Compliance Noise Monitoring

Byron Resource Recovery Centre
The Manse Road
Myocum

HEALTH SCIENCE ENVIROMENTAL EDUCATION
ENVIRONMENTAL AUDITOR

Compliance Noise Monitoring

Byron Resource Recovery Centre
The Manse Road
Myocum

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1. Introduction

1.1 Purpose

Tim Fitzroy & Associates (TFA) were engaged by Byron Shire Council (BSC) to undertake an operational noise assessment at the Byron Resource Recovery Centre (BRRC) (former Myocum Landfill), The Manse Road Myocum. Key components of the noise assessment were to:

- undertake compliance noise monitoring during:
  - Operation mulching of stockpiled green waste at the BRRC; and
  - Routine operations at Myocum Quarry;
- provide an updated noise assessment of site operations.

The focus of compliance noise monitoring undertaken on the 10 July 2023 was the Peterson 271OD green waste grinder and associated excavator.

1.2 Site Description and Surrounds

The subject site is described as Lot 1 DP 1052900 The Manse Road, Myocum. The BRCC is established between two remnant ridgelines. The BRCC is located at Myocum around 6km south of Mullumbimby and 9km southwest of Brunswick Heads. The Myocum quarry is located immediately to the west of the site on Lot 1 DP591441.

The Resource Recovery Area is located on the crest of a hill. The surrounding area is undulating.

A number of residences are within close proximity of the BRCC. Residences R1 to R5 (inclusive) are identified in **Illustration 2.1**. Residences R1, R3 and R4 are owned by BSC, while the other residences are privately owned. Residences R1 and R5 are two storey dwelling houses while the other dwellings are single storey.

A BSC operated quarry is located to the immediate west of the BRCC, while Leela Quarry (privately operated) is located to the north (see **Illustration 2.1**). Vegetation provides a visual screen from the BRCC to residences R1, R2, R3 and R5.

2. Resource Recovery Operations

2.1 Typical Operations

Byron Resource Recovery operations are carried out in the transfer station and public drop off areas. The Byron Resource Recovery Centre operating hours are 7:30 am to 4:00pm (Monday to Friday) and 8:30am to 11:30am (Saturday and Sunday). Landfilling operations ceased in late September 2013. Additional infrastructure has been installed at the existing transfer station for the temporary storage and bulk transfer of waste to South east Queensland. A new Green waste and Metals Recycling Area has been established on a level area between the redundant northern and southern landfill cells.

Council operates a single body, dual axle, hook lift truck for the purpose of transporting water and roll on roll off bins (RORO). The water tank is used for dust suppression and firefighting while the RORO bins (e.g. 10m) are used for the transfer of waste and recycling. Council operates a Backhoe (Cat 432D) for the management of green waste, metals recycling and putrescible waste.

An excavator is used to load the putrescible waste at the transfer station, load the metal recycling and green waste and construction and demolition waste into a RORO bin (e.g. 60m).

The Litter bins (L-bins) in the public drop-off area are emptied using a loader. The loader is also used for loading the organics in the pasteurisation process. Waste is deposited into L-bins at the public drop-off area.

A variety of vehicles including private vehicles, mini skips, council rubbish trucks (up to 8 per day), deposit waste either at the transfer station or the resource recovery area. Semi-trailers operate in the Resource Recovery area with RORO bins. Walking floor trucks operate in the transfer station. Average movements are four a day, Monday to Friday.

To the northwest face are the weighbridge, waste transfer station and second-hand shop. This area is not in a direct line of site to residences R1, R2, R4 and R5.

2.2 Intermittent Operations

Intermittent noise generating activities include grinding of green waste (every 6 to 8 weeks) and loading out of metals recycling (every 2 weeks).

The following corrective actions are employed by BSC to reduce noise impacts from intermittent noise generating activities:

- Green waste and metal processing do not occur on weekends and public holidays;
- Commencement of these operational activities shall take place on weekdays only, commencing no earlier than 9:00 a.m. and ceasing no later than 4:00 p.m.;

- Dates for green waste processing will be scheduled at least two weeks in advance of commencement, and potentially affected resident neighbours will be notified by a letter box drop.

2.3 Licence Conditions

The NSW Environment Protection Authority (EPA) has issued licence conditions for the Myocum Landfill and the Byron Resource Recovery Centre. Noise Monitoring locations are to be located within 30m of Residence R1 to R5 (inclusive) are identified in **Table 2.1**.

Condition L3.1 of EPL 13127 states

Noise from the premises must not exceed an LAeq(15 minute) noise emission criterion of 43 dB(A) at monitoring points 8 (N1), 9 (N2), 11 (N4) and 12 (N5) and an LAeq(15 minute) noise emission criterion of 39 dB(A) at monitoring point 10 (N3) during operations at the premises.

L3.2 of EPL 13127 states that:

To determine compliance with condition L3.1 noise must be measured at, or computed for, the most affected point on or within the boundary of the residential property (N1, N2, N3, N4, N5), or if this is more than 30m from the residence, at the most affected point within 30m of the residence. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Noise Policy for Industry (NSW EPA 2017)".

L4.1 of EPL 6057 states that noise from the premises must not exceed:
a) An LAeq(15 minute) noise emission criterion of 43 dB(A) at monitoring points 20 (N1), 21 (N2), 27 (N4) and 28 (N5) and an LAeq(15 minute) noise emission criterion of 39 dB(A) at monitoring point 22 (N3) during operations at the landfill. Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.

L4.2 To determine compliance with condition L4.1 noise must be measured at, or computed for, the most affected point on or within the boundary of the residential property (N1, N2, N3, N4, N5), or if this is more than 30m from the residence, at the most affected point within 30m of the residence. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Environmental Noise Management - NSW Industrial Noise Policy (January 2000)".

Other Monitoring and Recording Conditions:

Condition M6 of EPL 13127:

M6 of EPL 13127 states:

- M6.1 The licensee must monitor noise at noise monitoring points 8, 9, 10, 11 and 12 during high noise impact activities such as the processing of green waste, during the activities, using a noise meter and dB(A) as the unit of measure.
- M6.2 Condition M6.1 only applies to noise monitoring points N1, N3 and N4 if the residences to which the monitoring points relate are sold, leased or otherwise lawfully occupied, and in any case of lease or occupation, for the full term of the lease or occupation.

Variation to EPL 13127 , dated 5 May 20-23 states that:
The noise limits identified in L3.1 do not apply at residential properties (N1, N2, N3, N4, N5) subject to a current written noise level agreement between the licensee and the property occupier. A Noise Agreement has been signed between BSC and the residents at N1, N2, N3 ,N4 and N5 to allow a maximum level of 70dB(A) Leq (15mintes) during grinding operations (see **Appendix A**).

L4.3 od EPL 6057 states that the noise limits identified in L4.1 do not apply at residential properties (N1, N2, N3, N4, N5) where conditions of a current noise level agreement between the licensee of EPL13127 and the property occupier are met.

Table 2.1 Noise Monitoring Locations in EPL 30m from dwellings

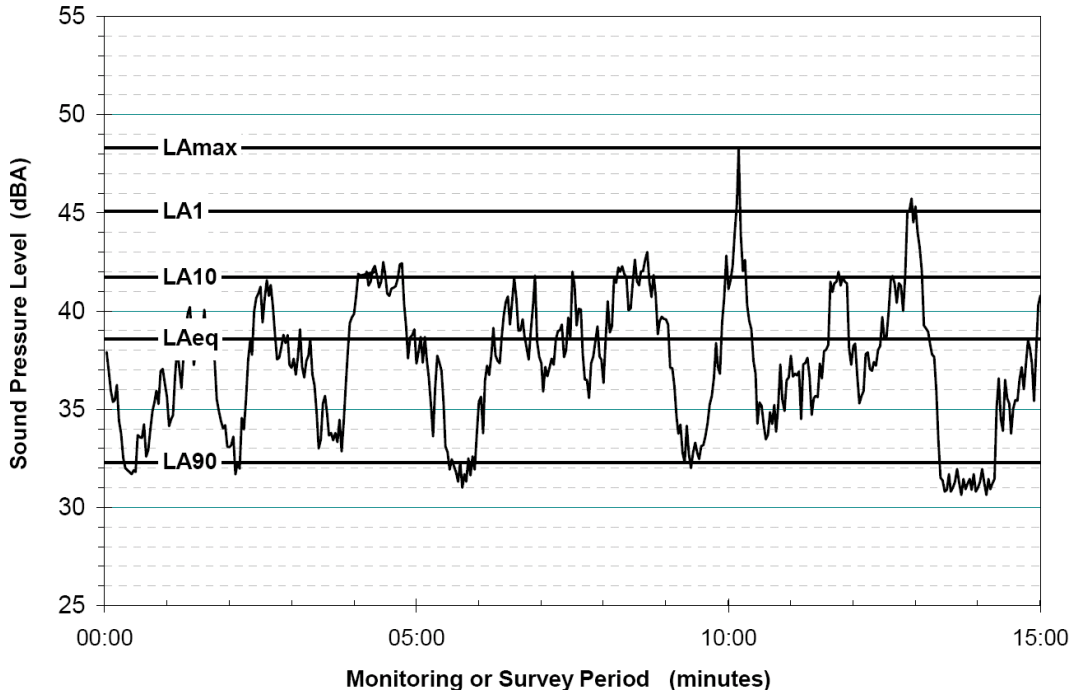
Location	Description	Distance from BRRC (m)
N1	Council owned house, 127 Manse Rd, southeast of BRRC	200
N2	Private House, 110 Manse Road, south of BRRC	300
N3	Council owned house, 1 Dingo lane, west of quarry and BRRC	700
N4	Council owned house, 147 The Manse Road, east of BRRC	200
N5	Private house, 149 Manse Road, south east of BRRC	250

This report refers to a number of different acoustical terms. Particularly the L_{Aeq}, L_{Amax}, L_{A10} and L_{A90} descriptors. Each descriptor is briefly explained below.

- The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time; varying sound over a defined measurement period.
- The L_{Amax} noise level is the maximum A-weighted noise level.
- The L_{A10} is the A-weighted sound pressure level exceeded 10% of a given measurement period and is utilised normally to characterise typical maximum noise levels.
- The L_{A90} noise level is the A-weighted sound pressure level exceeded 90% of a given measurement period and is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the “background” level.

Sound power level is the **acoustic energy** emitted by a source which produces a **sound** pressure **level** at some distance. While the **sound power level** of a source is fixed, the **sound** pressure **level** depends upon the distance from the source and the **acoustic** characteristics of the area in which it is located.

Figure 2.1 Graphical Display of Typical Noise Indices



The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy at a given time; varying sound over a defined measurement period.

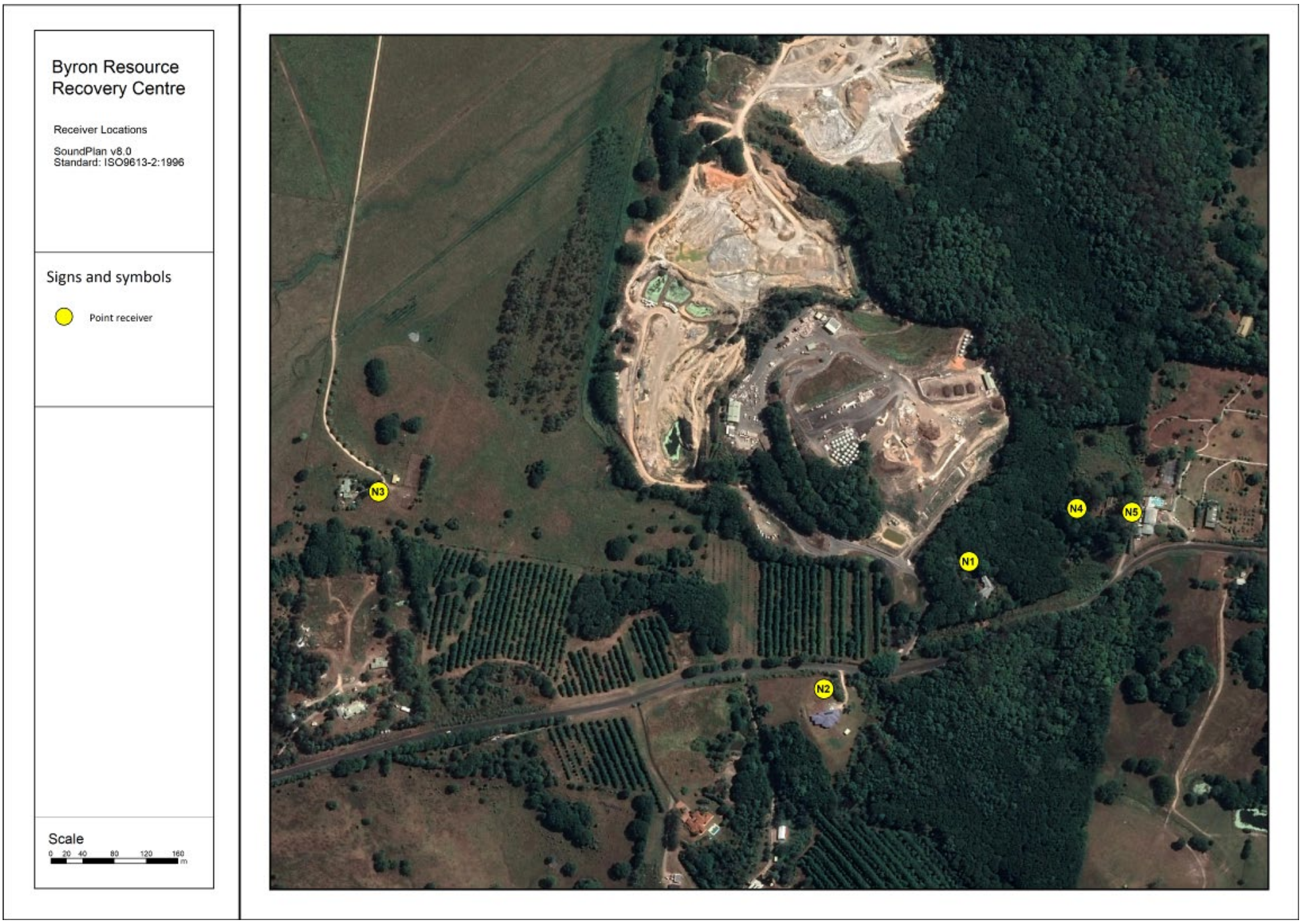
In accordance with the NSW Industrial Noise Policy (INP) (NSW EPA 2000), the BRRC is classified as an industrial/commercial noise source. The assessment procedure for an industrial noise source should comprise of:

- Controlling intrusive noise impacts in the short term for surrounding residences; and
- Maintaining noise level amenity for particular land uses for residences and other land uses.

In assessing the noise impact of the BRRC on the surrounding land use, both components must be considered for residential receivers, but, in most cases, only one will become the limiting factor forming the project-specific noise level. The intrusiveness of an industrial noise source may be generally considered to be acceptable if the equivalent continuous A-weighted level of noise from the source, measured over a 15-minute period, does not exceed the background noise level by more than 5dB. Therefore, the limiting criteria for the control of intrusive noise impacts is if the $L_{Aeq,15\text{-}minute}$ descriptor is < RBL + 5 dB.

In accordance with the INP, the project specific noise criteria are the lesser of either the amenity or intrusiveness criterion. The work to derive the PSNL was carried out previously, endorsed by the EPA and has resulted in the licence conditions imposed in EPL 13127 and EPL 6057.

Illustration 2.1 Prescribed Noise Monitoring Locations and Dwelling Sites



3. Noise Assessment

3.1 Acoustical Equipment

Tim Fitzroy & Associates utilised the following equipment in this Noise Impact Assessment:

- A Type 1, 1/3 Octave Band Larson Davis Noise Meter with sound recording and event trigger features.

Calibration of the noise monitoring equipment was undertaken prior to use. To ensure no significant tonal drift occurred over the monitoring period, the calibration was checked before and after each measurement period.

3.2 Monitoring Methodology

Noise monitoring was undertaken during typical resource recovery operations.

Typical operations include the operation of the excavator and unloading activities at the transfer station and resource recovery area plus vehicular movements.

Ambient sound pressure levels were measured generally in accordance with Australian Standard AS1055.1:1997 - *'Acoustics-Description and measurement of environmental noise - Part 1: General procedures'*. The monitoring locations reflect as much as possible the requirement for monitoring at the most affected point within 30m of each dwelling.

Noise monitoring of green waste mulching operations was carried out on Monday 10 July 2023 between 9am and 10:30am.

15 minute samples were taken at each of the monitoring locations using a Larson Davis, type 1 Sound Level Meter. The Fast and A weighting settings were used. The microphone at each location was 1.35m above ground level.

The weather during the noise monitoring was fine. Winds conditions ranged from calm light northerly winds.

Photographs of the Grinder in operation are provided in **Appendix A**.

3.3 Noise Monitoring Results

The noise monitoring results (nmr) are provided in Table 3.1.

During green waste mulching operations, the main sources of noise from the BRCC was the mulching operation and excavator tracking and feeding the mulcher in the resource recovery area and in the transfer area. Other sources of noise included vehicle entering and leaving the BRRC and vehicle movements on the site and along The Manse Road. Environmental noise including crows was significant in some locations. During monitoring wind speed varied up to 5km/hr from the north.

In addition, there was audible noise emanating from the Myocum Quarry during the monitoring period.

Table 3.1 Monitoring Results at N1, N2, N3, N4 and N5 during Green waste Mulching

Date	Location	Time	Measured $L_{Aeq(15min)}$ dB(A)	Estimated BRCC Contribution	Comments	Licence Condition dB(A)
10/07/2023	N1	8:58am-9:13am	59.3	59	Main noise the mulcher coupled with excavator operation in the Resource Recovery Area. Secondary noises included bird calls.	43
10/07/2023	N2	10:18am—10:32am	51.1	50	Main noise. The mulcher coupled with excavator and vehicle operation in the Resource Recovery Area can be heard in the distance Secondary noises vehicles travelling along the Manse Road and intermittent bird calls.	43

10/07/2023	N3	10:47am-11:02am	39	<35	Primary noise related to natural sounds including bird calls. Resource Recovery activities just audible in the distance	39
28/02/2023	N4	9:33am-9:48am	72.2	60	Main noise green waste mulcher. Elevated and consistent dog barking in rear yard elevated overall noise impacts Background noise bird calls	43
28/02/2023	N5	9:58am-10:13am	48.3	46	Main noise green waste mulcher. Background noise bird calls	43

Note: Full noise monitoring results are located in **Appendix B**.

3.4 Green Waste Mulching

At location N1, the measured LAeq was 59.3 dB(A). The dominant noise was the mulcher coupled with excavator operation in the Resource Recovery Area. Secondary noises included bird calls. The estimated contribution from Resource Recovery Operations was 59 dB (A). This is above the noise limit of 43dB (A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation. The residence, R1 is owned by BSC, the operator of the Byron Resource Recovery Centre.

At location N2, the measured LAeq was 51.1dB (A) Leq with the dominant noise being the green waste mulcher and excavator operation. Intermittent vehicles noise coupled with bird calls contributed to the noise recorded. The green waste mulcher and excavator operation could be heard in the distance. Noise estimated from Resource Recovery operations account for 50 dB (A) Leq. This is above the noise limit of 43dB (A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation. The residence, R2 is privately owned.

At Location N3, the measured LAeq was 39dB (A) with the dominant noise being natural noises (bird calls). The green waste mulcher and excavator operation were barely audible. Noise estimated from Resource Recovery operations account for less than 35dB (A). This is below the noise limit of 39dB (A) and the noise agreement level of 70dBA) Leq during daytime (9am to 3pm) grinding operation. The residence, R3 is owned by BSC, the operator of Byron Resource Recovery Centre.

At location N4, the measured LAeq was 72.2dB (A) with the dominant noise being dogs barking and the green waste mulcher and excavator operation. Noise estimated from Resource Recovery operations account for 60dB (A). This is above the noise limit of 43dB (A) however below the noise agreement level of 70dBA) Leq during daytime (9am to 3pm) grinding operation. The residence, R4 is owned by BSC, the operator of Byron Resource Recovery Centre.

At location N5, the measured LAeq was 48.3dB (A). During the monitoring period the primary noise was the mulching operation at BRRC, secondary noises included bird calls. Noise estimated from Resource Recovery operations account for 46 dB (A). This is above the noise limit of 43dB (A) however below the noise agreement level of 70dBA) Leq during daytime (9am to 3pm) grinding operation . The residence, R5 is privately owned.

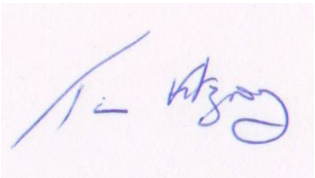
Note: Full noise monitoring results are located in **Appendix B**.

4. Conclusions & Recommendations

It is concluded from the noise monitoring carried at sensitive receivers during green waste mulching on 10 July 2023 that at:

- Location N1:
  - the measured LAeq was 59.3dB(A).
  - the estimated contribution from Resource Recovery Operations was 59dB (A) Leq. This is above the noise limit of 43dB (A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation.
- Location N2:
  - the measured LAeq was 51.1dB (A)
  - The estimated contribution from Resource Recovery Operations was LAeq 50 dB (A). This is above the noise limit of 43dB(A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation.
- Location N3:
  - the measured LAeq was 39dB (A).
  - the estimated contribution from Resource Recovery Operations was less than LAeq 35dB (A) which is below the noise limit of 39dB (A) Leq and below the noise agreement level of 70dB(A) LAeq during daytime (9am to 3pm) grinding operations
- Location N4:
  - the measured LAeq was 72.2dB (A).
  - noise estimated from Resource Recovery operations account for LAeq 60dB (A) which is above the noise limit of LAeq 43dB (A) and below the noise agreement level of 70dBA) LAeq during daytime (9am to 3pm) grinding operations, with the dominant noise being dogs barking and the green waste mulcher and excavator operation.
- Location N5
  - the measured LAeq was 48.3dB (A).
  - noise estimated from Resource Recovery operations account for LAeq 46 dB (A) which is above the noise limit of LAeq 43 dB (A) and below the noise agreement level of 70dBA) LAeq during daytime (9am to 3pm) grinding operations

Residence R1, R3 and R4 are owned by Byron Shire Council.



Tim Fitzroy
Environmental Health Scientist
Environmental Auditor

References

NSW DECC, 2009	Noise Guide for Local Government, Department of Environment, Climate Change & Water, Sydney
NSW EPA, 2017	Noise Policy for Industry. Environmental Protection Authority, Sydney

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A Noise Agreements

BYRON SHIRE COUNCIL

BSC File no: E2022/77670
15 August 2022

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

127 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N1 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:
   a. *An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.*

2. Timing of Grinding Operations

   a. *Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays; and*

   b. *Grinding will only occur once a calendar month for no more than 4 days in a row.*

I, Made Astawa (name of resident) of
Lot 3 - 127 The Manse Rd (address)
agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,

Danielle Hanigan
Manager, Resource Recovery

BYRON SHIRE COUNCIL

BSC File no: E2022/77668
15 August 2022

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

1 Dingo Lane
Myocum, NSW 2481

Or otherwise identified as RECEIVER N3 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:
    a. *An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.*

2. Timing of Grinding Operations

    a. *Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays; and*

    b. *Grinding will only occur once a calendar month for no more than 4 days in a row.*

I, April Rose (name of resident) of
1 dingo lane east, Myocum. (address)
agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,

Danielle Hanigan
Manager, Resource Recovery

BYRON SHIRE COUNCIL

BSC File no: E2022/77671
15 August 2022

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

147 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N4 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:
    a. *An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.*

2. Timing of Grinding Operations

    a. *Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays; and*

    b. *Grinding will only occur once a calendar month for no more than 4 days in a row.*

I, Kaisey Simmonds (name of resident) of
147 The Manse Rd, Myocum (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,

Danielle Hanigan
Manager, Resource Recovery

BYRON SHIRE COUNCIL

BSC File no: E2022/77669
15 August 2022

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

110 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N2 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:
    a. *An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.*

2. Timing of Grinding Operations

    a. *Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays; and*

    b. *Grinding will only occur once a calendar month for no more than 4 days in a row.*

I, Barry Stenner (name of resident) of
110 Manse Rd. (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

NB. We haven't heard any noise whilst grinding is in progress.

Kind Regards,

Danielle Hanigan
Manager, Resource Recovery

B Photographs

Photo A **Green Waste Mulching**

Photo B **Excavator feeding Mulcher**

C Noise Data

Summary

File Name on Meter	831_Data.442.s
File Name on PC	831C_10998-20230710 085835-831_Data.442.ldbin
Serial Number	0010998
Model	SoundAdvisor™ Model 831C
Firmware Version	04.0.7R0
User	
Location	
Job Description	
Note	

Measurement

Description	
Latitude	GPS Not Synchronized
Longitude	GPS Not Synchronized
Elevation	GPS Not Synchronized
Start	2023-07-10 08:58:35
Stop	2023-07-10 09:13:40
Duration	00:15:05.5
Run Time	00:15:05.5
Pause	00:00:00.0
Pre-Calibration	2023-07-10 08:39:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	C Weighting
Detector	Fast
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	144.2 dB

	A	C	Z
Under Range Peak	66.0	**67.0**	69.0 dB
Under Range Limit	**25.6**	26.2	37.0 dB
Noise Floor	16.5	17.0	24.6 dB

	First	Second	Third
Instrument Identification			

System Metrics

	Minimum	Maximum	Last
Internal Temperature	67.2 °F	75.0 °F	74.8 °F
External Voltage	12.6 V	12.7 V	12.6 V

Results

LA_{eq}	59.3 dB	
LAE	88.9 dB	
EA	85.634 µPa²h	
$LC_{pk\ (max)}$	2023-07-10 09:12:01	87.4 dB
LAF_{max}	2023-07-10 09:04:49	66.2 dB
LAF_{min}	2023-07-10 08:59:56	53.8 dB
SEA	-99.9 dB	
LAFTM5	61.1 dB	

	Exceedance Counts	Duration
LAF > 65.0 dB	3	4.3 s
LAF > 85.0 dB	0	0.0 s
LC_{pk} > 135.0 dB	0	0.0 s
LC_{pk} > 137.0 dB	0	0.0 s
LC_{pk} > 140.0 dB	0	0.0 s

Community Noise	LDN	LDay 07:00-22:00	LNight 22:00-07:00	LDEN	LDay 07:00-19:00	LEvening 19:00-22:00	LNight 22:00-07:00	
	59.3	59.3	-99.9	59.3	59.3	-99.9	-99.9	dB

L_{Ceq}	68.2	dB
L_{Aeq}	59.3	dB
L_{Ceq} - L_{Aeq}	8.9	dB
L_{AIeq}	60.1	dB
L_{Aeq}	59.3	dB
L_{AIeq} - L_{Aeq}	0.8	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	59.3		68.2		68.9	
$L_{S(max)}$	64.5	2023/07/10 9:04:49	74.7	2023/07/10 9:12:34	75.2	2023/07/10 9:12:34
$L_{F(max)}$	66.2	2023/07/10 9:04:49	77.7	2023/07/10 9:12:01	78.2	2023/07/10 9:12:01
$L_{I(max)}$	68.5	2023/07/10 9:12:01	79.6	2023/07/10 9:12:01	80.4	2023/07/10 9:12:01
$L_{S(min)}$	54.2	2023/07/10 8:59:27	63.8	2023/07/10 8:59:07	64.4	2023/07/10 8:59:07
$L_{F(min)}$	53.8	2023/07/10 8:59:56	59.8	2023/07/10 8:59:03	60.7	2023/07/10 8:59:03
$L_{I(min)}$	54.1	2023/07/10 8:59:27	61.9	2023/07/10 8:59:03	62.8	2023/07/10 8:59:03
$L_{pk(max)}$	87.1	2023/07/10 8:58:45	87.4	2023/07/10 9:12:01	88.2	2023/07/10 8:58:45

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Statistics

LA 1.00	63.4	dB
LA 5.00	61.7	dB
LA 10.00	61.1	dB
LA 50.00	59.1	dB
LA 90.00	56.1	dB
LA 99.00	54.5	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**
Direct	2022-10-05 13:16:06	-27.09	49.65	53.02	49.79	48.71	42.38	41.21	38.65	54.81	48.71
PRM831	2023-07-10 08:39:51	-27.03	48.12	49.23	53.85	48.43	39.12	35.97	44.69	45.30	45.74
PRM831	2023-06-29 10:16:21	-27.01	45.50	49.71	45.05	47.27	46.98	45.04	39.82	45.04	46.82
PRM831	2023-06-29 05:27:05	-27.11	56.09	57.29	53.92	51.39	61.70	58.09	49.99	51.07	46.98
PRM831	2023-06-21 17:46:42	-27.12	54.21	57.36	61.07	56.07	57.09	53.87	40.04	35.01	37.65
PRM831	2023-06-14 09:43:28	-27.05	40.86	38.43	45.90	44.05	47.69	41.73	42.50	44.51	54.41
PRM831	2023-06-06 10:32:38	-27.07	48.33	49.31	48.43	53.24	48.68	54.67	57.26	54.80	54.08
PRM831	2023-06-03 14:32:48	-27.05	49.38	50.54	58.69	54.53	56.66	55.80	58.19	61.46	55.18
PRM831	2023-05-24 07:43:27	-26.92	60.79	55.76	56.10	55.58	60.83	58.45	57.38	56.67	58.00
PRM831	2023-05-05 11:57:12	-27.00	50.93	55.80	51.21	47.84	44.76	48.16	51.32	50.99	54.28
PRM831	2023-04-17 12:05:20	-26.87	93.78	77.66	72.88	66.06	64.83	65.33	70.43	64.19	59.53
PRM831	2023-03-23 11:18:17	-27.03	47.10	45.96	68.92	75.64	86.21	121.75	113.86	105.55	100.68
Unknown	2021-04-15 13:48:38	-27.20	51.73	50.59	53.95	50.95	62.85	72.79	57.38	51.56	49.91
Unknown	2021-04-15 13:43:05	-27.13	50.14	48.23	52.56	48.31	48.80	44.22	39.27	44.90	42.67

50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
47.95	43.10	50.54	51.79	40.11	45.88	52.54	51.53	41.73	37.90	31.81	24.45	28.50	112.91	48.28	19.60	64.32	18.96	58.71	24.40	29.21	20.10	21.50	22.52	23.49	24.18	25.41
46.34	49.39	42.09	38.43	35.85	32.93	34.53	33.18	29.57	31.79	30.02	27.18	28.97	113.97	49.33	19.80	65.24	20.27	59.58	25.18	30.50	21.69	22.10	23.00	24.34	25.28	26.43
50.25	44.07	40.10	41.19	37.79	42.60	40.29	37.91	38.46	39.83	35.32	29.60	30.58	114.08	49.42	19.40	65.45	20.48	59.73	25.52	30.37	21.73	22.98	23.66	29.46	25.36	26.52
42.79	42.85	45.08	51.93	43.60	36.96	39.57	34.88	33.20	34.80	29.97	23.78	31.46	114.01	49.32	22.37	65.31	19.97	59.59	25.01	30.59	21.59	22.30	23.22	25.53	25.67	26.45
55.01	50.85	47.66	50.02	44.53	52.18	39.78	37.54	36.05	30.72	28.50	27.66	30.90	113.91	49.20	19.72	65.08	20.11	59.62	25.16	30.68	21.60	22.52	23.38	24.43	25.47	26.24
48.04	56.50	49.57	48.36	42.01	38.71	33.89	26.58	27.93	22.67	22.50	23.03	29.63	114.01	49.24	19.55	65.37	20.02	59.63	25.16	30.38	21.42	22.68	23.76	34.23	27.28	26.68
63.48	56.13	50.47	53.75	52.39	52.25	50.65	45.65	45.47	39.14	34.91	31.21	29.85	113.96	49.21	19.29	65.23	19.92	59.69	25.04	30.72	21.53	22.51	23.17	24.28	25.47	26.66
62.71	59.54	51.65	54.16	48.44	46.49	47.53	54.87	55.08	53.75	51.53	45.79	40.15	113.86	49.16	21.88	65.13	19.92	59.54	24.01	30.14	21.58	22.24	22.97	24.52	25.52	26.44
55.98	53.66	54.44	51.93	49.87	48.48	44.89	42.93	39.04	39.10	40.10	33.52	30.66	114.06	49.21	19.65	65.61	20.10	59.94	24.82	30.47	21.79	22.52	23.19	24.38	25.70	26.40
51.60	52.63	54.84	47.01	50.42	50.20	39.51	37.99	33.31	32.88	36.34	35.93	31.65	113.86	49.16	20.40	65.30	19.98	59.60	24.57	30.16	21.45	21.77	23.01	24.42	25.44	26.47
65.27	68.67	59.69	57.47	65.53	60.95	62.24	61.44	64.67	54.89	55.79	51.32	45.08	114.14	49.32	23.00	65.77	20.45	59.90	26.38	30.33	21.37	23.27	25.29	36.06	27.07	27.55
90.44	86.75	81.12	74.77	66.05	64.50	64.88	60.95	55.23	55.70	52.08	51.68	45.79	58.38	42.01	37.86	34.97	31.65	30.19	27.77	27.16	26.01	25.16	24.80	25.29	26.23	26.66
52.54	51.34	53.56	47.24	37.13	32.28	35.09	35.72	32.30	34.07	33.60	30.20	29.71	113.89	49.30	20.14	65.63	20.25	59.63	25.50	30.50	21.77	23.08	24.12	28.61	26.06	26.90
32.34	29.98	30.10	27.18	38.72	30.04	34.94	36.23	32.56	31.78	28.91	31.01	30.92	112.87	48.19	18.38	64.47	18.83	58.58	24.14	29.07	20.79	21.65	22.34	23.71	24.58	25.40

Summary

File Name on Meter	831_Data.445.s
File Name on PC	831C_10998-20230710 101833-831_Data.445.ldbin
Serial Number	0010998
Model	SoundAdvisor™ Model 831C
Firmware Version	04.0.7R0
User	
Location	
Job Description	
Note	

Measurement

Description	
Latitude	GPS Not Synchronized
Longitude	GPS Not Synchronized
Elevation	GPS Not Synchronized
Start	2023-07-10 10:18:33
Stop	2023-07-10 10:33:37
Duration	00:15:03.5
Run Time	00:15:03.5
Pause	00:00:00.0
Pre-Calibration	2023-07-10 08:39:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	C Weighting
Detector	Fast
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	144.2 dB

	A	C	Z
Under Range Peak	66.0	**67.0**	69.0 dB
Under Range Limit	**25.6**	26.2	37.0 dB
Noise Floor	16.5	17.0	24.6 dB

	First	Second	Third
Instrument Identification			

System Metrics

	Minimum	Maximum	Last
Internal Temperature	84.0 °F	94.6 °F	94.6 °F
External Voltage	12.5 V	12.7 V	12.6 V

Results

LAeq	51.1 dB	
LAE	80.7 dB	
EA	12.933 µPa²h	
LCpk (max)	2023-07-10 10:24:06	86.8 dB
LAFmax	2023-07-10 10:26:53	63.0 dB
LAFmin	2023-07-10 10:19:42	43.5 dB
SEA	-99.9 dB	
LAFTM5	54.1 dB	

	Exceedance Counts	Duration
LAF > 65.0 dB	0	0.0 s
LAF > 85.0 dB	0	0.0 s
LCpk > 135.0 dB	0	0.0 s
LCpk > 137.0 dB	0	0.0 s
LCpk > 140.0 dB	0	0.0 s

	LDN	LDay 07:00-22:00	LNight 22:00-07:00	LDEN	LDay 07:00-19:00	LEvening 19:00-22:00	LNight 22:00-07:00	
Community Noise								
	51.1	51.1	-99.9	51.1	51.1	-99.9	-99.9	dB

L_{Ceq}	63.6	dB
L_{Aeq}	51.1	dB
L_{Ceq} - L_{Aeq}	12.5	dB
L_{AIeq}	52.7	dB
L_{Aeq}	51.1	dB
L_{AIeq} - L_{Aeq}	1.6	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	51.1		63.6		69.2	
$L_{S(max)}$	60.2	2023/07/10 10:24:08	76.5	2023/07/10 10:23:59	82.8	2023/07/10 10:29:00
$L_{F(max)}$	63.0	2023/07/10 10:26:53	78.3	2023/07/10 10:23:59	88.7	2023/07/10 10:29:00
$L_{I(max)}$	67.0	2023/07/10 10:26:53	78.9	2023/07/10 10:23:59	90.9	2023/07/10 10:29:00
$L_{S(min)}$	44.3	2023/07/10 10:21:14	55.9	2023/07/10 10:21:16	60.2	2023/07/10 10:18:59
$L_{F(min)}$	43.5	2023/07/10 10:19:42	54.0	2023/07/10 10:20:46	56.6	2023/07/10 10:20:46
$L_{I(min)}$	44.0	2023/07/10 10:21:13	56.3	2023/07/10 10:21:16	60.5	2023/07/10 10:18:59
$L_{pk(max)}$	86.5	2023/07/10 10:32:53	86.8	2023/07/10 10:24:06	93.0	2023/07/10 10:29:00

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Statistics

LA 1.00	57.8	dB
LA 5.00	54.9	dB
LA 10.00	53.7	dB
LA 50.00	50.0	dB
LA 90.00	46.4	dB
LA 99.00	44.7	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**
Direct	2022-10-05 13:16:06	-27.09	49.65	53.02	49.79	48.71	42.38	41.21	38.65	54.81	48.71
PRM831	2023-07-10 08:39:51	-27.03	48.12	49.23	53.85	48.43	39.12	35.97	44.69	45.30	45.74
PRM831	2023-06-29 10:16:21	-27.01	45.50	49.71	45.05	47.27	46.98	45.04	39.82	45.04	46.82
PRM831	2023-06-29 05:27:05	-27.11	56.09	57.29	53.92	51.39	61.70	58.09	49.99	51.07	46.98
PRM831	2023-06-21 17:46:42	-27.12	54.21	57.36	61.07	56.07	57.09	53.87	40.04	35.01	37.65
PRM831	2023-06-14 09:43:28	-27.05	40.86	38.43	45.90	44.05	47.69	41.73	42.50	44.51	54.41
PRM831	2023-06-06 10:32:38	-27.07	48.33	49.31	48.43	53.24	48.68	54.67	57.26	54.80	54.08
PRM831	2023-06-03 14:32:48	-27.05	49.38	50.54	58.69	54.53	56.66	55.80	58.19	61.46	55.18
PRM831	2023-05-24 07:43:27	-26.92	60.79	55.76	56.10	55.58	60.83	58.45	57.38	56.67	58.00
PRM831	2023-05-05 11:57:12	-27.00	50.93	55.80	51.21	47.84	44.76	48.16	51.32	50.99	54.28
PRM831	2023-04-17 12:05:20	-26.87	93.78	77.66	72.88	66.06	64.83	65.33	70.43	64.19	59.53
PRM831	2023-03-23 11:18:17	-27.03	47.10	45.96	68.92	75.64	86.21	121.75	113.86	105.55	100.68
Unknown	2021-04-15 13:48:38	-27.20	51.73	50.59	53.95	50.95	62.85	72.79	57.38	51.56	49.91
Unknown	2021-04-15 13:43:05	-27.13	50.14	48.23	52.56	48.31	48.80	44.22	39.27	44.90	42.67

50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
47.95	43.10	50.54	51.79	40.11	45.88	52.54	51.53	41.73	37.90	31.81	24.45	28.50	112.91	48.28	19.60	64.32	18.96	58.71	24.40	29.21	20.10	21.50	22.52	23.49	24.18	25.41
46.34	49.39	42.09	38.43	35.85	32.93	34.53	33.18	29.57	31.79	30.02	27.18	28.97	113.97	49.33	19.80	65.24	20.27	59.58	25.18	30.50	21.69	22.10	23.00	24.34	25.28	26.43
50.25	44.07	40.10	41.19	37.79	42.60	40.29	37.91	38.46	39.83	35.32	29.60	30.58	114.08	49.42	19.40	65.45	20.48	59.73	25.52	30.37	21.73	22.98	23.66	29.46	25.36	26.52
42.79	42.85	45.08	51.93	43.60	36.96	39.57	34.88	33.20	34.80	29.97	23.78	31.46	114.01	49.32	22.37	65.31	19.97	59.59	25.01	30.59	21.59	22.30	23.22	25.53	25.67	26.45
55.01	50.85	47.66	50.02	44.53	52.18	39.78	37.54	36.05	30.72	28.50	27.66	30.90	113.91	49.20	19.72	65.08	20.11	59.62	25.16	30.68	21.60	22.52	23.38	24.43	25.47	26.24
48.04	56.50	49.57	48.36	42.01	38.71	33.89	26.58	27.93	22.67	22.50	23.03	29.63	114.01	49.24	19.55	65.37	20.02	59.63	25.16	30.38	21.42	22.68	23.76	34.23	27.28	26.68
63.48	56.13	50.47	53.75	52.39	52.25	50.65	45.65	45.47	39.14	34.91	31.21	29.85	113.96	49.21	19.29	65.23	19.92	59.69	25.04	30.72	21.53	22.51	23.17	24.28	25.47	26.66
62.71	59.54	51.65	54.16	48.44	46.49	47.53	54.87	55.08	53.75	51.53	45.79	40.15	113.86	49.16	21.88	65.13	19.92	59.54	24.01	30.14	21.58	22.24	22.97	24.52	25.52	26.44
55.98	53.66	54.44	51.93	49.87	48.48	44.89	42.93	39.04	39.10	40.10	33.52	30.66	114.06	49.21	19.65	65.61	20.10	59.94	24.82	30.47	21.79	22.52	23.19	24.38	25.70	26.40
51.60	52.63	54.84	47.01	50.42	50.20	39.51	37.99	33.31	32.88	36.34	35.93	31.65	113.86	49.16	20.40	65.30	19.98	59.60	24.57	30.16	21.45	21.77	23.01	24.42	25.44	26.47
65.27	68.67	59.69	57.47	65.53	60.95	62.24	61.44	64.67	54.89	55.79	51.32	45.08	114.14	49.32	23.00	65.77	20.45	59.90	26.38	30.33	21.37	23.27	25.29	36.06	27.07	27.55
90.44	86.75	81.12	74.77	66.05	64.50	64.88	60.95	55.23	55.70	52.08	51.68	45.79	58.38	42.01	37.86	34.97	31.65	30.19	27.77	27.16	26.01	25.16	24.80	25.29	26.23	26.66
52.54	51.34	53.56	47.24	37.13	32.28	35.09	35.72	32.30	34.07	33.60	30.20	29.71	113.89	49.30	20.14	65.63	20.25	59.63	25.50	30.50	21.77	23.08	24.12	28.61	26.06	26.90
32.34	29.98	30.10	27.18	38.72	30.04	34.94	36.23	32.56	31.78	28.91	31.01	30.92	112.87	48.19	18.38	64.47	18.83	58.58	24.14	29.07	20.79	21.65	22.34	23.71	24.58	25.40

Summary

File Name on Meter	831_Data.447.s
File Name on PC	831C_10998-20230710 104737-831_Data.447.ldbin
Serial Number	0010998
Model	SoundAdvisor™ Model 831C
Firmware Version	04.0.7R0
User	
Location	
Job Description	
Note	

Measurement

Description	
Latitude	GPS Not Synchronized
Longitude	GPS Not Synchronized
Elevation	GPS Not Synchronized
Start	2023-07-10 10:47:37
Stop	2023-07-10 11:02:40
Duration	00:15:02.9
Run Time	00:15:02.9
Pause	00:00:00.0
Pre-Calibration	2023-07-10 08:39:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	C Weighting
Detector	Fast
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	144.2 dB

	A	C	Z
Under Range Peak	66.0	**67.0**	69.0 dB
Under Range Limit	**25.6**	26.2	37.0 dB
Noise Floor	16.5	17.0	24.6 dB

	First	Second	Third
Instrument Identification			

System Metrics

	Minimum	Maximum	Last
Internal Temperature	96.8 °F	100.1 °F	100.1 °F
External Voltage	12.4 V	12.7 V	12.6 V

Results

LAeq	39.0 dB	
LAE	68.6 dB	
EA	0.797 µPa²h	
LCpk (max)	2023-07-10 11:01:50	77.7 dB
LAFmax	2023-07-10 10:48:33	59.9 dB
LAFmin	2023-07-10 10:59:35	30.8 dB
SEA	-99.9 dB	
LAFTM5	45.7 dB	

	Exceedance Counts	Duration
LAF > 65.0 dB	0	0.0 s
LAF > 85.0 dB	0	0.0 s
LCpk > 135.0 dB	0	0.0 s
LCpk > 137.0 dB	0	0.0 s
LCpk > 140.0 dB	0	0.0 s

Community Noise	**LDN**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**LDEN**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	39.0	39.0	-99.9	39.0	39.0	-99.9	-99.9	dB

L_{Ceq}	53.7	dB
L_{Aeq}	39.0	dB
L_{Ceq} - L_{Aeq}	14.7	dB
L_{AIeq}	43.4	dB
L_{Aeq}	39.0	dB
L_{AIeq} - L_{Aeq}	4.4	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	39.0		53.7		66.2	
$L_{S(max)}$	55.1	2023/07/10 10:48:33	63.4	2023/07/10 11:01:50	83.1	2023/07/10 11:01:47
$L_{F(max)}$	59.9	2023/07/10 10:48:33	68.0	2023/07/10 11:01:50	89.0	2023/07/10 11:01:47
$L_{I(max)}$	62.3	2023/07/10 10:48:33	71.3	2023/07/10 11:01:50	92.0	2023/07/10 11:01:47
$L_{S(min)}$	31.6	2023/07/10 10:59:35	49.0	2023/07/10 10:48:02	53.1	2023/07/10 10:48:00
$L_{F(min)}$	30.8	2023/07/10 10:59:35	47.1	2023/07/10 10:57:37	51.1	2023/07/10 10:58:53
$L_{I(min)}$	31.4	2023/07/10 10:59:35	49.9	2023/07/10 10:57:50	55.1	2023/07/10 10:47:55
$L_{pk(max)}$	75.5	2023/07/10 10:57:50	77.7	2023/07/10 11:01:50	94.0	2023/07/10 11:01:47

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Statistics

LA 1.00	47.2	dB
LA 5.00	43.4	dB
LA 10.00	41.8	dB
LA 50.00	36.2	dB
LA 90.00	33.9	dB
LA 99.00	32.5	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**
Direct	2022-10-05 13:16:06	-27.09	49.65	53.02	49.79	48.71	42.38	41.21	38.65	54.81	48.71
PRM831	2023-07-10 08:39:51	-27.03	48.12	49.23	53.85	48.43	39.12	35.97	44.69	45.30	45.74
PRM831	2023-06-29 10:16:21	-27.01	45.50	49.71	45.05	47.27	46.98	45.04	39.82	45.04	46.82
PRM831	2023-06-29 05:27:05	-27.11	56.09	57.29	53.92	51.39	61.70	58.09	49.99	51.07	46.98
PRM831	2023-06-21 17:46:42	-27.12	54.21	57.36	61.07	56.07	57.09	53.87	40.04	35.01	37.65
PRM831	2023-06-14 09:43:28	-27.05	40.86	38.43	45.90	44.05	47.69	41.73	42.50	44.51	54.41
PRM831	2023-06-06 10:32:38	-27.07	48.33	49.31	48.43	53.24	48.68	54.67	57.26	54.80	54.08
PRM831	2023-06-03 14:32:48	-27.05	49.38	50.54	58.69	54.53	56.66	55.80	58.19	61.46	55.18
PRM831	2023-05-24 07:43:27	-26.92	60.79	55.76	56.10	55.58	60.83	58.45	57.38	56.67	58.00
PRM831	2023-05-05 11:57:12	-27.00	50.93	55.80	51.21	47.84	44.76	48.16	51.32	50.99	54.28
PRM831	2023-04-17 12:05:20	-26.87	93.78	77.66	72.88	66.06	64.83	65.33	70.43	64.19	59.53
PRM831	2023-03-23 11:18:17	-27.03	47.10	45.96	68.92	75.64	86.21	121.75	113.86	105.55	100.68
Unknown	2021-04-15 13:48:38	-27.20	51.73	50.59	53.95	50.95	62.85	72.79	57.38	51.56	49.91
Unknown	2021-04-15 13:43:05	-27.13	50.14	48.23	52.56	48.31	48.80	44.22	39.27	44.90	42.67

50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
47.95	43.10	50.54	51.79	40.11	45.88	52.54	51.53	41.73	37.90	31.81	24.45	28.50	112.91	48.28	19.60	64.32	18.96	58.71	24.40	29.21	20.10	21.50	22.52	23.49	24.18	25.41
46.34	49.39	42.09	38.43	35.85	32.93	34.53	33.18	29.57	31.79	30.02	27.18	28.97	113.97	49.33	19.80	65.24	20.27	59.58	25.18	30.50	21.69	22.10	23.00	24.34	25.28	26.43
50.25	44.07	40.10	41.19	37.79	42.60	40.29	37.91	38.46	39.83	35.32	29.60	30.58	114.08	49.42	19.40	65.45	20.48	59.73	25.52	30.37	21.73	22.98	23.66	29.46	25.36	26.52
42.79	42.85	45.08	51.93	43.60	36.96	39.57	34.88	33.20	34.80	29.97	23.78	31.46	114.01	49.32	22.37	65.31	19.97	59.59	25.01	30.59	21.59	22.30	23.22	25.53	25.67	26.45
55.01	50.85	47.66	50.02	44.53	52.18	39.78	37.54	36.05	30.72	28.50	27.66	30.90	113.91	49.20	19.72	65.08	20.11	59.62	25.16	30.68	21.60	22.52	23.38	24.43	25.47	26.24
48.04	56.50	49.57	48.36	42.01	38.71	33.89	26.58	27.93	22.67	22.50	23.03	29.63	114.01	49.24	19.55	65.37	20.02	59.63	25.16	30.38	21.42	22.68	23.76	34.23	27.28	26.68
63.48	56.13	50.47	53.75	52.39	52.25	50.65	45.65	45.47	39.14	34.91	31.21	29.85	113.96	49.21	19.29	65.23	19.92	59.69	25.04	30.72	21.53	22.51	23.17	24.28	25.47	26.66
62.71	59.54	51.65	54.16	48.44	46.49	47.53	54.87	55.08	53.75	51.53	45.79	40.15	113.86	49.16	21.88	65.13	19.92	59.54	24.01	30.14	21.58	22.24	22.97	24.52	25.52	26.44
55.98	53.66	54.44	51.93	49.87	48.48	44.89	42.93	39.04	39.10	40.10	33.52	30.66	114.06	49.21	19.65	65.61	20.10	59.94	24.82	30.47	21.79	22.52	23.19	24.38	25.70	26.40
51.60	52.63	54.84	47.01	50.42	50.20	39.51	37.99	33.31	32.88	36.34	35.93	31.65	113.86	49.16	20.40	65.30	19.98	59.60	24.57	30.16	21.45	21.77	23.01	24.42	25.44	26.47
65.27	68.67	59.69	57.47	65.53	60.95	62.24	61.44	64.67	54.89	55.79	51.32	45.08	114.14	49.32	23.00	65.77	20.45	59.90	26.38	30.33	21.37	23.27	25.29	36.06	27.07	27.55
90.44	86.75	81.12	74.77	66.05	64.50	64.88	60.95	55.23	55.70	52.08	51.68	45.79	58.38	42.01	37.86	34.97	31.65	30.19	27.77	27.16	26.01	25.16	24.80	25.29	26.23	26.66
52.54	51.34	53.56	47.24	37.13	32.28	35.09	35.72	32.30	34.07	33.60	30.20	29.71	113.89	49.30	20.14	65.63	20.25	59.63	25.50	30.50	21.77	23.08	24.12	28.61	26.06	26.90
32.34	29.98	30.10	27.18	38.72	30.04	34.94	36.23	32.56	31.78	28.91	31.01	30.92	112.87	48.19	18.38	64.47	18.83	58.58	24.14	29.07	20.79	21.65	22.34	23.71	24.58	25.40

Summary

File Name on Meter	831_Data.443.s
File Name on PC	831C_10998-20230710 093319-831_Data.443.ldbin
Serial Number	0010998
Model	SoundAdvisor™ Model 831C
Firmware Version	04.0.7R0
User	
Location	
Job Description	
Note	

Measurement

Description	
Latitude	GPS Not Synchronized
Longitude	GPS Not Synchronized
Elevation	GPS Not Synchronized
Start	2023-07-10 09:33:19
Stop	2023-07-10 09:48:35
Duration	00:15:16.4
Run Time	00:15:16.4
Pause	00:00:00.0
Pre-Calibration	2023-07-10 08:39:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	C Weighting
Detector	Fast
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	144.2 dB

	A	**C**	**Z**
Under Range Peak	66.0	**67.0**	69.0 dB
Under Range Limit	**25.6**	26.2	37.0 dB
Noise Floor	16.5	17.0	24.6 dB

	First	**Second**	**Third**
Instrument Identification			

System Metrics

	Minimum	**Maximum**	**Last**
Internal Temperature	75.0 °F	77.5 °F	77.5 °F
External Voltage	12.6 V	12.7 V	12.6 V

Results

LAeq	72.2 dB		
LAE	101.8 dB		
EA	1.690 mPa²h		
LCpk (max)	2023-07-10 09:40:54	110.9 dB	
LAFmax	2023-07-10 09:40:54	96.4 dB	
LAFmin	2023-07-10 09:33:24	52.8 dB	
SEA	-99.9 dB		
LAFTM5	81.9 dB		

	Exceedance Counts	**Duration**
LAF > 65.0 dB	202	496.0 s
LAF > 85.0 dB	12	5.5 s
LCpk > 135.0 dB	0	0.0 s
LCpk > 137.0 dB	0	0.0 s
LCpk > 140.0 dB	0	0.0 s

Community Noise	**LDN**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**LDEN**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	72.2	72.2	-99.9	72.2	72.2	-99.9	-99.9	dB

L_{Ceq}	74.4	dB
L_{Aeq}	72.2	dB
L_{Ceq} - L_{Aeq}	2.2	dB
LA_{leq}	80.6	dB
L_{Aeq}	72.2	dB
LA_{leq} - L_{Aeq}	8.4	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	72.2		74.4		74.5	
$L_{S(max)}$	88.6	2023/07/10 9:40:54	89.8	2023/07/10 9:40:54	89.8	2023/07/10 9:40:54
$L_{F(max)}$	96.4	2023/07/10 9:40:54	97.7	2023/07/10 9:40:54	97.7	2023/07/10 9:40:54
$L_{I(max)}$	100.0	2023/07/10 9:40:54	101.6	2023/07/10 9:40:54	101.5	2023/07/10 9:40:54
$L_{S(min)}$	55.7	2023/07/10 9:33:34	62.7	2023/07/10 9:34:07	63.2	2023/07/10 9:34:07
$L_{F(min)}$	52.8	2023/07/10 9:33:24	60.9	2023/07/10 9:34:58	61.5	2023/07/10 9:34:58
$L_{I(min)}$	55.9	2023/07/10 9:33:35	62.2	2023/07/10 9:35:01	62.8	2023/07/10 9:34:58
$L_{pk(max)}$	109.8	2023/07/10 9:40:54	110.9	2023/07/10 9:40:54	111.0	2023/07/10 9:40:54

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Statistics

LA 1.00	83.1	dB
LA 5.00	79.2	dB
LA 10.00	75.8	dB
LA 50.00	63.8	dB
LA 90.00	59.6	dB
LA 99.00	55.5	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**
Direct	2022-10-05 13:16:06	-27.09	49.65	53.02	49.79	48.71	42.38	41.21	38.65	54.81	48.71
PRM831	2023-07-10 08:39:51	-27.03	48.12	49.23	53.85	48.43	39.12	35.97	44.69	45.30	45.74
PRM831	2023-06-29 10:16:21	-27.01	45.50	49.71	45.05	47.27	46.98	45.04	39.82	45.04	46.82
PRM831	2023-06-29 05:27:05	-27.11	56.09	57.29	53.92	51.39	61.70	58.09	49.99	51.07	46.98
PRM831	2023-06-21 17:46:42	-27.12	54.21	57.36	61.07	56.07	57.09	53.87	40.04	35.01	37.65
PRM831	2023-06-14 09:43:28	-27.05	40.86	38.43	45.90	44.05	47.69	41.73	42.50	44.51	54.41
PRM831	2023-06-06 10:32:38	-27.07	48.33	49.31	48.43	53.24	48.68	54.67	57.26	54.80	54.08
PRM831	2023-06-03 14:32:48	-27.05	49.38	50.54	58.69	54.53	56.66	55.80	58.19	61.46	55.18
PRM831	2023-05-24 07:43:27	-26.92	60.79	55.76	56.10	55.58	60.83	58.45	57.38	56.67	58.00
PRM831	2023-05-05 11:57:12	-27.00	50.93	55.80	51.21	47.84	44.76	48.16	51.32	50.99	54.28
PRM831	2023-04-17 12:05:20	-26.87	93.78	77.66	72.88	66.06	64.83	65.33	70.43	64.19	59.53
PRM831	2023-03-23 11:18:17	-27.03	47.10	45.96	68.92	75.64	86.21	121.75	113.86	105.55	100.68
Unknown	2021-04-15 13:48:38	-27.20	51.73	50.59	53.95	50.95	62.85	72.79	57.38	51.56	49.91
Unknown	2021-04-15 13:43:05	-27.13	50.14	48.23	52.56	48.31	48.80	44.22	39.27	44.90	42.67

50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
47.95	43.10	50.54	51.79	40.11	45.88	52.54	51.53	41.73	37.90	31.81	24.45	28.50	112.91	48.28	19.60	64.32	18.96	58.71	24.40	29.21	20.10	21.50	22.52	23.49	24.18	25.41
46.34	49.39	42.09	38.43	35.85	32.93	34.53	33.18	29.57	31.79	30.02	27.18	28.97	113.97	49.33	19.80	65.24	20.27	59.58	25.18	30.50	21.69	22.10	23.00	24.34	25.28	26.43
50.25	44.07	40.10	41.19	37.79	42.60	40.29	37.91	38.46	39.83	35.32	29.60	30.58	114.08	49.42	19.40	65.45	20.48	59.73	25.52	30.37	21.73	22.98	23.66	29.46	25.36	26.52
42.79	42.85	45.08	51.93	43.60	36.96	39.57	34.88	33.20	34.80	29.97	23.78	31.46	114.01	49.32	22.37	65.31	19.97	59.59	25.01	30.59	21.59	22.30	23.22	25.53	25.67	26.45
55.01	50.85	47.66	50.02	44.53	52.18	39.78	37.54	36.05	30.72	28.50	27.66	30.90	113.91	49.20	19.72	65.08	20.11	59.62	25.16	30.68	21.60	22.52	23.38	24.43	25.47	26.24
48.04	56.50	49.57	48.36	42.01	38.71	33.89	26.58	27.93	22.67	22.50	23.03	29.63	114.01	49.24	19.55	65.37	20.02	59.63	25.16	30.38	21.42	22.68	23.76	34.23	27.28	26.68
63.48	56.13	50.47	53.75	52.39	52.25	50.65	45.65	45.47	39.14	34.91	31.21	29.85	113.96	49.21	19.29	65.23	19.92	59.69	25.04	30.72	21.53	22.51	23.17	24.28	25.47	26.66
62.71	59.54	51.65	54.16	48.44	46.49	47.53	54.87	55.08	53.75	51.53	45.79	40.15	113.86	49.16	21.88	65.13	19.92	59.54	24.01	30.14	21.58	22.24	22.97	24.52	25.52	26.44
55.98	53.66	54.44	51.93	49.87	48.48	44.89	42.93	39.04	39.10	40.10	33.52	30.66	114.06	49.21	19.65	65.61	20.10	59.94	24.82	30.47	21.79	22.52	23.19	24.38	25.70	26.40
51.60	52.63	54.84	47.01	50.42	50.20	39.51	37.99	33.31	32.88	36.34	35.93	31.65	113.86	49.16	20.40	65.30	19.98	59.60	24.57	30.16	21.45	21.77	23.01	24.42	25.44	26.47
65.27	68.67	59.69	57.47	65.53	60.95	62.24	61.44	64.67	54.89	55.79	51.32	45.08	114.14	49.32	23.00	65.77	20.45	59.90	26.38	30.33	21.37	23.27	25.29	36.06	27.07	27.55
90.44	86.75	81.12	74.77	66.05	64.50	64.88	60.95	55.23	55.70	52.08	51.68	45.79	58.38	42.01	37.86	34.97	31.65	30.19	27.77	27.16	26.01	25.16	24.80	25.29	26.23	26.66
52.54	51.34	53.56	47.24	37.13	32.28	35.09	35.72	32.30	34.07	33.60	30.20	29.71	113.89	49.30	20.14	65.63	20.25	59.63	25.50	30.50	21.77	23.08	24.12	28.61	26.06	26.90
32.34	29.98	30.10	27.18	38.72	30.04	34.94	36.23	32.56	31.78	28.91	31.01	30.92	112.87	48.19	18.38	64.47	18.83	58.58	24.14	29.07	20.79	21.65	22.34	23.71	24.58	25.40

Summary

File Name on Meter	831_Data.444.s
File Name on PC	831C_10998-20230710 095811-831_Data.444.ldbin
Serial Number	0010998
Model	SoundAdvisor™ Model 831C
Firmware Version	04.0.7R0
User	
Location	
Job Description	
Note	

Measurement

Description	
Latitude	GPS Not Synchronized
Longitude	GPS Not Synchronized
Elevation	GPS Not Synchronized
Start	2023-07-10 09:58:11
Stop	2023-07-10 10:13:15
Duration	00:15:04.0
Run Time	00:15:04.0
Pause	00:00:00.0
Pre-Calibration	2023-07-10 08:39:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	C Weighting
Detector	Fast
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Gain	0.0 dB
Overload	144.2 dB

	A	C	Z
Under Range Peak	66.0	**67.0**	69.0 dB
Under Range Limit	**25.6**	26.2	37.0 dB
Noise Floor	16.5	17.0	24.6 dB

	First	Second	Third
Instrument Identification			

System Metrics

	Minimum	Maximum	Last
Internal Temperature	78.4 °F	82.6 °F	82.6 °F
External Voltage	12.6 V	12.7 V	12.6 V

Results

LAeq	48.3 dB	
LAE	77.9 dB	
EA	6.791 µPa²h	
LCpk (max)	2023-07-10 10:10:53	83.6 dB
LAFmax	2023-07-10 10:04:37	67.1 dB
LAFmin	2023-07-10 10:03:51	41.7 dB
SEA	-99.9 dB	
LAFTM5	54.1 dB	

	Exceedance Counts	Duration
LAF > 65.0 dB	6	1.9 s
LAF > 85.0 dB	0	0.0 s
LCpk > 135.0 dB	0	0.0 s
LCpk > 137.0 dB	0	0.0 s
LCpk > 140.0 dB	0	0.0 s

Community Noise	**LDN**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**LDEN**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**	
	48.3	48.3	-99.9	48.3	48.3	-99.9	-99.9	dB

L_{Ceq}	58.6	dB
L_{Aeq}	48.3	dB
L_{Ceq} - L_{Aeq}	10.3	dB
L_{AIeq}	52.2	dB
L_{Aeq}	48.3	dB
L_{AIeq} - L_{Aeq}	3.9	dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	48.3		58.6		60.2	
$L_{S(max)}$	61.8	2023/07/10 10:05:08	65.9	2023/07/10 10:10:53	70.5	2023/07/10 10:10:53
$L_{F(max)}$	67.1	2023/07/10 10:04:37	72.2	2023/07/10 10:10:53	76.7	2023/07/10 10:10:53
$L_{I(max)}$	68.9	2023/07/10 10:04:37	74.8	2023/07/10 10:10:53	79.9	2023/07/10 10:10:53
$L_{S(min)}$	42.5	2023/07/10 10:03:52	52.1	2023/07/10 10:04:15	54.2	2023/07/10 10:04:15
$L_{F(min)}$	41.7	2023/07/10 10:03:51	50.1	2023/07/10 10:04:15	52.1	2023/07/10 10:04:14
$L_{I(min)}$	42.2	2023/07/10 10:04:15	51.8	2023/07/10 10:04:15	54.7	2023/07/10 10:04:15
$L_{pk(max)}$	81.1	2023/07/10 10:12:43	83.6	2023/07/10 10:10:53	85.5	2023/07/10 10:10:53

Overload Count	0	
Overload Duration	0.0	s
OBA Overload Count	0	
OBA Overload Duration	0.0	s

Statistics

LA 1.00	56.4	dB
LA 5.00	50.4	dB
LA 10.00	49.5	dB
LA 50.00	47.1	dB
LA 90.00	43.8	dB
LA 99.00	42.4	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**
Direct	2022-10-05 13:16:06	-27.09	49.65	53.02	49.79	48.71	42.38	41.21	38.65	54.81	48.71
PRM831	2023-07-10 08:39:51	-27.03	48.12	49.23	53.85	48.43	39.12	35.97	44.69	45.30	45.74
PRM831	2023-06-29 10:16:21	-27.01	45.50	49.71	45.05	47.27	46.98	45.04	39.82	45.04	46.82
PRM831	2023-06-29 05:27:05	-27.11	56.09	57.29	53.92	51.39	61.70	58.09	49.99	51.07	46.98
PRM831	2023-06-21 17:46:42	-27.12	54.21	57.36	61.07	56.07	57.09	53.87	40.04	35.01	37.65
PRM831	2023-06-14 09:43:28	-27.05	40.86	38.43	45.90	44.05	47.69	41.73	42.50	44.51	54.41
PRM831	2023-06-06 10:32:38	-27.07	48.33	49.31	48.43	53.24	48.68	54.67	57.26	54.80	54.08
PRM831	2023-06-03 14:32:48	-27.05	49.38	50.54	58.69	54.53	56.66	55.80	58.19	61.46	55.18
PRM831	2023-05-24 07:43:27	-26.92	60.79	55.76	56.10	55.58	60.83	58.45	57.38	56.67	58.00
PRM831	2023-05-05 11:57:12	-27.00	50.93	55.80	51.21	47.84	44.76	48.16	51.32	50.99	54.28
PRM831	2023-04-17 12:05:20	-26.87	93.78	77.66	72.88	66.06	64.83	65.33	70.43	64.19	59.53
PRM831	2023-03-23 11:18:17	-27.03	47.10	45.96	68.92	75.64	86.21	121.75	113.86	105.55	100.68
Unknown	2021-04-15 13:48:38	-27.20	51.73	50.59	53.95	50.95	62.85	72.79	57.38	51.56	49.91
Unknown	2021-04-15 13:43:05	-27.13	50.14	48.23	52.56	48.31	48.80	44.22	39.27	44.90	42.67

50.0	63.0	80.0	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000
47.95	43.10	50.54	51.79	40.11	45.88	52.54	51.53	41.73	37.90	31.81	24.45	28.50	112.91	48.28	19.60	64.32	18.96	58.71	24.40	29.21	20.10	21.50	22.52	23.49	24.18	25.41
46.34	49.39	42.09	38.43	35.85	32.93	34.53	33.18	29.57	31.79	30.02	27.18	28.97	113.97	49.33	19.80	65.24	20.27	59.58	25.18	30.50	21.69	22.10	23.00	24.34	25.28	26.43
50.25	44.07	40.10	41.19	37.79	42.60	40.29	37.91	38.46	39.83	35.32	29.60	30.58	114.08	49.42	19.40	65.45	20.48	59.73	25.52	30.37	21.73	22.98	23.66	29.46	25.36	26.52
42.79	42.85	45.08	51.93	43.60	36.96	39.57	34.88	33.20	34.80	29.97	23.78	31.46	114.01	49.32	22.37	65.31	19.97	59.59	25.01	30.59	21.59	22.30	23.22	25.53	25.67	26.45
55.01	50.85	47.66	50.02	44.53	52.18	39.78	37.54	36.05	30.72	28.50	27.66	30.90	113.91	49.20	19.72	65.08	20.11	59.62	25.16	30.68	21.60	22.52	23.38	24.43	25.47	26.24
48.04	56.50	49.57	48.36	42.01	38.71	33.89	26.58	27.93	22.67	22.50	23.03	29.63	114.01	49.24	19.55	65.37	20.02	59.63	25.16	30.38	21.42	22.68	23.76	34.23	27.28	26.68
63.48	56.13	50.47	53.75	52.39	52.25	50.65	45.65	45.47	39.14	34.91	31.21	29.85	113.96	49.21	19.29	65.23	19.92	59.69	25.04	30.72	21.53	22.51	23.17	24.28	25.47	26.66
62.71	59.54	51.65	54.16	48.44	46.49	47.53	54.87	55.08	53.75	51.53	45.79	40.15	113.86	49.16	21.88	65.13	19.92	59.54	24.01	30.14	21.58	22.24	22.97	24.52	25.52	26.44
55.98	53.66	54.44	51.93	49.87	48.48	44.89	42.93	39.04	39.10	40.10	33.52	30.66	114.06	49.21	19.65	65.61	20.10	59.94	24.82	30.47	21.79	22.52	23.19	24.38	25.70	26.40
51.60	52.63	54.84	47.01	50.42	50.20	39.51	37.99	33.31	32.88	36.34	35.93	31.65	113.86	49.16	20.40	65.30	19.98	59.60	24.57	30.16	21.45	21.77	23.01	24.42	25.44	26.47
65.27	68.67	59.69	57.47	65.53	60.95	62.24	61.44	64.67	54.89	55.79	51.32	45.08	114.14	49.32	23.00	65.77	20.45	59.90	26.38	30.33	21.37	23.27	25.29	36.06	27.07	27.55
90.44	86.75	81.12	74.77	66.05	64.50	64.88	60.95	55.23	55.70	52.08	51.68	45.79	58.38	42.01	37.86	34.97	31.65	30.19	27.77	27.16	26.01	25.16	24.80	25.29	26.23	26.66
52.54	51.34	53.56	47.24	37.13	32.28	35.09	35.72	32.30	34.07	33.60	30.20	29.71	113.89	49.30	20.14	65.63	20.25	59.63	25.50	30.50	21.77	23.08	24.12	28.61	26.06	26.90
32.34	29.98	30.10	27.18	38.72	30.04	34.94	36.23	32.56	31.78	28.91	31.01	30.92	112.87	48.19	18.38	64.47	18.83	58.58	24.14	29.07	20.79	21.65	22.34	23.71	24.58	25.40