



Monthly compliance noise monitoring report

Glebe Island / White Bay

Port Authority of New South Wales

February 2022



GHD Pty Ltd | ABN 39 008 488 373



133 Castlereagh Street, Level 15

Sydney, New South Wales 2000, Australia

T +61 2 9239 7100 | F +61 2 9239 7199 | E sydmail@ghd.com | ghd.com

Author	Chris Gordon
Client name	Port Authority of New South Wales
Document title	Monthly compliance noise monitoring report – February 2022
Revision version	Rev 0
Project number	12540862

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	C Gordon	V Lau		E Milton		08/03/2022
S4	0	C Gordon	V Lau		E Milton		13/04/2022

© GHD 2022

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

1. Introduction

GHD Pty Ltd (GHD) has been engaged by Port Authority of New South Wales (Port Authority) to undertake compliance noise monitoring, as required by the *Port Noise Policy (Port Authority, 2020)*.

This report provides the details of the compliance noise monitoring for all vessels at berth during February 2022, as determined using the noise monitoring system. A detailed description of the permanent noise monitoring system including a map of monitoring locations is provided in the Noise Monitoring Plan, available on Port Authority's website.

2. Noise monitoring details and vessel schedule

Client	Company details	Noise monitor name	Noise monitor location	Noise monitor details / settings	Noise monitor serial numbers	Monthly calibration variance
Port Authority of New South Wales	GHD Pty Ltd Member of the Association of Australasian Acoustical Consultants (AAAC) Lead staff are Members of the Australian Acoustical Society (AAS)	L01	Grafton Street, Balmain	Meter details Norsonic Nor145 Sound Level Meter with Nor1297 Noise Compass	14529640	Initial calibration level 92.6 dBA Min. deviation = 0.1 dB Max. deviation = 0.2 dB
		L02	Maintenance Building on White Bay		14529642	Initial calibration level 91.5 dBA Min. deviation = 0.0 dB Max. deviation = 0.2 dB
		L03	Adjacent to White Bay 2	Meter settings A-weighted Fast time response 15 minute intervals	14529643	Initial calibration level 91.7 dBA Min. deviation = 0.0 dB Max. deviation = 0.1 dB
		L04	Onsite at Glebe Island		14529644	Initial calibration level 91.4 dBA Min. deviation = 0.0 dB Max. deviation = 0.3 dB
Vessel name	Arrival date and time	Departure date and time		Berth location	Applicable noise monitoring location/s	
Akuna	February 5, 2022 21:48	February 7, 2022 22:00		GLB8	L03	
Mareeba	February 13, 2022 06:37	February 17, 2022 10:00		GLB7	L03	

3. Compliance summary

Vessel	Dates at berth	Monitor location	Vessel Noise Level, dBA (inclusive of any modifying factor penalties)			Vessel Noise Trigger Levels, dBA			Compliance ¹	
			Day ² L _{Aeq} (15 hr)	Night ³ L _{Aeq} (1 hr)	Night ³ L _{Amax}	Day ² L _{Aeq} (15 hr)	Night ³ L _{Aeq} (1 hr)	Night ³ L _{Amax}	Day	Night
Akuna	Feb 5 – Feb 7 2022	L03	56	54	64	60	55	65	Yes	Yes
Mareeba	Feb 13 – Feb 17, 2022	L03	52	51	59	60	55	65	Yes	Yes

Note: 1) If non-compliance is detected, a detailed investigation of the results will be undertaken and reported separately if required

Note: 2) Daytime period (7 am to 10 pm) – 15 hour logarithmic average

Note: 3) Night-time (10 pm to 7 am) – worst case 1 hour period

4. Detailed results

4.1 Akuna – February 5 – February 7, 2022 (GLB8)

4.1.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
February 5, 2022	Day	L03	L _{Aeq, 15 hour} ¹	56	No	Yes ⁴	60	Yes
	Night		L _{Aeq, 1 hour} ¹	53	No	No	55	Yes
			L _{Amax}	64	-	-	65	Yes
February 6, 2022	Day	L03	L _{Aeq, 15 hour} ¹	53	No	No	60	Yes
	Night		L _{Aeq, 1 hour} ¹	54	No	No	55	Yes
			L _{Amax}	64	-	-	65	Yes
February 7, 2022	Day	L03	L _{Aeq, 15 hour} ¹	55	No	No	60	Yes
	Night		L _{Aeq, 1 hour} ¹	-	-	-	55	-
			L _{Amax}	-	-	-	65	-

Notes

- 1) Daytime period (7 am to 10 pm) – 15 hours
Night-time period (10 pm to 7 am) – worst case 1 hour
- 2) Inclusive of any penalties for modifying factors
- 3) LFN = Low Frequency Noise
- 4) The Port Noise Policy does not currently apply the Noise Policy for Industry (NPI) method modifying factor for low frequency noise. A 2 dB penalty for daytime and a 5 dB penalty for the evening/night-time period would apply when assessed in accordance with Fact Sheet 3 Corrections for annoying noise characteristics from the EPA's Noise Policy for Industry Further investigation is currently being undertaken to determine impacts from low frequency noise from vessels.

4.1.2 Additional information

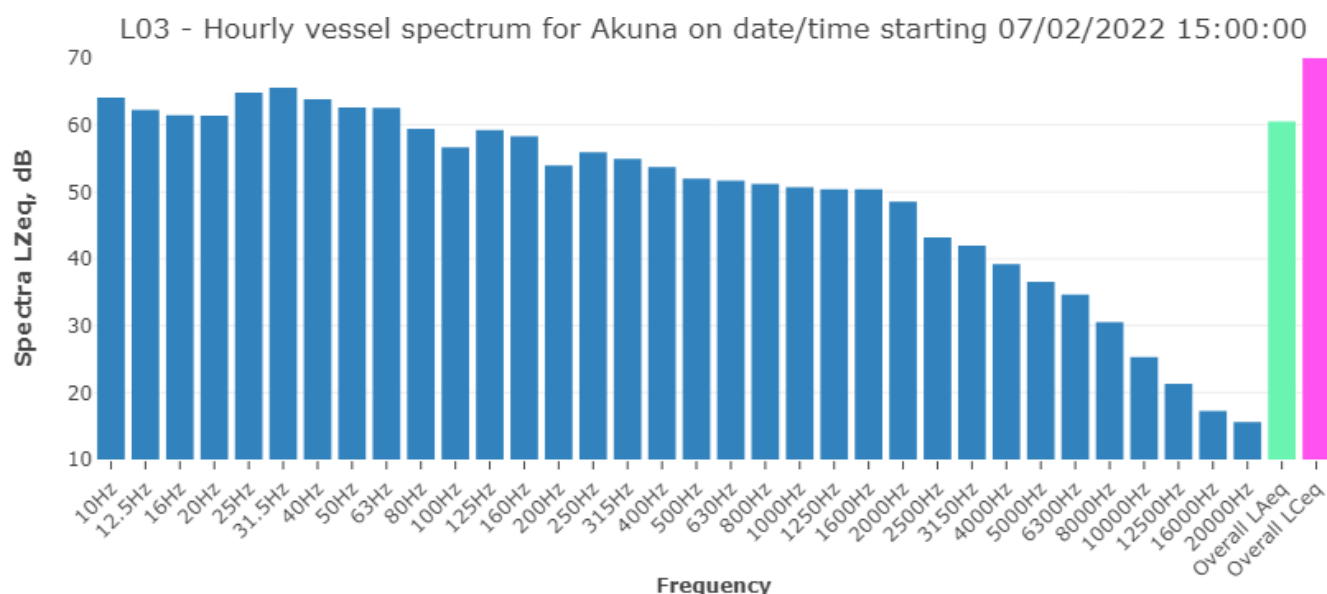


Figure 4.1 Typical vessel spectrum – noise level at L03

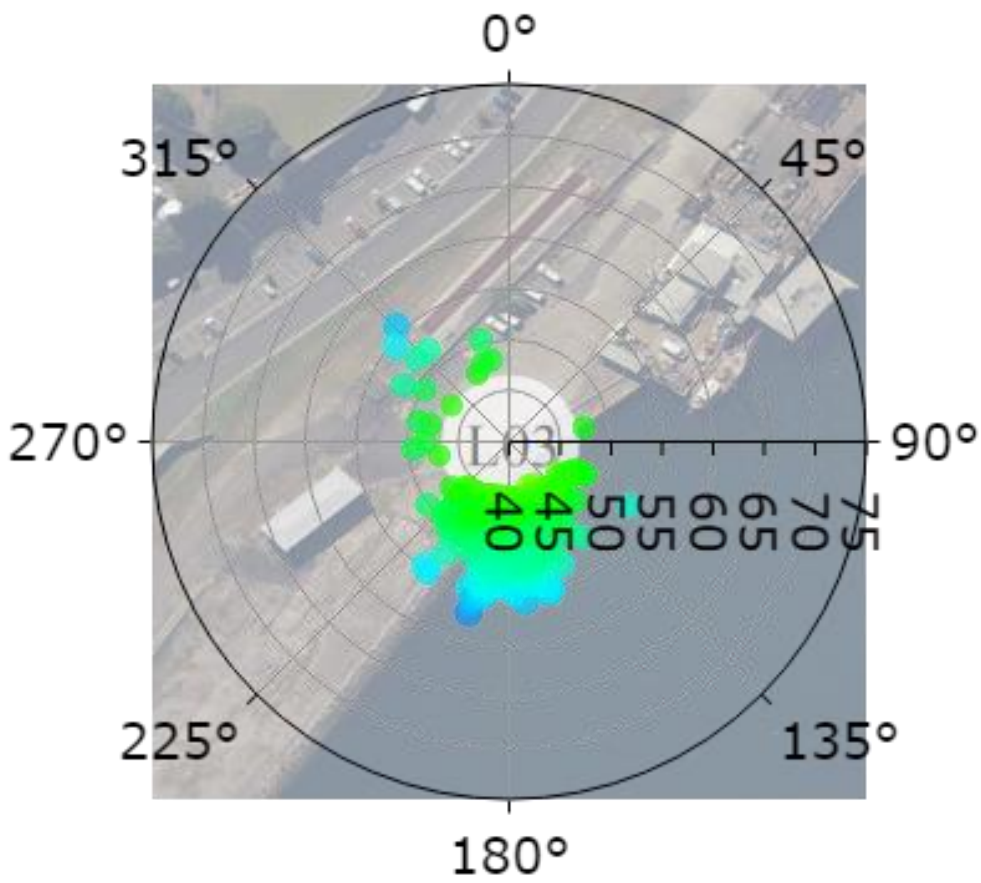


Figure 4.2 Typical vessel polar (directional) plot

4.2 Mareeba – February 13 – February 17, 2022 (GLB7)

4.2.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
February 13, 2022	Day	L03	L _{Aeq} , 15 hour ¹	51	Yes ⁵	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	51	No	No	55	Yes
			L _{Amax}	56	-	-	65	Yes
February 14, 2022	Day	L03	L _{Aeq} , 15 hour ¹	52	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	50	No	No	55	Yes
			L _{Amax}	58	-	-	65	Yes
February 15, 2022	Day	L03	L _{Aeq} , 15 hour ¹	52	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	51	No	No	55	Yes
			L _{Amax}	58	-	-	65	Yes
February 16, 2022	Day	L03	L _{Aeq} , 15 hour ¹	52	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	50	No	No	55	Yes
			L _{Amax}	59	-	-	65	Yes
February 17, 2022	Day	L03	L _{Aeq} , 15 hour ¹	52	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	-	-	-	55	-
			L _{Amax}	-	-	-	65	-

Notes

1) Daytime period (7 am to 10 pm)– 15 hours

Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) The Port Noise Policy does not currently apply the Noise Policy for Industry (NPI) method modifying factor for low frequency noise. A 2 dB penalty for daytime and a 5 dB penalty for the evening/night-time period would apply when assessed in accordance with Fact Sheet 3 Corrections for annoying noise characteristics from the EPA's Noise Policy for Industry Further investigation is currently being undertaken to determine impacts from low frequency noise from vessels.

5) See discussion in Section 4.2.2 below

4.2.2 Discussion

The noise monitoring system determined that tonal noise was present while the Mareeba was at berth at Glebe Island 7. Subsequently, the data was reviewed to determine whether this was due to the vessel.

During the five day stay, tonal noise at 6,300 Hz was present for 1 hour only, between 9 pm and 10 pm on February 13, 2022

The following can be deduced:

- It is possible that the tonal noise is attributable to the vessel, however as it was only present on one occasion, further investigation is required
- Given the short duration of the tonality, a penalty is not considered appropriate
- It is not clear what type of operation associated with the vessel could generate a tone at 6,300 Hz. Given the time of the event, it may be related to ramping down of operations. If this occurs during the vessel's next visit, it is recommended that Port Authority discuss this with the vessel operator to determine a possible source
- This will be monitored during future visits to determine if the tonal noise is reoccurring

4.2.3 Additional information

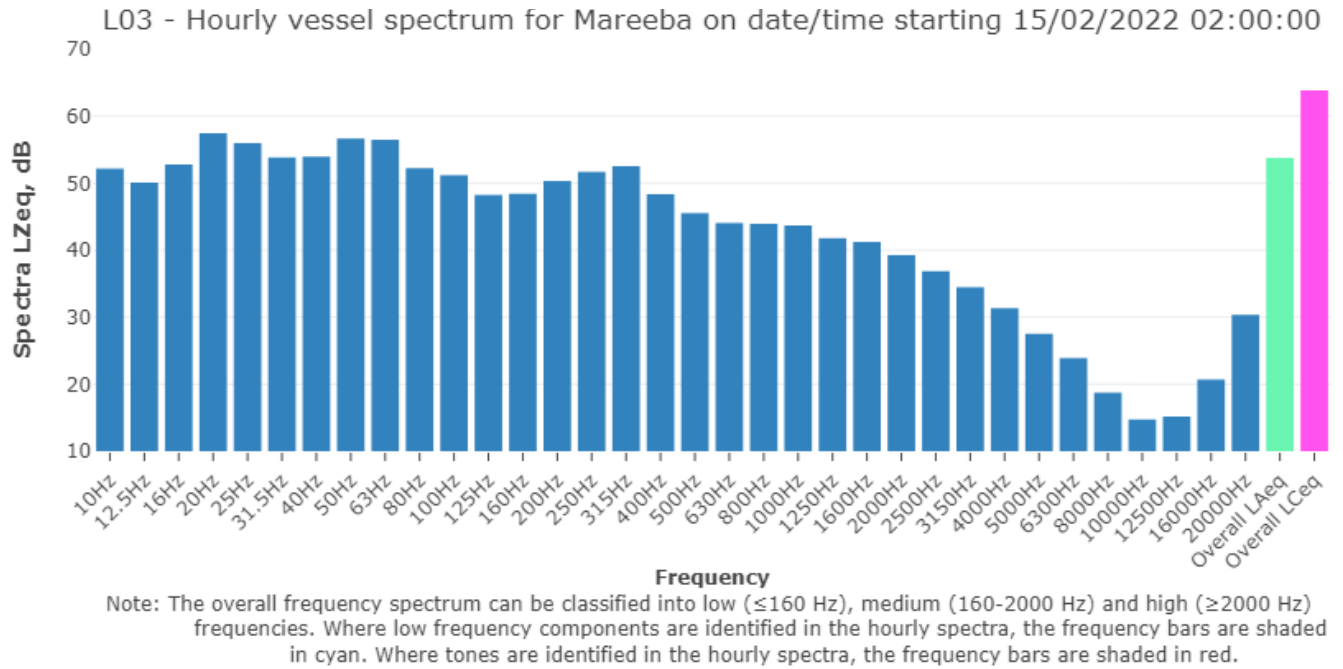


Figure 4.3 Typical vessel spectrum – noise level at L03

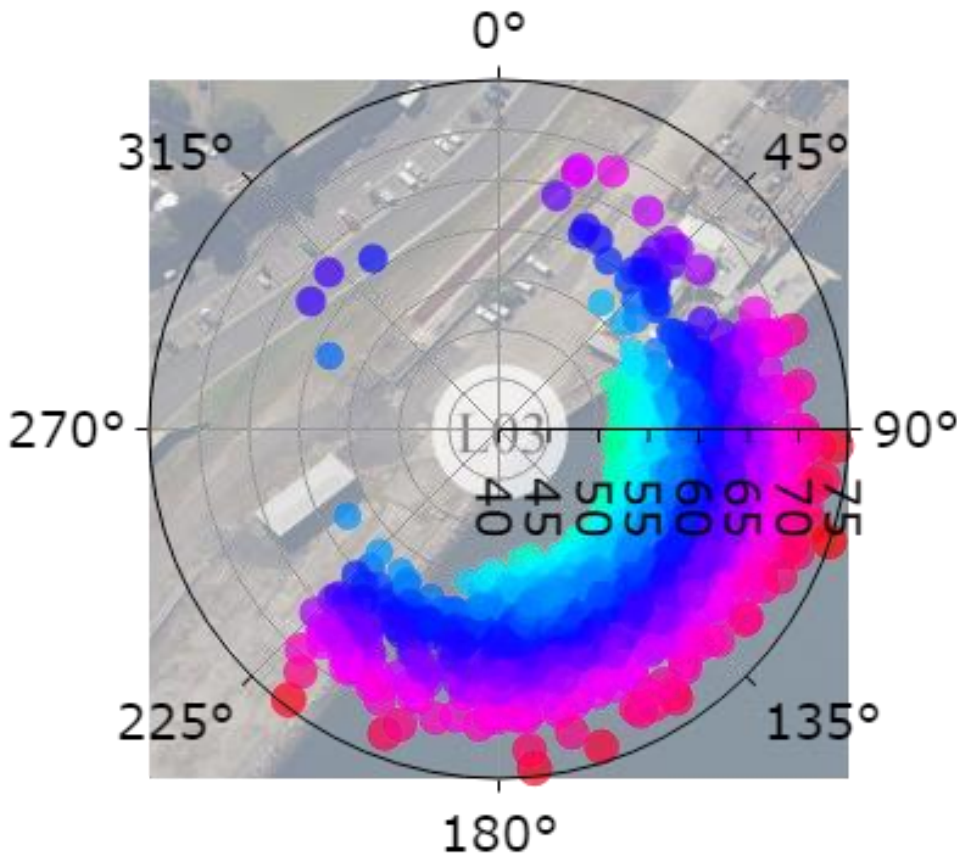


Figure 4.4 Typical vessel polar (directional) plot



ghd.com

→ **The Power of Commitment**