobile plant and machinery may not operate simultaneously for the proportion of the time used in the model.

The site noise calculations do not include any allowance for air absorption but this is unlikely to have any significant outcome on the calculated sites noise levels and conclusions on impact.