



Environmental Permit Application

Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

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Basis of Report

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1.0 Non-technical Summary

A noise assessment has been undertaken at the Sheerness Recycling Ltd Site in Ashford. The noise assessment was required in order to vary the existing environmental permit (EPR/HB3700TW) at the Site.

The assessment was undertaken with reference to British Standard 4142:2014+A1:2019.

The results of the assessment have been concluded that:

- During the daytime, the rating level of general site activities would be 5dB(A) above the background sound level which gives an indication of adverse impact, depending on the context.
- During the daytime, the rating level of general site activities with screener operations would be 12dB(A) above the background sound level which gives an indication of significant adverse impact, depending on the context.
- During the daytime, the rating level of general site activities with screener and crusher operations would be 15dB(A) above the background sound level which gives an indication of significant adverse impact, depending on the context.

The context assessment has shown that the permit variation does not propose any changes to existing activities at the Site and operations would remain in-line with what is currently permitted. Once this has been taken into account, it is considered the Site is having and will have a 'low' impact at the nearest NSRs in conjunction with BS4142:2014+A1:2019.



2.0 Introduction

Sheerness Recycling Ltd has appointed SLR Consulting Ltd. (SLR) to undertake a noise assessment at Sheerness Recycling Facility located at Units 1 & 2 Cobbs Wood Trading Estate, Brunswick Road, Ashford, TN23 1EL (the Site). The noise assessment is required in order to vary the existing environmental permit (EPR/HB3700TW) at the Site.

2.1 Report Structure

This Report presents:

- A description of the Site.
- A description of applicable guidance.
- A sound survey to determine the specific and rating sound levels of the Site and the baseline sound levels at the nearest noise sensitive receptors (NSRs) to the Site.
- Sound modelling software CadnaA® noise level predictions associated with operations using the calculation methodologies in ISO 9613-2:1996 *Acoustics – Attenuation of Sound during Propagation Outdoors– Part 2: General Method of Calculation*.
- An assessment undertaken in accordance with British Standard 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* as required by the Environment Agency (EA) Guidance Noise and vibration management: environmental permits.

Whilst reasonable effort has been made to ensure that this report is easy to understand, it is technical in nature; to assist the reader, a glossary of terminology is included in **Appendix A**.

The sound survey, report and technical reviews were undertaken by suitably experienced and qualified members of staff, as detailed in **Appendix E**.



3.0 Site Description

The site is located within the Cobbs Wood Trading Estate which comprises a mix of commercial, light industrial and logistic tenants.

The Site is bordered:

- To the North by a wooded corridor with railway lines.
- To the East by a wooded corridor with residential estate.
- To the South by light industrial and railway line.
- To the West by industrial/commercial use.

The nearest NSRs to the Site are the residential properties located to the north-east across the railway line, along Atherfield Drive. Figure 3-1 shows the location of the Site and the closest NSRs.

Figure 3-1: Site Location



3.1 Permit Variation and Site Operations

The permit variation application seeks to increase the permitted allowance of inert waste to 150,000 tpa of construction, demolition and excavation waste materials arising from local developments to produce recovered secondary aggregates and to increase storage capacity to 5,000 tonnes at any one time.

The proposed activities at the Site will remain unchanged and comprise the storage and physical treatment of waste by sorting, separation, blending, screening and crushing of waste into different components for recovery with no changes to existing site activities proposed. Consequently, it is considered that the proposed permit variation would not materially change the noise levels currently being generated by the Site.



SLR understands that the following items of plant currently operate at the Site:

- CAT 966m loading shovel;
- Powerscreen Warrior 1400x screener;
- Doppstat SM620 tracked trommel;
- Kobelco SK210LC-10-2 excavator;
- Komatsu FG15ST2 forklift; and
- Sandvik QJ341 mobile jaw crusher (only on site on a campaign basis).

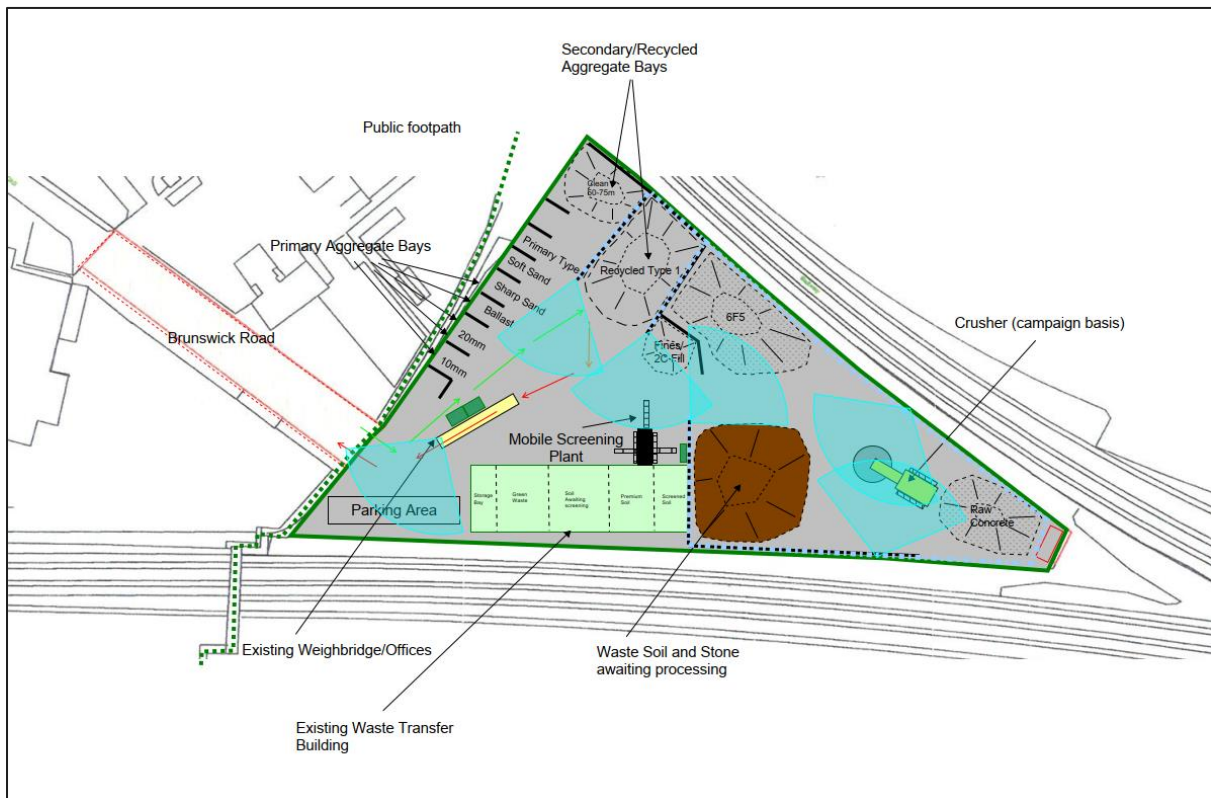
With regards to operations at the site, it is understood the following process currently take place:

- Topsoil production using trommel (usually only occurs during the summer months);
- Crushing every 4 to 6 weeks for 3-4 days;
- Screening (occurs most days);
- 360 loading screener (used all day most days);
- Loading shovel on-site full time which typically moves material from the screener / crusher to storage bays and loading HGVs; and
- General HGV/plant noise such as tailgates and reversing beepers.

The operational hours of the Site will not be altered as part of the permit variation and are currently from Monday to Friday 07:00 to 17:00 and from 07:00 to 12:00 on a Saturday.

A Site layout plan is shown in Figure 3-2 below.

Figure 3-2: Site Layout



3.2 Previous Noise Complaints at the Site

The Site has been subject to previous noise complaints, mostly unsubstantiated, from a resident living at a property on Atherfield Drive, and these complaints related to when the crusher was operational at the Site.

However, the last complaint received was on the 24th October 2022, which after investigation was again found to be unsubstantiated as the crusher was not on-site at the time and there has been no complaints since this date.

In addition to the above, a new crusher has been purchased for the Site and since it has been operating no further noise complaints have been received.



4.0 Relevant Guidance

A summary of the requirements outlined in the EA Guidance document, and the assessment methodology outlined in BS4142:2014+A1:2019 are provided below.

4.1 Noise and vibration management: environmental permits

The Environment Agency (EA) released the guidance document *Noise and vibration management: environmental permits* (NVM) in July 2021, replacing the previous guidance presented in *Horizontal Guidance for Noise (H3) parts 1 and 2*. The NVM details when a noise assessment is required, the competency required to undertake an assessment and how to carry out a noise impact assessment.

The NVM references BS4142:2014+A1:2019 as the appropriate assessment methodology.

The NVM outlines how context should be taken into account in the assessment and notes that *“Whilst context allows you to interpret impact thresholds (to a degree), there are practical limits to the extent of the interpretation. It is unlikely you could adjust the assessment outcome beyond the next band (for example, modifying a BS 4142 outcome of more than 10dB to be less than an ‘adverse impact’).”*

Determining the outcome of the assessment the following should be considered:

- weekdays rather than weekends.
- what the sound ‘means’ – meaningful sound is one that conveys an unpleasant meaning beyond its mere acoustic content, for example noise from an abattoir.
- time of day.
- the absolute sound level.
- where the sound occurs.
- new industry or new residences.
- intrinsic links between the source and receptor, for example the source is the resident’s place of work.
- local attitudes.
- the residual acoustic environment.
- the land use at the receptor (for example, gardens rather than yards).
- the exceedance (traditional BS 4142).
- whatever else might be particular to that individual situation.

Based on the results of the BS4142:2014+A1:2019 assessment the NVM has three distinct requirements as detailed in Table 4-1 overleaf.



Table 4-1: NVM Assessment

| NVM Result | BS4142 Descriptor | Next Stage |
|---|--|--|
| Unacceptable level of audible or detectable noise | The closest corresponding BS 4142 descriptor is 'significant adverse impact' | 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. |
| Audible or detectable noise | The closest corresponding BS 4142 descriptor is 'adverse impact' | Your duty is to use appropriate measures to prevent or, where that is not practicable, minimise noise. You are not in breach if you are using appropriate measures. But you will need to rigorously demonstrate that you are using appropriate measures. |
| No noise, or barely audible or detectable noise | The closest corresponding BS 4142 descriptor is 'low impact or no impact' | Low impact does not mean there is no pollution. However, if you have correctly assessed it as low impact under BS 4142, the environment agencies may decide that taking action to minimise noise is a low priority. |

4.2 British Standard 4142:2014+A1:2019

British Standard 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* is intended to be used to assess the potential adverse impact of sound, of an industrial and/or commercial nature, at nearby noise-sensitive receptor locations within the context of the existing sound environment.

Where the specific sound contains tonality, impulsivity and/or other sound characteristics, penalties should be applied depending on the perceptibility. For tonality, a correction of either 0, 2, 4 or 6dB should be added and for impulsivity, a correction of either 0, 3, 6 or 9dB should be added. If the sound contains specific sound features which are neither tonal nor impulsive, a penalty of 3dB should be added.

In addition, if the sound contains identifiable operational and non-operational periods, that are readily distinguishable against the existing sound environment, a further penalty of 3dB may be applied.

The assessment of impact contained in BS4142:2014+A1:2019 is undertaken by comparing the sound rating level, i.e. the specific sound level of the source plus any penalties, to the measured representative background sound level immediately outside the noise-sensitive receptor location. Consideration is then given to the context of the existing sound environment at the noise-sensitive receptor location to assess the potential impact.

Once an initial estimate of the impact is determined, by subtracting the measured background sound level from the rating sound level, BS4142:2014+A1:2019 states that the following should be considered:

- typically, the greater the difference, the greater the magnitude of the impact;
- a difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- a difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and



- 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. It is an indication that the specific sound source has a low impact, depending on the context.

BS4142:2014+A1:2019 notes that:

“Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.”

BS4142:2014+A1:2019 outlines guidance for the consideration of the context of the potential impact including consideration of the existing residual sound levels, location and/or absolute sound levels.

To account for the acoustic character of proposed sound sources, BS4142:2014+A1:2019 provides the following with respect to the application of penalties to account for *“the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention”*.

- **Tonality** – “For sound ranging from not tonal to predominantly tonal the Joint Nordic Method gives a correction of between 0dB and +6dB for tonality. Subjectively, this can be converted to a penalty of 2dB for a tone which is just perceptible at the noise receptor, 4dB where it is clearly perceptible and 6dB where it is highly perceptible;
- **Impulsivity** – A correction of up to +9dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3dB for impulsivity which is just perceptible at the noise receptor, 6dB where it is clearly perceptible, and 9dB where it is highly perceptible;
- **Intermittency** – When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3dB can be applied; and
- **Other Sound Characteristics** – Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3dB can be applied.”

Finally, BS4142:2014+A1:2019 outlines guidance for the consideration of the context of the potential impact, including consideration of the existing residual sound levels, location and/or absolute sound levels.

4.3 ISO 9613-2:1996

As described in Section 10.3 of BS4142:2014+A1:2019 a valid method of calculating sound levels should be utilised, the method used as an example with BS4142, is ISO 9613-2:1996 a brief summary of which is provided below.

The levels of sound generated by the Site has been predicted in accordance with the prediction framework within ISO 9613-2:1996 Acoustics – Attenuation of Sound during Propagation Outdoors– Part 2: General Method of Calculation. This method of calculation takes into account the distance between the sound sources and the closest receptors, and the amount of attenuation due to atmospheric absorption. The methodology also assumes downwind propagation, i.e. a wind direction that assists the propagation of sound from the source to the receiver.



5.0 Baseline and Operational Sound Survey

5.1 Survey Date

To determine the audibility of the Site at the closest noise sensitive receptors (NSRs) and the baseline sounds levels, a sound survey was undertaken on Wednesday 6th December 2023.

5.2 Site Operations

The purpose of the sound survey was to determine the specific sound levels of the Site and the baseline sound levels at the nearest NSRs to the Site. Attended noise measurements at a location representative of the NSRs to the north of the Site along Atherfield Drive and critical listening to determine the prevailing sound source in the area were undertaken in order to verify that the measured levels were representative. The location of the noise monitoring is shown on Figure 5-1 overleaf and detailed in Table 5-2. Photographs of the survey location (and equipment used) are provided in **Appendix C**.

SLR undertook measurements between the hours of 10:21-15:01 on Wednesday 6th December 2023 when the Site was operational. During the measurements, SLR liaised with the Site to confirm when items of plant were operating. During the monitoring period, the crusher was not operational. It was confirmed that the operational status of the Site was as follows:

- From 10:21-10:30 – Site break, but general Site activities still audible;
- From 10:33-12:24 – Screener operational;
- From 12:53-12:59 – Screener switched off and site not audible
- From 13:00-13:31 – Site break scheduled to start, HGVs which arrive are still loaded during this time;
- From 13:52-14:12 – Screener operational. SLR undertook on-site measurements of the screener during this period;
- From 14:33-15:01 – Screener not operational but general site activities undertaken which included operation of the loading shovel.

As well as liaison with the Site, observations of the soundscape at the monitoring location were also undertaken in order to determine the audibility of the Site at the closest NSRs. Observations of the soundscape during the above periods are detailed in Table 5-1 below.

Table 5-1: Soundscape During Survey Period

| Monitoring Time Period and On-site Operations | General Soundscape and Observations |
|--|--|
| 10:21-10:30 – Site break | Birdsong audible. Noise from reversing beepers, loading shovel and bangs also audible from Site starting up. |
| 10:33-12:24 – Screener operational | Birdsong, occasional train and car movements audible. Noise from loading shovel and bangs from Site audible. Noticeable machinery noise audible when screener was switched on. |
| 12:53-12:59 – Screener switched off | Train pass audible. Site not audible. |
| 13:00-13:31 – Site break scheduled to start, HGVs which arrive are still loaded during this time | Birdsong, train pass, high altitude planes and car movements audible. No Site noise audible, apart from when HGVs arrived (see Section 5.6.2 and Appendix B). |
| 14:33-15:01 – Screener not operational but general site activities undertaken which included operation of the loading shovel | Helicopter overhead, trains and planes audible. Loading shovel at Site audible. |



Figure 5-1: Noise Monitoring Location



5.3 Equipment

The sound survey equipment used during the survey is detailed in Table 5-2. The noise equipment conforms to the latest version of BS EN 61672-1:20131 and is of Type 1 accuracy.

The sound level meter was calibrated before and after each measurement using an acoustic calibrator (conforming to the latest version of BS EN 60942:20182). The drift is reported in Table 5-2. The calibration chain is traceable via the United Kingdom Accreditation Service to National Standards held at the National Physical Laboratory. The relevant calibration certificates for the equipment are shown in **Appendix D**.

Table 5-2: Survey Equipment

| Location including Grid Coordinates | Equipment | Serial Number | Calibration | |
|---|---|---------------|-------------------------------|-------------------------------|
| | | | Before | After |
| NSR Monitoring Location (600408, 142762) | Rion NL-52 Class 1 Sound Level Meter | 00976174 | 1. 94.0 2. 94.0 3. 94.0 | 1. 94.0 2. 94.0 3. 93.9 |
| | Rion NC-75 Acoustic Calibrator | 34134634 | - | |



5.4 Weather Conditions

During the monitoring period, weather conditions were conducive for noise measurements to be undertaken. The weather was clear, with temperatures between 4-5°C. Wind speeds were <math><1\text{ms}^{-1}</math> during the survey period, in a predominantly westerly direction. The weather during each period of monitoring is detailed in Table 5-3 below.

Table 5-3: Weather Conditions

| Monitoring Time Period | Weather Conditions |
|------------------------|---|
| 10:21-10:30 | 5°C, <math><1\text{ms}^{-1}</math> wind speed in a westerly direction, clear skies with 0% cloud. |
| 10:33-12:24 | |
| 12:53-12:59 | 5°C, <math><1\text{ms}^{-1}</math> wind speed in a WSW direction, clear skies with 0% cloud. |
| 13:00-13:31 | |
| 14:33-15:01 | 4°C, <math><1\text{ms}^{-1}</math> wind speed in a SSW direction, clear skies with 0% cloud. |

5.5 Microphone Location and Indices Measured

The microphone of the sound level meter was positioned 1.2m above the ground level in free-field conditions at each location, i.e., at least 3.5m from the nearest vertical reflecting surface.

The following noise level indices were recorded and logged every 1-minute during the noise survey:

| | |
|--------------------------|---|
| L_{Aeq,T} | The A-weighted equivalent continuous noise level over the measurement period T. |
| L_{AFmax} | The maximum A-weighted noise level during the measurement period. |
| L_{A10} | The A-weighted noise level exceeded for 10% of the measurement period. This parameter is often used to describe road traffic noise. A typical measured L _{A10} , the statistical median, is presented. |
| L_{A90} | The A-weighted noise level exceeded for 90% of the measurement period. This parameter is often used to describe background noise. A typical measured L _{A90} , the statistical median, is presented. |

5.6 Operational Sound Level Results

A summary of the survey results to be used in determining the specific sound level of the Site is shown in Table 5-4. The sound levels presented are as follows:

- Ambient Sound Level – the total sound in a given situation at a given time usually composed of sound from many sources, near and far. The measured levels include contributions from the Site in addition to surrounding noise sources such as road and rail traffic.
- Residual Sound Level – the noise level remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise. The measured levels do not include contributions from the Site.
- Background Sound Level – the A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time period.

The full survey data is presented in **Appendix B**.



Table 5-4: Summary of Measured Sound Levels, free-field, dB

| Date | Time | Site Activity | Ambient Sound Level, dB $L_{Aeq,T}$ | Residual Sound Level, dB $L_{Aeq,T}$ | Background Sound Level, dB $L_{A90,T}$ |
|---|-------------|--|-------------------------------------|--------------------------------------|--|
| Wednesday 6 th December 2023 | 10:21-10:32 | General site activities including loading shovel | 49.0 | - | - |
| | 10:33-12:24 | Screener operational | 54.0 | - | - |
| | 12:53-12:59 | Screener not operational, Site not audible. | - | 46.0 | 44.0 |
| | 13:00-13:31 | Site break | - | 47.0 | 44.0 |
| | 14:33-15:01 | General site activities including loading shovel | 51.0 | - | - |

5.6.1 Background Sound Level

With reference to Table 5-4 it can be seen that the background sound level during the period when the Site was not audible and/or on a break was 44dB L_{A90} . This level was the median value of the 1-minute L_{A90} levels measured during each relevant period.

This level does not include any periods when HGVs were accessing the site during the Site break from 13:00 to 13:31 which were removed from the data set as shown in **Appendix B**.

Though the measurement period for the background sound levels was relatively short (38-minutes) it was considered representative of the background sound climate at the nearest receptors whilst the site was not operational. In addition, due to the Site operational hours being 07:00 to 17:00 the baseline level was determined during a representative period during the middle of the working day rather than before or after the Site was operational as these levels could have been more influenced by other sources in the area, such as road, rail and air traffic.

It also should be noted that SLR previously undertook a noise assessment for the Site in July 2021 for crusher operations (reference: 403.04370.00019 Sheerness Recycling Facility Noise Assessment_V1). As part of this assessment, background sound levels were measured at a similar location on Atherfield Drive and the measured background sound level was determined to be 43dB L_{A90} which shows good correlation to the measured sound levels shown in Table 5-4.

5.6.2 Specific Sound Level Determination

With all other residual noise sources being equal (for example noise from traffic, train), the specific sound level of general site activity and the screener may be determined by logarithmically deducting the residual sound level from the ambient sound level measured during operation. It should be noted that the residual sound level excludes any noise associated with the Site during the measurement period. The noise levels removed from the residual data set are shown in **Appendix B**.

The resultant level may be considered representative of the specific sound level of general site activities and the screener at Atherfield Drive. The specific sound level has been calculated as shown below for each scenario:

5.6.2.1 General Site Activity Including Loading Shovel

- Measured operational (ambient) level between 14:33 and 15:01 = **51dB(A)**.
- Measured residual level between 13:00 and 13:31 = **47dB(A)**.
- Calculated specific level = **49dB(A)**.

5.6.2.2 With Screener Operational

- Measured operational (ambient) level between 10:33 and 12:24 = **54dB(A)**.



- Measured residual level between 13:00 and 13:31 = **47dB(A)**.
- Calculated specific level = **53dB(A)**.



6.0 BS4142:2014+A1:2019 Assessment

An assessment in conjunction with BS4142:2014+A1:2019 has been undertaken and has considered the following Site scenarios.

1. General Site activities without the screener in operation.
2. General Site activities including the screener; and
3. General Site activities including the screener and crusher.

With regards to scenarios 1 and 2, these have been assessed in conjunction with the calculated specific sound levels shown in Section 5.6.2.

With regards to scenario 3, as the crusher was not operating at the Site on the day of the survey, a noise model has been utilised to predict the contribution from the crusher at the receptor location.

6.1 Acoustic Character Correction

The character of each noise source and the sound penalty that will be applied in the BS4142:2014+A1:2019 assessment is detailed below:

Scenario 1 - General Site Activities

- **Tonality:** During the measurements, it was noted that, subjectively, there was no clearly perceptible tone as part of the general site activities; therefore, no penalty is required.
- **Impulsivity:** General site activities did not exhibit impulsive characteristics; therefore no penalty is required.
- **Intermittency:** General site activities were not noticeably intermittent; therefore no penalty is required.
- **Other sound characteristics:** As noise from general site activities is not distinctive, no penalty is required.

Based on the above, no penalty is applicable to the calculated specific sound level of 49dB(A).

Scenario 2 - Screener Operations

- **Tonality:** During the measurements, it was noted that there was no clearly perceptible tone as part of the noise from the screener; therefore, no penalty is required.
- **Impulsivity:** The screener did not generate impulsive noise.
- **Intermittency:** The screener did not exhibit intermittent characteristics when running.
- **Other sound characteristics:** As noise from the screener is distinctive compared to the rest of the operations at the site and the residual soundscape, an additional 3 dB penalty is required.

Based on the above, a 3dB penalty is applicable to the calculated specific sound level of 53dB(A).

6.2 Assessment Results

The penalties described in Section 6.1 above have been added to the specific sound level for each activity to derive the rating level:

- General site activities: **49dB L_{Ar}**
- With screener operations: **56dB L_{Ar}**



Table 6-1: BS 4142:2014+A1:2019 Assessment – Scenario 1 - General Site Activities

| Results | | Relevant Section |
|--|----|------------------|
| Measured ambient sound level, dB $L_{Aeq,T}$ | 51 | Table 5-4 |
| Residual sound level, dB $L_{Aeq,T}$ | 47 | Table 5-4 |
| Background sound level, dB $L_{A90,T}$ | 44 | Table 5-4 |
| Specific sound level, dB(A) | 49 | 5.6.1 |
| Acoustic character correction, dB | - | 6.1 |
| Rating level, dB L_{Ar} | 49 | 6.2 |
| Excess of rating over background sound level, dB | 5 | - |

It can be seen from Table 6-1 that the rating level of general site activities exceed the representative background sound level at Atherfield Drive by 5 dB, which in conjunction with BS4142:2014+A1:2019 gives an indication of adverse impact, depending on the context.

Table 6-2: BS 4142:2014+A1:2019 Assessment – Scenario 2 - Screener Operations

| Results | | Relevant Section |
|--|----|------------------|
| Measured ambient sound level, dB $L_{Aeq,T}$ | 54 | Table 5-4 |
| Residual sound level, dB $L_{Aeq,T}$ | 47 | Table 5-4 |
| Background sound level, dB $L_{A90,T}$ | 44 | Table 5-4 |
| Specific sound level, dB(A) | 53 | 5.6.1 |
| Acoustic character correction, dB | +3 | 6.1 |
| Rating level, dB L_{Ar} | 56 | 6.2 |
| Excess of rating over background sound level, dB | 12 | - |

It can be seen from Table 6-2 that the rating level of general site activities with screener operations exceed the representative background sound level at Atherfield Drive by 12 dB, which in conjunction with BS4142:2014+A1:2019 gives an indication of significant adverse impact, depending on the context.

6.3 Noise Model

6.3.1 Noise Model Assumptions

As the crusher was not operational during the monitoring period, noise modelling has been undertaken in order to predict the overall noise level at the closest NSRs inclusive of noise from the crusher.

The sound predictions in this assessment have been undertaken using a proprietary software-based noise model, CadnaA, which implements the full range of UK noise-based calculation methods. The calculation algorithms set out in ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2 General method of calculation* have been used, the model has been based on, and has made the following assumptions:

- A ground absorption factor of 0.5 (mixed ground)
- Contour Data to include existing 2m DTM Lidar data.
- A reflection factor of 3.
- Downwind propagation between the source and receiver



- Average humidity of 70% and an average temperature of 10°C.

The sound pressure levels for the screener and crusher are shown in Table 6-3 below. The table also shows the data source from where the noise level was determined from.

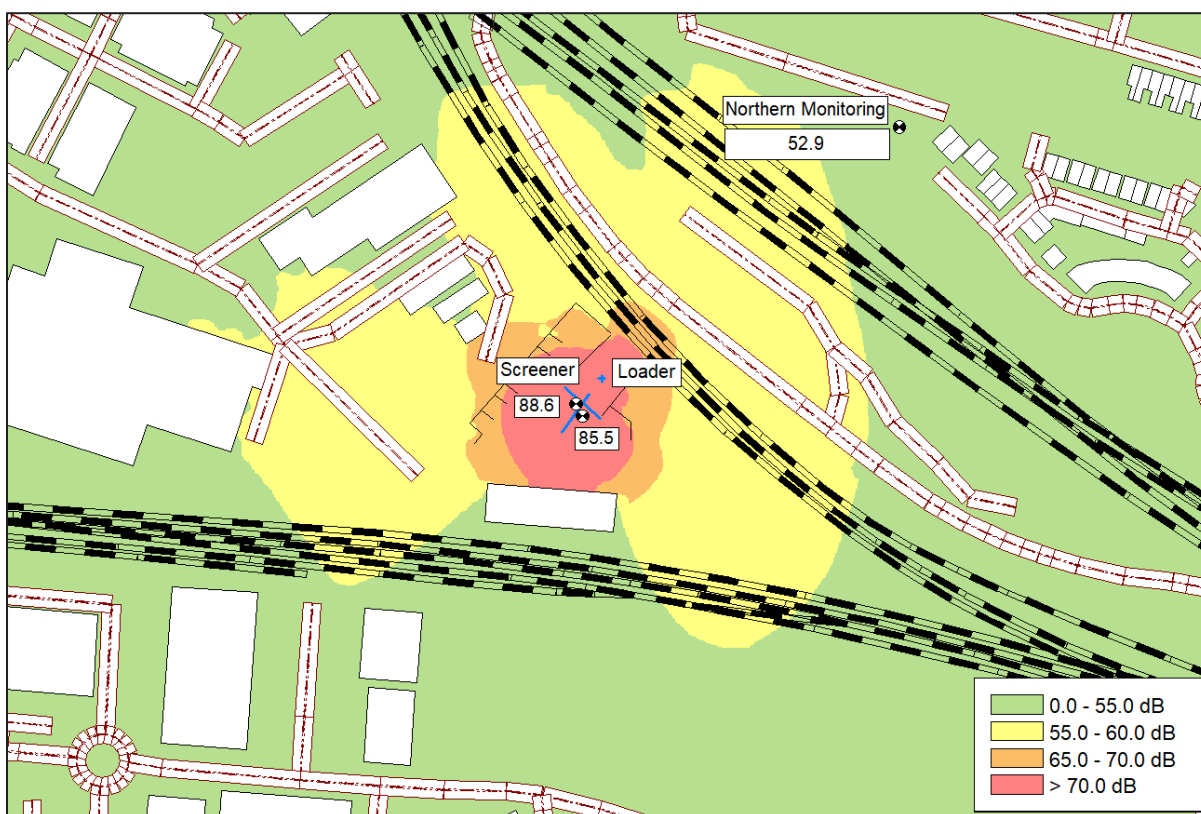
Table 6-3: Operational Noise Levels for Crusher, dB

| Plant | Sound Pressure Level dB(A) | Measurement Distance | Data source |
|------------------------------------|----------------------------|----------------------|----------------------|
| Powerscreen Warrior 1400x Screener | 88.6 | 2.1m | On-site measurements |
| Sandvik QJ341 Mobile Jaw Crusher | 86--98 | 1m | Manufacturer |

It must be noted that the noise model was calibrated so the specific noise levels from general site activities and the screener in operation matched the calculated specific noise level of 53dB at the receptor location which was determined through measurement.

A graphical image of the noise model showing the predicted specific level (without the crusher) is shown in Figure 6-1 below.

Figure 6-1: Daytime $L_{Aeq,T}$ Specific Sound Level without Crusher – dB(A)



The noise levels from the screener have been based on the on-site measurements and the model has been based on the following inputs:

- Loading shovel – point source, 2m height.
- Screener – three-line sources to represent each conveyor, 1.2m height increasing to 2.5m for end of conveyors.

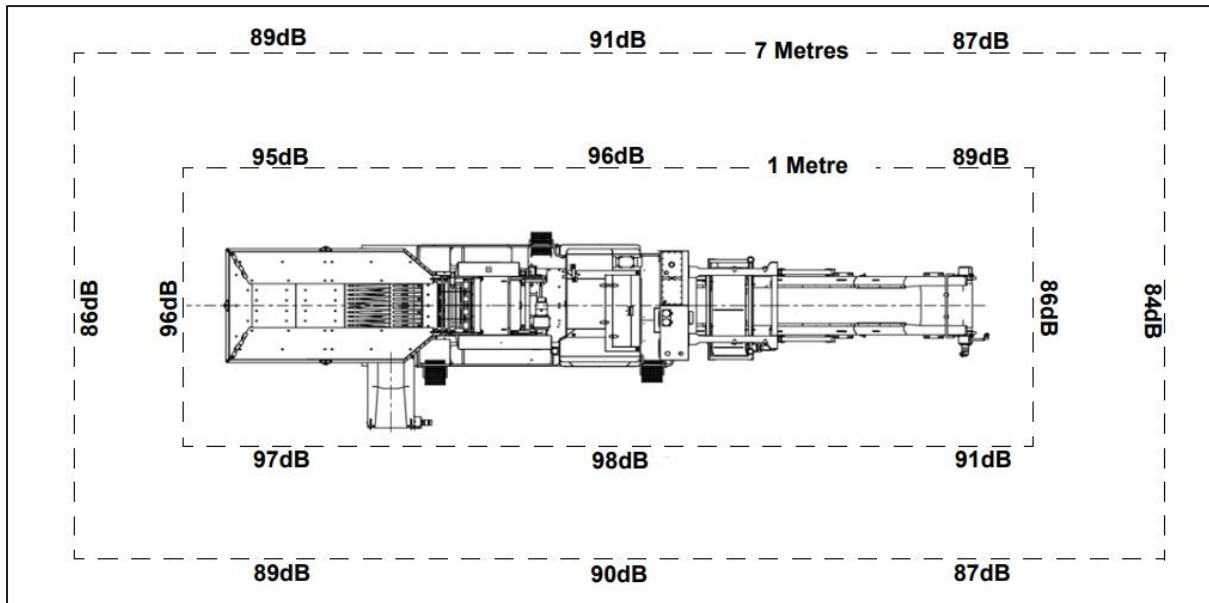
6.4 Predicted Sound Levels including the Crusher

The noise level from the crusher, which was based on manufacturers data, as outlined in Figure 6-2, has been included within the model, the inputs for the crusher are outlined below:



- Point source 1.2m height.
- Line source to represent output conveyor, 1.2m height increasing to 2.5m for end of conveyor.

Figure 6-2: Manufacturer’s Measured Noise Levels for Crusher



The predicted sound level of operations at the Site including the screener and the crusher at the nearest NSRs is shown in Table 6-4 below.

Daytime sound levels have been predicted at 1.5m above local ground level, which is the approximate height of a ground floor window.

Table 6-4: Predicted Specific Sound Levels of the Proposals free field dB

| Location | Period | Predicted Specific Sound Level, $L_{Aeq,T}$ |
|------------------|---------|---|
| Atherfield Drive | Daytime | 56.4 |

A graphical image of the predicted specific sound level during the daytime can be seen in Figure 6-3.



Figure 6-3: Daytime $L_{Aeq,T}$ Specific Sound Level – dB(A)



6.5 Assessment Results with Crusher Operation

6.5.1 Acoustic Character Correction

The character of each noise source and the sound penalty that will be applied in the BS4142:2014+A1:2019 assessment is detailed below:

Crusher Operations

- **Tonality:** It is understood there is no clearly perceptible tone as part of the noise from the crusher; therefore, no penalty is required.
- **Impulsivity:** The crusher does not generate impulsive noise.
- **Intermittency:** The crusher does not exhibit intermittent characteristics when running.
- **Other sound characteristics:** As noise from the crusher is distinctive compared to the rest of the operations at the site and the residual soundscape, an additional 3 dB penalty is required.

In addition, the previous noise assessment for the Site (reference: 403.04370.00019 Sheerness Recycling Facility Noise Assessment_V1), added a +4dB penalty for the tonal content of the crusher; however, from analysing the information provided regarding the new crusher and the fact that there has been no complaints during its operation, this penalty is not considered necessary.

Based on the above, a 3dB penalty is applicable to the predicted specific sound level of 56dB(A).

The penalties described above have been added to the predicted sound levels shown in Table 6-4 to derive the rating levels at each of the nearest noise-sensitive receptors.



The rating levels have then been compared to the derived background sound levels, measured by SLR and assessed accordingly.

The results of the BS4142:2014+A1:2019 assessment is shown in Table 6-5. It must be noted that the rating levels and the representative background sound levels have been rounded to the nearest decibel.

Table 6-5: BS4142 Assessment with Crusher, dB

| Receptor | Assessment | Predicted Specific Sound Level, $L_{Aeq,T}$ | Predicted Rating Level, $L_{Ar,T}$ | Derived Background Sound Level L_{A90} | Difference |
|------------------|------------|---|------------------------------------|--|------------|
| Atherfield Drive | Daytime | 56.0 | 59.0 | 44.0 | +15 |

It can be seen from Table 6-5 that the rating level of general site activities with screener and crusher operations exceed the representative background sound level at Atherfield Drive by 15 dB, which gives an indication of significant adverse impact, depending on the context.

6.5.2 Context Assessment

Although the assessments presented above indicate an adverse impact (general site activities) or a significant adverse impact (screener and crusher operational) when assessing in-line with BS4142, the guidance also states the importance of considering the context of the Site. As outlined in Section 3.1, the permit variation is not proposing any new site activities and all existing operations will remain the same as currently permitted.

SLR previously undertook a noise assessment for the Site in July 2021 for crusher operations (reference: 403.04370.00019 Sheerness Recycling Facility Noise Assessment_V1). The assessment was also undertaken in-line with BS4142 and presented measured sound levels, where the ambient sound level was 54dB(A), the residual sound level was 47dB(A) and the background sound level was 43dB(A). Both the residual and background sound level correlate with the measured levels presented in Table 5-4, which shows noise operations have remained consistent since the 2021 monitoring. Additionally, the previous assessment identified the specific sound level of the crusher was 53dB(A). When this is logarithmically added to site operations with the screener, the overall specific sound level is 56dB(A), which correlates with the noise model findings in Table 6-4. This verifies the reliability of the noise monitoring and modelling undertaken and confirms the consistency of operations at the Site.

With regards to the crusher, it is outlined in Section 3.1 that this is only operational every 4-6 weeks and therefore exceedances associated with this activity are temporary.

Although the background sound level is exceeded, the operational Site in its current capacity is not proposed to be changed and no additional activities or plant is proposed. It is understood that since the new crusher has been in operation, no complaints relating to the Site have been received from the closest NSRs, which is an indication that although the Site is audible, it is not causing an adverse impact at receptors.

Further to the above, a number of mitigation measures are currently in place at the Site which are outlined with the accompanying Noise Management Plan.

It also must be noted that the residual noise climate at the properties on Atherfield Drive was significantly influenced by road, rail and air traffic; consequently, the residents are already subject to noise which is intermittent in nature and distinctive above the background sound climate.

Based on all of the above, once context has been taken into consideration, it can be concluded that the Site in its current and future operation (i.e. following the permit variation), is having and will have a 'low' impact at the nearest NSRs in conjunction with BS4142:2014+A1:2019.

6.6 Proposed Development to the South

It is understood that land to the south of the Site is designated for Development within the Ashford Local Plan 2030. Policy S10 – Gasworks Lane states:



“This site is proposed for residential development (indicative capacity 150 units) and should be of a general scale of between 3-4 storeys in height. A masterplan for the whole site will need to be agreed prior to the granting of planning permission. Schemes should provide a range of different types and sizes of housing accommodation in the form of flats and potentially townhouses. Some limited employment use towards the western end of the site and retail / office uses at ground floor level is also encouraged.”

At this stage, a request for an EIA screening opinion (reference: OTH/2022/2589) for a project of up to 660 apartments and 700sqm of commercial space and permission for remediation of the land (reference: PA/2023/1547) have been submitted. Any scheme brought forward on this land would need to consider operations associated with the Site, as outlined within the National Planning Policy Framework (NPPF) Agent of Change Principle. The *Agent of Change* principle has been defined in recent revisions of the NPPF to explain that new development should not result in unreasonable restrictions being placed on existing and established businesses. The onus for mitigation for any new development has been required to lie with the developer, rather than the business.

Paragraph 187 of the NPPF states:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

The guidance provides that residential development should be suitably mitigated against commercial uses, to support the coexistence of noise-sensitive and noise-generating uses. Therefore, any subsequent planning application on land to the south of the Site would need to effectively mitigate against noise from the Site. As such, this land does not form part of this assessment.



7.0 Statement of Uncertainty

7.1 Uncertainty relating to the Baseline survey and Results

In accordance with BS4142:2014+A1:2019 assessment the uncertainty associated with measured baseline sound levels requires discussion. Baseline sound level measurement uncertainty was minimised using the following steps:

- Measurement location was representative of the nearest noise-sensitive receptors to the Site;
- Measurements were undertaken during suitable weather conditions as described in Table 5-3;
- Measurements were undertaken using a suitable logging period considered to provide representative background sound levels;
- Measurements were fully attended at all times so the ambient and residual noise climate could be witnessed and recorded.
- Measurements were rounded to the nearest one decimal place before the final calculations; and
- Instrumentation was appropriate and in accordance with Section 5 of BS4142:2014+A1:2019.

7.2 Uncertainties relating to Noise Sources and Predicted Noise Levels

7.2.1 Noise Sources

BS 4142:2014+A1:2019 requires consideration of uncertainty associated with the operational levels of the various noise sources utilised in the assessment.

The specific sound level of sources at the Site were calculated from measured noise levels at the closest receptors. The calculations presented in Section 5.6 have been used with uncertainty reduced during measurements described in Section 7.1.

The operational noise levels considered different operational scenarios at the Site with and without the screener in operation, so a robust assessment could be produced. It was also confirmed that the site was operating normally on the day of the survey.

The Cadna/A noise model for general Site activities and the screener was calibrated to the measured specific noise level at the measurement location to -0.1dB.

The operational noise levels for the crusher included within the model were from manufacturers data and used sound pressure levels at 1m and the model was calibrated so it matched these within a margin of error of + 0.7dB.

7.2.2 Predicted Noise Levels

Based on the accuracy of the prediction methodology, i.e., ISO9613-2, the uncertainty of the CadnaA model accuracy, i.e., barrier corrections for buildings, etc., it is considered that the results of the assessment are as accurate as reasonably practicable and considered to be within +/-3dB with downwind propagation and 100% on-time for all the plant.

7.3 Impact of all Uncertainties

The uncertainties regarding the baseline sound survey and subsequent levels have been discussed in Sections 7.1 and 7.2.

With reference to these sections, it is considered that the uncertainties have been kept to a minimum as far as reasonably practicable, it also considered that the impact of the uncertainties would not change the results or associated conclusions of the assessment.



8.0 Conclusion

Sheerness Recycling Ltd has appointed SLR Consulting Ltd. (SLR) to undertake a noise assessment at Sheerness Recycling Facility located at Units 1 & 2 Cobbs Wood Trading Estate, Brunswick Road, Ashford, TN23 1EL (the Site). The noise assessment is required in order to vary the existing environmental permit (EPR/HB3700TW) at the Site.

An assessment has been made with reference to British Standard 4142:2014+A1:2019.

It has been concluded that:

- During the daytime, the rating level of general site activities would be 5dB(A) above the background sound level which gives an indication of significant adverse impact, depending on the context.
- During the daytime, the rating level of general site activities with screener operations would be 12dB(A) above the background sound level which gives an indication of significant adverse impact, depending on the context.
- During the daytime, the rating level of general site activities with screener and crusher operations would be 15dB(A) above the background sound level which gives an indication of significant adverse impact, depending on the context.

The context assessment has shown that the permit variation does not propose any changes to existing activities at the Site and operations would remain in-line with what is currently permitted. Once this has been considered, it is considered the Site is having and would have a 'low' impact at the nearest NSRs in conjunction with BS4142:2014+A1:2019.





Appendix A Glossary of Terminology

Environmental Permit Application

Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

SLR Project No.: 403.065223.00001

20 December 2023

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table 1: Sound Levels Commonly Found in the Environment

| Sound Level | Location |
|-----------------|----------------------------|
| 0dB(A) | Threshold of hearing |
| 20 to 30dB(A) | Quiet bedroom at night |
| 30 to 40dB(A) | Living room during the day |
| 40 to 50dB(A) | Typical office |
| 50 to 60dB(A) | Inside a car |
| 60 to 70dB(A) | Typical high street |
| 70 to 90dB(A) | Inside factory |
| 100 to 110dB(A) | Burglar alarm at 1m away |
| 110 to 130dB(A) | Jet aircraft on take off |
| 140dB(A) | Threshold of Pain |

A.1.1 Acoustic Terminology

| | |
|---------------------|--|
| dB (decibel) | The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2×10^{-5} Pa). |
| dB(A) | A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies. |
| L_{Aeq} | L_{Aeq} is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period. |
| L_{10} & L_{90} | If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L_{10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{90} is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L_{10} index to describe traffic noise. |
| L_{Amax} | L_{Amax} is the maximum A - weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{Aeq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response |





Appendix B Full Survey Results and Data Removed

Environmental Permit Application

Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

SLR Project No.: 403.065223.00001

20 December 2023

Table 2: Survey Results, NSR Monitoring Location

| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|----------------------|
| 06/12/2023 10:21 | 50.3 | 59.5 | 52.5 | 48.2 | |
| 06/12/2023 10:22 | 49.3 | 55.2 | 50.7 | 47.8 | |
| 06/12/2023 10:23 | 49.0 | 55.4 | 50.3 | 47.3 | |
| 06/12/2023 10:24 | 49.6 | 56.7 | 51.3 | 48.0 | |
| 06/12/2023 10:25 | 48.3 | 57.4 | 48.9 | 47.3 | |
| 06/12/2023 10:26 | 49.2 | 56.2 | 50.6 | 47.9 | |
| 06/12/2023 10:27 | 48.9 | 55.9 | 49.8 | 47.9 | |
| 06/12/2023 10:28 | 49.5 | 57.6 | 51.3 | 47.9 | |
| 06/12/2023 10:29 | 49.6 | 58.0 | 50.5 | 48.1 | |
| 06/12/2023 10:30 | 46.5 | 55.1 | 47.8 | 44.9 | |
| 06/12/2023 10:31 | 48.4 | 55.7 | 50.0 | 46.6 | |
| 06/12/2023 10:32 | 48.8 | 53.6 | 49.9 | 47.8 | |
| 06/12/2023 10:33 | 52.2 | 58.8 | 56.6 | 48.6 | Screener switched on |
| 06/12/2023 10:34 | 51.6 | 56.7 | 52.8 | 49.9 | |
| 06/12/2023 10:35 | 52.4 | 59.8 | 54.3 | 50.6 | |
| 06/12/2023 10:36 | 52.9 | 62.3 | 55.6 | 50.4 | |
| 06/12/2023 10:37 | 52.5 | 62.4 | 55.0 | 50.1 | |
| 06/12/2023 10:38 | 51.6 | 57.8 | 53.0 | 50.1 | |
| 06/12/2023 10:39 | 52.6 | 59.7 | 54.4 | 51.0 | |
| 06/12/2023 10:40 | 53.8 | 63.1 | 55.7 | 51.4 | |
| 06/12/2023 10:41 | 55.0 | 63.6 | 57.5 | 52.6 | |
| 06/12/2023 10:42 | 53.9 | 59.1 | 55.6 | 52.2 | |
| 06/12/2023 10:43 | 51.9 | 60.9 | 53.4 | 50.3 | |
| 06/12/2023 10:44 | 56.3 | 68.1 | 59.8 | 51.5 | |
| 06/12/2023 10:45 | 53.9 | 66.2 | 55.3 | 51.2 | |
| 06/12/2023 10:46 | 54.0 | 63.1 | 55.7 | 52.1 | |
| 06/12/2023 10:47 | 54.1 | 62.1 | 56.5 | 51.8 | |
| 06/12/2023 10:48 | 54.1 | 61.8 | 56.0 | 52.0 | |
| 06/12/2023 10:49 | 54.8 | 66.0 | 56.7 | 52.2 | |
| 06/12/2023 10:50 | 53.2 | 58.4 | 54.4 | 51.6 | |
| 06/12/2023 10:51 | 53.8 | 60.1 | 55.4 | 51.7 | |
| 06/12/2023 10:52 | 52.7 | 59.6 | 54.3 | 51.3 | |
| 06/12/2023 10:53 | 51.8 | 57.8 | 53.1 | 50.2 | |
| 06/12/2023 10:54 | 53.1 | 60.5 | 56.0 | 50.2 | |
| 06/12/2023 10:55 | 52.8 | 67.6 | 54.2 | 50.5 | |
| 06/12/2023 10:56 | 52.4 | 64.0 | 53.7 | 49.9 | |
| 06/12/2023 10:57 | 52.1 | 59.2 | 54.0 | 50.0 | |
| 06/12/2023 10:58 | 52.8 | 62.3 | 55.6 | 49.2 | |
| 06/12/2023 10:59 | 50.6 | 59.5 | 52.4 | 48.9 | |



| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|---------|
| 06/12/2023 11:00 | 52.3 | 61.6 | 54.2 | 50.1 | |
| 06/12/2023 11:01 | 52.5 | 63.1 | 54.0 | 50.3 | |
| 06/12/2023 11:02 | 52.5 | 60.9 | 54.4 | 50.0 | |
| 06/12/2023 11:03 | 53.0 | 64.8 | 54.3 | 50.9 | |
| 06/12/2023 11:04 | 51.5 | 55.5 | 52.7 | 50.6 | |
| 06/12/2023 11:05 | 51.0 | 58.8 | 52.2 | 49.7 | |
| 06/12/2023 11:06 | 51.1 | 61.8 | 51.9 | 49.8 | |
| 06/12/2023 11:07 | 52.4 | 61.7 | 53.9 | 50.1 | |
| 06/12/2023 11:08 | 53.3 | 62.4 | 56.1 | 50.3 | |
| 06/12/2023 11:09 | 52.6 | 65.5 | 53.8 | 50.3 | |
| 06/12/2023 11:10 | 52.7 | 58.3 | 53.9 | 51.3 | |
| 06/12/2023 11:11 | 53.1 | 63.5 | 54.7 | 50.8 | |
| 06/12/2023 11:12 | 52.6 | 60.7 | 54.5 | 50.5 | |
| 06/12/2023 11:13 | 52.5 | 61.3 | 53.9 | 50.9 | |
| 06/12/2023 11:14 | 52.9 | 61.9 | 54.2 | 51.3 | |
| 06/12/2023 11:15 | 52.5 | 60.7 | 53.8 | 51.1 | |
| 06/12/2023 11:16 | 52.2 | 60.8 | 54.1 | 50.0 | |
| 06/12/2023 11:17 | 52.1 | 62.4 | 54.4 | 49.7 | |
| 06/12/2023 11:18 | 54.4 | 68.2 | 56.9 | 50.3 | |
| 06/12/2023 11:19 | 56.8 | 64.5 | 58.8 | 53.4 | |
| 06/12/2023 11:20 | 54.6 | 62.7 | 57.2 | 51.8 | |
| 06/12/2023 11:21 | 54.6 | 62.5 | 56.5 | 52.3 | |
| 06/12/2023 11:22 | 52.8 | 61.5 | 53.8 | 51.4 | |
| 06/12/2023 11:23 | 53.1 | 56.9 | 54.2 | 51.8 | |
| 06/12/2023 11:24 | 52.5 | 59.7 | 54.4 | 50.4 | |
| 06/12/2023 11:25 | 52.1 | 56.9 | 53.4 | 50.3 | |
| 06/12/2023 11:26 | 52.8 | 59.0 | 55.0 | 50.1 | |
| 06/12/2023 11:27 | 51.7 | 62.1 | 53.1 | 50.1 | |
| 06/12/2023 11:28 | 55.6 | 69.7 | 57.6 | 50.6 | |
| 06/12/2023 11:29 | 51.8 | 60.5 | 53.7 | 49.8 | |
| 06/12/2023 11:30 | 51.9 | 56.8 | 53.1 | 50.8 | |
| 06/12/2023 11:31 | 52.2 | 57.4 | 53.8 | 50.4 | |
| 06/12/2023 11:32 | 52.7 | 58.8 | 54.3 | 51.2 | |
| 06/12/2023 11:33 | 51.9 | 58.1 | 53.4 | 49.8 | |
| 06/12/2023 11:34 | 52.7 | 61.7 | 54.8 | 50.3 | |
| 06/12/2023 11:35 | 53.0 | 67.6 | 53.7 | 50.7 | |
| 06/12/2023 11:36 | 53.6 | 61.7 | 55.5 | 51.8 | |
| 06/12/2023 11:37 | 55.1 | 62.9 | 57.6 | 52.7 | |
| 06/12/2023 11:38 | 54.7 | 62.3 | 57.2 | 52.3 | |
| 06/12/2023 11:39 | 55.0 | 63.1 | 56.8 | 52.5 | |
| 06/12/2023 11:40 | 55.1 | 63.7 | 56.7 | 52.9 | |
| 06/12/2023 11:41 | 55.1 | 70.3 | 55.7 | 52.6 | |



| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|---------|
| 06/12/2023 11:42 | 58.2 | 65.0 | 62.5 | 53.1 | |
| 06/12/2023 11:43 | 53.8 | 59.9 | 55.6 | 52.2 | |
| 06/12/2023 11:44 | 53.9 | 58.9 | 55.6 | 52.3 | |
| 06/12/2023 11:45 | 53.9 | 64.5 | 55.2 | 51.0 | |
| 06/12/2023 11:46 | 54.6 | 62.4 | 56.4 | 52.7 | |
| 06/12/2023 11:47 | 54.1 | 63.0 | 55.5 | 52.4 | |
| 06/12/2023 11:48 | 56.2 | 63.1 | 59.4 | 53.3 | |
| 06/12/2023 11:49 | 54.6 | 61.5 | 56.2 | 52.4 | |
| 06/12/2023 11:50 | 55.1 | 64.5 | 56.5 | 52.9 | |
| 06/12/2023 11:51 | 53.8 | 62.6 | 55.4 | 51.5 | |
| 06/12/2023 11:52 | 54.2 | 58.8 | 55.6 | 52.5 | |
| 06/12/2023 11:53 | 55.0 | 62.3 | 58.2 | 51.7 | |
| 06/12/2023 11:54 | 54.1 | 58.7 | 55.4 | 52.5 | |
| 06/12/2023 11:55 | 54.1 | 58.4 | 56.3 | 52.2 | |
| 06/12/2023 11:56 | 53.5 | 59.3 | 54.7 | 52.2 | |
| 06/12/2023 11:57 | 54.0 | 61.8 | 55.5 | 51.8 | |
| 06/12/2023 11:58 | 54.8 | 63.9 | 56.0 | 52.3 | |
| 06/12/2023 11:59 | 54.8 | 66.0 | 56.4 | 52.5 | |
| 06/12/2023 12:00 | 54.9 | 62.0 | 56.5 | 53.2 | |
| 06/12/2023 12:01 | 54.7 | 61.3 | 56.1 | 53.0 | |
| 06/12/2023 12:02 | 56.3 | 65.4 | 58.9 | 53.3 | |
| 06/12/2023 12:03 | 53.8 | 61.3 | 55.3 | 51.9 | |
| 06/12/2023 12:04 | 56.1 | 66.3 | 58.8 | 52.5 | |
| 06/12/2023 12:05 | 54.3 | 64.3 | 55.7 | 53.0 | |
| 06/12/2023 12:06 | 54.4 | 60.0 | 57.0 | 52.3 | |
| 06/12/2023 12:07 | 53.2 | 61.3 | 54.8 | 51.4 | |
| 06/12/2023 12:08 | 53.5 | 58.9 | 54.8 | 52.0 | |
| 06/12/2023 12:09 | 54.5 | 63.9 | 55.4 | 52.6 | |
| 06/12/2023 12:10 | 54.5 | 64.0 | 55.3 | 52.6 | |
| 06/12/2023 12:11 | 54.7 | 63.4 | 56.9 | 52.6 | |
| 06/12/2023 12:12 | 54.4 | 63.2 | 56.0 | 52.7 | |
| 06/12/2023 12:13 | 53.4 | 59.7 | 54.6 | 52.1 | |
| 06/12/2023 12:14 | 53.3 | 59.9 | 54.5 | 51.9 | |
| 06/12/2023 12:15 | 53.9 | 61.1 | 54.9 | 52.7 | |
| 06/12/2023 12:16 | 55.5 | 64.4 | 57.5 | 53.1 | |
| 06/12/2023 12:17 | 56.4 | 64.8 | 59.8 | 53.9 | |
| 06/12/2023 12:18 | 55.8 | 64.0 | 57.1 | 54.2 | |
| 06/12/2023 12:19 | 55.4 | 58.1 | 56.6 | 54.0 | |
| 06/12/2023 12:20 | 54.5 | 64.5 | 55.4 | 53.3 | |
| 06/12/2023 12:21 | 55.5 | 64.1 | 57.1 | 53.0 | |
| 06/12/2023 12:22 | 54.4 | 58.5 | 55.4 | 53.5 | |
| 06/12/2023 12:23 | 54.2 | 62.1 | 55.3 | 52.9 | |



| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|---|
| 06/12/2023 12:24 | 55.0 | 62.3 | 57.5 | 52.6 | |
| 06/12/2023 12:53 | 51.3 | 65.6 | 52.6 | 45.2 | Screener switched off |
| 06/12/2023 12:54 | 50.7 | 62.0 | 54.6 | 43.6 | |
| 06/12/2023 12:55 | 48.5 | 61.9 | 49.6 | 44.6 | |
| 06/12/2023 12:56 | 49.5 | 57.6 | 53.1 | 45.0 | |
| 06/12/2023 12:57 | 45.8 | 48.6 | 47.1 | 44.2 | |
| 06/12/2023 12:58 | 46.0 | 50.6 | 47.6 | 44.5 | |
| 06/12/2023 12:59 | 44.4 | 49.7 | 45.5 | 43.3 | |
| 06/12/2023 13:00 | 45.3 | 52.0 | 46.7 | 43.8 | Site break starts |
| 06/12/2023 13:01 | 46.9 | 55.2 | 49.1 | 43.1 | |
| 06/12/2023 13:02 | 52.9 | 71.3 | 51.6 | 44.0 | Site loading - data removed from baseline calculation |
| 06/12/2023 13:03 | 48.7 | 56.8 | 51.3 | 44.8 | |
| 06/12/2023 13:04 | 48.2 | 57.8 | 51.1 | 44.5 | |
| 06/12/2023 13:05 | 45.5 | 51.7 | 47.6 | 42.9 | |
| 06/12/2023 13:06 | 46.4 | 51.2 | 47.9 | 44.7 | |
| 06/12/2023 13:07 | 44.5 | 49.4 | 45.7 | 43.2 | |
| 06/12/2023 13:08 | 44.4 | 49.8 | 46.1 | 42.6 | |
| 06/12/2023 13:09 | 44.1 | 47.6 | 45.5 | 42.8 | |
| 06/12/2023 13:10 | 47.5 | 55.5 | 49.6 | 45.6 | |
| 06/12/2023 13:11 | 46.0 | 58.3 | 47.3 | 43.9 | |
| 06/12/2023 13:12 | 46.8 | 53.5 | 48.8 | 43.6 | |
| 06/12/2023 13:13 | 52.6 | 74.4 | 47.4 | 43.6 | Site loading - data removed from baseline calculation |
| 06/12/2023 13:14 | 47.1 | 54.7 | 49.3 | 44.7 | |
| 06/12/2023 13:15 | 49.0 | 56.2 | 51.9 | 43.5 | |
| 06/12/2023 13:16 | 47.4 | 59.6 | 48.6 | 45.1 | |
| 06/12/2023 13:17 | 47.1 | 57.6 | 48.6 | 44.2 | |
| 06/12/2023 13:18 | 53.7 | 70.7 | 52.8 | 46.2 | Site loading - data removed from baseline calculation |
| 06/12/2023 13:19 | 52.0 | 63.8 | 52.9 | 49.3 | |
| 06/12/2023 13:20 | 48.4 | 53.8 | 50.5 | 46.2 | |
| 06/12/2023 13:21 | 50.1 | 56.0 | 52.6 | 45.7 | |
| 06/12/2023 13:22 | 47.0 | 54.2 | 49.2 | 44.2 | |
| 06/12/2023 13:23 | 47.9 | 57.5 | 50.5 | 45.2 | |
| 06/12/2023 13:24 | 46.4 | 56.8 | 48.8 | 43.9 | |
| 06/12/2023 13:25 | 48.7 | 58.6 | 51.6 | 44.8 | |
| 06/12/2023 13:26 | 50.0 | 61.0 | 55.5 | 44.1 | |



| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|---|
| 06/12/2023 13:27 | 44.7 | 48.9 | 46.0 | 42.6 | |
| 06/12/2023 13:28 | 45.8 | 51.5 | 47.0 | 43.8 | |
| 06/12/2023 13:29 | 45.1 | 52.9 | 47.3 | 43.2 | |
| 06/12/2023 13:30 | 45.4 | 49.3 | 46.9 | 43.9 | |
| 06/12/2023 13:31 | 47.5 | 56.3 | 51.0 | 44.2 | |
| | | | | | |
| 06/12/2023 13:52 | 86.2 | 91.9 | 89.2 | 82.3 | On-site screener measurements at 2.1m |
| 06/12/2023 13:53 | 88.3 | 91.8 | 89.3 | 87.1 | |
| 06/12/2023 13:54 | 87.5 | 91.2 | 88.6 | 86.3 | |
| 06/12/2023 13:55 | 88.2 | 92.8 | 89.5 | 86.3 | |
| 06/12/2023 13:56 | 89.5 | 98.9 | 90.7 | 87.9 | |
| 06/12/2023 13:57 | 88.6 | 91.5 | 89.9 | 86.7 | |
| 06/12/2023 13:58 | 89.5 | 92.5 | 90.5 | 87.9 | |
| 06/12/2023 13:59 | 88.9 | 92.8 | 90.0 | 87.5 | |
| 06/12/2023 14:00 | 87.7 | 92.0 | 89.1 | 86.0 | |
| 06/12/2023 14:01 | 89.5 | 92.6 | 90.5 | 88.1 | |
| 06/12/2023 14:02 | 89.9 | 92.4 | 90.7 | 89.3 | |
| | | | | | |
| 06/12/2023 14:03 | 85.4 | 90.5 | 87.0 | 83.5 | On-site screener measurements at 3.4m |
| 06/12/2023 14:04 | 84.9 | 88.9 | 86.1 | 83.6 | |
| 06/12/2023 14:05 | 85.3 | 90.0 | 86.2 | 84.2 | |
| 06/12/2023 14:06 | 85.4 | 89.3 | 86.2 | 84.5 | |
| 06/12/2023 14:07 | 85.5 | 89.9 | 86.4 | 84.7 | |
| 06/12/2023 14:08 | 85.1 | 87.9 | 85.9 | 84.3 | |
| 06/12/2023 14:09 | 86.5 | 94.9 | 87.5 | 84.8 | |
| 06/12/2023 14:10 | 87.2 | 93.3 | 89.6 | 84.7 | |
| 06/12/2023 14:11 | 82.7 | 87.4 | 85.3 | 73.7 | |
| 06/12/2023 14:12 | 65.7 | 74.3 | 68.6 | 61.6 | Noise meter stopped, removed from dataset |
| | | | | | |
| 06/12/2023 14:33 | 62.2 | 68.1 | 65.5 | 53.7 | Noise meter set up, removed from dataset |
| 06/12/2023 14:34 | 49.7 | 59.2 | 52.5 | 47.0 | Site active but no screener |
| 06/12/2023 14:35 | 51.2 | 60.5 | 54.3 | 47.9 | |
| 06/12/2023 14:36 | 57.2 | 62.3 | 59.6 | 51.4 | |
| 06/12/2023 14:37 | 52.1 | 60.4 | 54.2 | 49.1 | |
| 06/12/2023 14:38 | 51.7 | 61.0 | 56.1 | 46.0 | |
| 06/12/2023 14:39 | 50.3 | 58.6 | 53.5 | 46.3 | |
| 06/12/2023 14:40 | 49.6 | 60.8 | 52.1 | 46.1 | |



| Date and Time | L _{Aeq,1min} | L _{Amax} | L _{A10} | L _{A90} | Comment |
|------------------|-----------------------|-------------------|------------------|------------------|---------|
| 06/12/2023 14:41 | 51.1 | 61.2 | 53.1 | 48.7 | |
| 06/12/2023 14:42 | 50.2 | 59.1 | 51.5 | 48.1 | |
| 06/12/2023 14:43 | 52.1 | 61.9 | 53.4 | 50.1 | |
| 06/12/2023 14:44 | 52.1 | 62.0 | 56.6 | 46.7 | |
| 06/12/2023 14:45 | 48.3 | 60.4 | 49.6 | 45.1 | |
| 06/12/2023 14:46 | 50.0 | 58.8 | 52.7 | 46.8 | |
| 06/12/2023 14:47 | 51.5 | 64.1 | 54.8 | 46.9 | |
| 06/12/2023 14:48 | 47.3 | 62.5 | 48.1 | 45.1 | |
| 06/12/2023 14:49 | 47.3 | 58.4 | 49.0 | 45.3 | |
| 06/12/2023 14:50 | 47.8 | 52.8 | 49.3 | 46.1 | |
| 06/12/2023 14:51 | 47.0 | 52.6 | 48.8 | 45.5 | |
| 06/12/2023 14:52 | 50.6 | 57.5 | 53.7 | 47.5 | |
| 06/12/2023 14:53 | 52.1 | 61.3 | 54.7 | 48.0 | |
| 06/12/2023 14:54 | 52.2 | 56.5 | 55.4 | 46.9 | |
| 06/12/2023 14:55 | 50.6 | 61.2 | 54.0 | 45.6 | |
| 06/12/2023 14:56 | 50.7 | 63.3 | 55.5 | 45.8 | |
| 06/12/2023 14:57 | 50.6 | 60.0 | 53.4 | 47.3 | |
| 06/12/2023 14:58 | 47.6 | 55.6 | 49.5 | 45.2 | |
| 06/12/2023 14:59 | 51.1 | 62.1 | 54.4 | 47.3 | |
| 06/12/2023 15:00 | 51.5 | 61.0 | 53.8 | 48.2 | |
| 06/12/2023 15:01 | 51.9 | 58.5 | 55.4 | 47.1 | |





Appendix C Monitoring Location Photos

Environmental Permit Application

Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

SLR Project No.: 403.065223.00001

20 December 2023

Figure C-1: Monitoring Location – East Direction



Figure C-2: Monitoring Location – Southwest Direction



Figure C-3: Monitoring Location – North Direction





Appendix D Calibration Certificates

Environmental Permit Application


Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

SLR Project No.: 403.065223.00001

20 December 2023

Figure D-1: Rion NL-52 Sound Level Meter Calibration Certificate



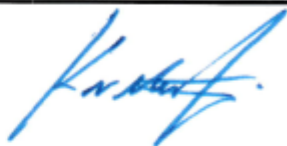
CERTIFICATE OF CALIBRATION

Date of Issue: 02 March 2023 **Certificate Number: TCRT23/1199**

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages

Approved Signatory



K. Mistry

| | | | |
|-----------------------------------|---|---------------------------------------|--------------|
| Customer | SLR Consulting Limited 15 Middle Pavement Nottingham NG1 7DX | | |
| Order No. | 2814-403 | | |
| Description | Sound Level Meter / Pre-amp / Microphone / Associated Calibrator | | |
| Identification | <i>Manufacturer</i> | <i>Instrument</i> | <i>Type</i> |
| | Rion | Sound Level Meter | NL-52 |
| | Rion | Firmware | 2.1 |
| | Rion | Pre Amplifier | NH-25 |
| | Rion | Microphone | UC-59 |
| | Rion | Calibrator | NC-74 |
| | | Calibrator adaptor type if applicable | NC-74-002 |
| Performance Class | 1 | | |
| Test Procedure | TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i> | | |
| Type Approved to IEC 61672-1:2013 | Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i> | | |
| Date Received | 01 March 2023 | ANV Job No. | TRAC23/03118 |
| Date Calibrated | 02 March 2023 | | |

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

| | | | |
|----------------------|------------------|------------------------|-------------------|
| Previous Certificate | <i>Dated</i> | <i>Certificate No.</i> | <i>Laboratory</i> |
| | 01 November 2021 | TCRT21/1764 | 0653 |

This certificate provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



CERTIFICATE OF CALIBRATION



Certificate Number

TCRT23/1199

Page 2 of 2 Pages

| | | | |
|--|------------------|-------------------------|---|
| Sound Level Meter Instruction manual and data used to adjust the sound levels indicated. | | | |
| SLM instruction manual title NL-52/NL-42 Description for IEC 61672-1 | | | |
| SLM instruction manual ref / issue | | No. 56034 21-03 | Source Rion |
| Date provided or internet download date | | 19 March 2021 | |
| | Case Corrections | Wind Shield Corrections | Mic Pressure to Free Field Corrections |
| Uncertainties provided | Yes | Yes | Yes |
| Total expanded uncertainties within the requirements of IEC 61672-1:2013 | | | YES |
| Specified or equivalent Calibrator | | Specified | |
| Customer or Lab Calibrator | | Lab Calibrator | |
| Calibrator adaptor type if applicable | | NC-74-002 | |
| Calibrator cal. date | | 16 February 2023 | |
| Calibrator cert. number | | UCRT23/1227 | |
| Calibrator cal cert issued by Lab | | 0653 | |
| Calibrator SPL @ STP | | 94.04 | dB Calibration reference sound pressure level |
| Calibrator frequency | | 1001.97 | Hz Calibration check frequency |
| Reference level range | | Single dB | |
| Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15 | | | |
| Note - The Extension Cable was used between the SLM and the pre-amp for this calibration. | | | |
| Environmental conditions during tests | | | |
| | Start | End | |
| Temperature | 23.21 | 22.86 | ± 0.30 °C |
| Humidity | 35.5 | 37.8 | ± 3.00 %RH |
| Ambient Pressure | 101.54 | 101.55 | ± 0.03 kPa |
| Indication at the Calibration Check Frequency | | | |
| Initial indicated level | 94.0 | dB | Adjusted indicated level 94.0 dB |
| Uncertainty of calibrator used for Indication at the Calibration Check Frequency ± | | | 0.10 dB |
| Self Generated Noise | | | |
| Microphone installed - | Less Than | 17.0 | dB A Weighting |
| Microphone replaced with electrical input device - UR = Under Range indicated | | | |
| Weighting | A | C | Z |
| | 11.2 dB UR | 14.9 dB UR | 21.2 dB UR |

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with the Guide to the Expression of Uncertainty in Measurement published by ISO.

Additional Comments

Prior to calibration the instrument's main PCB was replaced and the meter was realigned.

..... END
Calibrated by: PB R 1



Figure D-2: Rion NC-75 Calibrator Calibration Certificate



**CERTIFICATE
OF
CALIBRATION**




0653

Date of Issue: 24 February 2023

Certificate Number: UCRT23/1261

Calibrated at & Certificate issued by:

ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk

| |
|---|
| Page 1 of 2 Pages |
| Approved Signatory |
|  |
| K. Mistry |

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Customer SLR Consulting Limited
2nd and 3rd Floors
15 Middle Pavement
Nottingham
NG1 7DX

Order No. 002578-403

Test Procedure Procedure TP 14 Calibration of Sound Calibrators (60942:2017)

Description Acoustic Calibrator

| Identification | Manufacturer | Instrument | Model | Serial No. |
|----------------------------------|--------------|-------------|-------|------------|
| | Rion | Calibrator | NC-75 | 34134634 |
| Public evidence of Type Approval | Yes | Approved by | PTB | |

The calibrator has been tested as specified in Annex B of IEC 60942:2017. As public evidence was available, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2017, the sound calibrator tested is considered to conform to all the class 1 requirements of IEC 60942:2017.

ANV Job No. UKAS23/02130

Date Received 24 February 2023

Date Calibrated 24 February 2023

Previous Certificate *Dated* Initial Calibration
Certificate No.
Laboratory

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



| | |
|---|--|
| CERTIFICATE OF CALIBRATION | Certificate Number UCRT23/1261 |
| | Page 2 of 2 Pages |
| UKAS Accredited Calibration Laboratory No. 0653 | |

Measurements

The sound pressure level generated by the calibrator (averaged over a 20 to 25 second period) in its WS2 configuration was measured five times (rotating the calibrator on the microphone each time) by the Insert Voltage Method using a microphone as detailed below. The mean of the results obtained is shown below.

The frequency of the sound from the calibrator was measured five times over a 20 to 25 second period and the average frequency calculated.

The total distortion + noise of the sound from the calibrator was measured, using a rejection filter distortion factor meter, five times over a 20 to 25 second period and the average distortion + noise calculated.

| | | | |
|--|---|---------------------|---------------------------|
| Test Microphone | <i>Manufacturer</i> Brüel & Kjær | <i>Type</i> 4134 | |
| <u>Nominal</u> <u>Setting dB / Hz</u> | <u>Mean Level</u> <u>dB rel 20 µPa</u> | <u>Frequency</u> | <u>Distortion + Noise</u> |
| 94 / 1000 | 94.01 ± 0.10 | 1000.00 ± 0.12Hz | (0.10 ± 0.02) % |

| | | | |
|--|--------------|------------|-------------|
| <u>Environmental conditions during tests</u> | <u>Start</u> | <u>End</u> | |
| Temperature | 24.72 | 24.01 | ± 0.30 °C |
| Humidity | 38.8 | 38.4 | ± 3.0 %RH |
| Ambient Pressure | 100.186 | 100.186 | ± 0.030 kPa |

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

The uncertainties refer to the measured values only with no account being taken of the ability of the instrument to maintain its calibration.

A small correction factor may need to be applied to the sound pressure level quoted above if the device is used to calibrate a sound level meter which is fitted with a free-field response microphone. See manufacturers handbook for details.

Note: Calibrator adjusted prior to calibration? NO

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

Calibrated by: B. Bogdan R 2
..... END





Appendix E Relevant Staff Credentials

Environmental Permit Application

Sheerness Recycling Facility, Ashford

Sheerness Recycling Ltd

SLR Project No.: 403.065223.00001

20 December 2023

Table E-1: Relevant Staff Credentials

| Staff | Qualifications | Experience |
|-----------------|---------------------|--|
| Thomas Ross | BSc (Hons) | Thomas is an environmental consultant with over 4 years' experience in environmental monitoring. Thomas has undertaken numerous environmental and occupational noise surveys across the UK in construction, energy, waste, mining and quarrying industries. |
| Emma Aspinall | MGeol (Hons), AMIOA | Emma is a senior acoustic consultant with over 6 years' consultancy experience. Emma has experience of undertaking noise assessments across a range of sectors including residential, industrial and leisure. |
| Benedict Sarton | BSc (Hons), MIOA | Benedict is the Technical Director within the acoustics team with over 18-years industry experience. Benedict has project managed noise and vibration impact surveys, assessments and full EIA's for industrial, mineral, waste, renewable energy and residential developments throughout the UK, Europe and Africa. |



