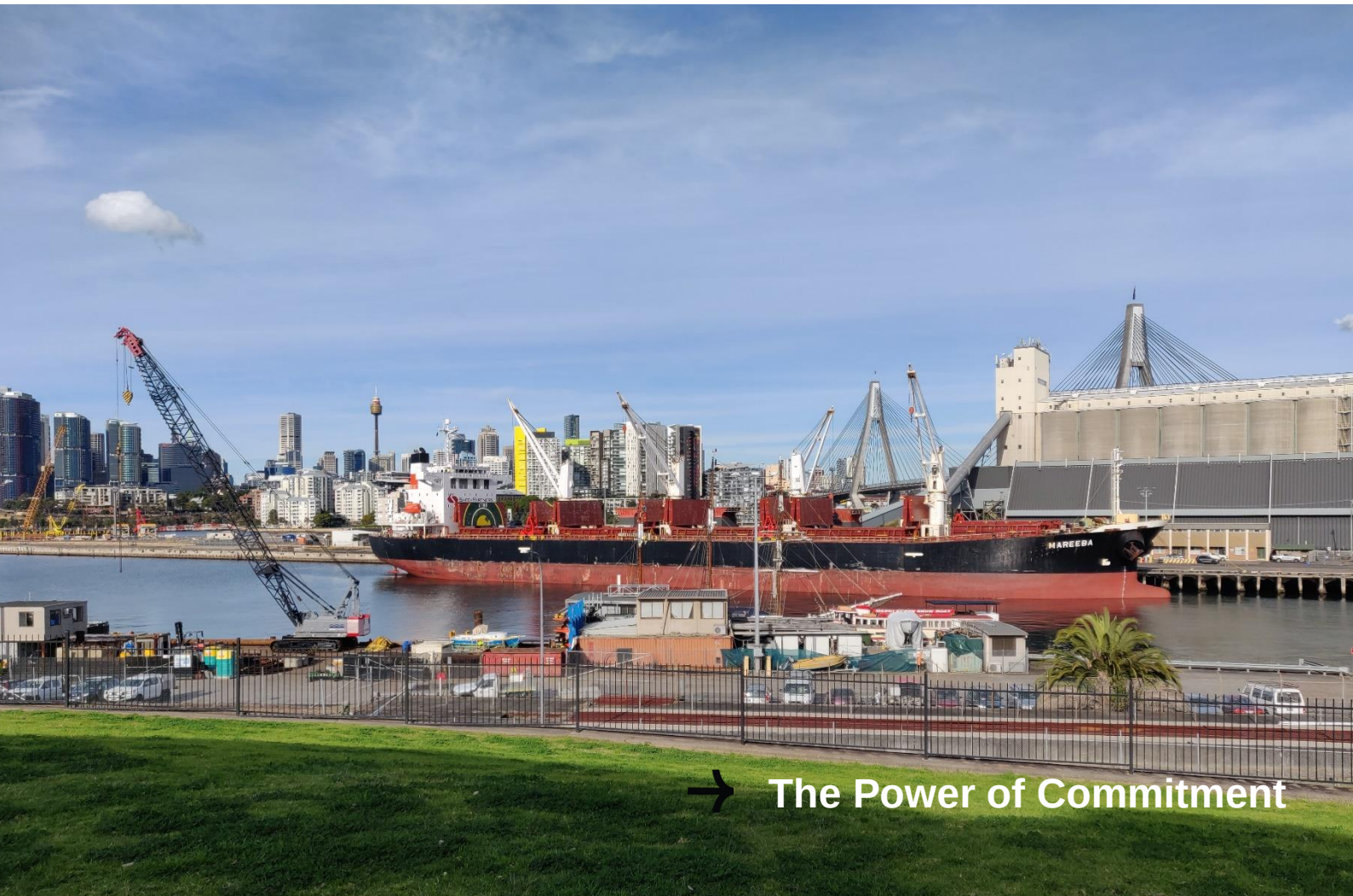
Monthly compliance noise monitoring report

Glebe Island / White Bay

Port Authority of New South Wales

July 2024



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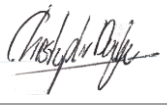
S4	0	C Gordon	C Doyle		E Milton		29/08/2024
S4	1	C Gordon	C Doyle		E Milton		06/09/2024

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 July 2024, 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 **Meter settings** A-weighted Fast time response 15 minute intervals	14529646	**Initial calibration level 90.7 dBA** Min. deviation = 0.0 dB Max. deviation = 0.1 dB
		L02	Maintenance Building on White Bay		14529643	**Initial calibration level 91.9 dBA** Min. deviation = 0.2 dB Max. deviation = 0.3 dB
		L03	Adjacent to White Bay 2		14529645	**Initial calibration level 92.5 dBA** Min. deviation = 0.1 dB Max. deviation = 0.2 dB
		L04	Onsite at Glebe Island		14529640	**Initial calibration level 93.9 dBA** Min. deviation = -0.1 dB Max. deviation = 0 dB

Vessel name	Arrival date and time	Departure date and time	Berth location	Applicable noise monitoring location/s
Bulk vessels				
CSL Reliance	July 10, 2024 / 23:41	July 14, 2024 / 17:53	GLB7	L03
Akuna	July 19, 2024 / 19:28	July 22, 2024 / 20:56	GLB8	L03

Vessel name	Arrival date and time	Departure date and time	Berth location	Applicable noise monitoring location/s
Cruise vessels				
Pacific Adventure	July 1, 2024 / 06:42	July 1, 2024 / 18:07	WBCT	L01
Pacific Explorer	July 4, 2024 / 7:11	July 4, 2024 / 16:39	WBCT	L01
Pacific Adventure	July 5, 2024 / 06:48	July 5, 2024 / 16:02	WBCT	L01
Research vessels				
Ocean Surveyor	July 11, 2024 / 10:31	July 22, 2024 / 07:46	WHT4	L01/L02
Salt ships				
Deniz	July 24, 2024 / 08:04	August 25, 2024 / 15:01	GLB1	Attended noise monitoring[3]

Note: 1) The Akuna visit between June 30 and July 2 was reported in the June 20204 monthly report.

Note: 2) Currently the permanent noise monitoring system does not allow for the measurement of vessels at Glebe Island 1 berth. As such, attended noise monitoring of the Deniz was conducted to assess compliance. A detailed report was prepared for this visit and is available on the Port Authority website, https://www.portauthoritynsw.com.au/media/amdfxlis/deniz-noise-monitoring_24-07-2024.pdf. Summary results of the noise monitoring is provided in Section 3.1 of this report.

3. Compliance summary

3.1 Bulk, research and salt vessels

Vessel	Dates at berth	Monitor location	Vessel Noise Level, dBA (inclusive of any modifying factor penalties)			Vessel Noise Trigger Levels, dBA			Compliance[1]	
			Day $L_{Aeq(15\ hr)}$	Night $L_{Aeq(1\ hr)}$	Night L_{Amax}	Day[2] $L_{Aeq(15\ hr)}$	Night $L_{Aeq(1\ hr)}$	Night L_{Amax}	Day	Night
CSL Reliance	July 10 – July 14	L03	52	49	67[4]	60	55	65	Yes	No[4]
Akuna	July 19 – July 22	L03	53	48	63	60	55	65	Yes	Yes
Ocean Surveyor	July 11 – July 22	L01/L02[5]	See discussion in Section 4.3			60	55	65	Yes	Yes
Deniz	July 24 – August 3	Attended	57	52	No max level events	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) – loudest 1 hour period

Note: 4) This maximum noise level event occurred at 11:31 pm on July 13. No other events above the L_{Amax} criteria of 65 dBA were identified. It was not definitive whether this noise was associated with the vessel, however given it only occurred once and only a 2 dB above the maximum noise trigger level, this is not considered an adverse impact. The vessel was compliant with the night time vessel noise trigger level at all other times.

Note: 5) Vessel noise levels were manually processed for the Ocean Surveyor. Due to low noise levels it wasn't possible to determine a specific vessel noise level, however it was confirmed that the vessel was compliant with the vessel noise trigger level. See Section 4.3 for a detailed explanation.

3.2 Cruise vessels

Vessel	Dates at berth	Monitor location	Vessel Noise Level, dBA (inclusive of any modifying factor penalties)		Vessel Noise Trigger Levels, dBA		Compliance1	
			Day[2] $L_{Aeq(15\ hr)}$	Night[3] $L_{Aeq(9\ hr)}$	Day[2] $L_{Aeq(15\ hr)}$	Night[3] $L_{Aeq(9\ hr)}$	Day[4]	Night
Pacific Adventure	July 1	L01	59	-	N/A	58	N/A	-[5]
Pacific Explorer	July 4	L01	57	-	N/A	58	N/A	-
Pacific Adventure	July 5	L01	60	-	N/A	58	N/A	-[5]

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) – 9 hour logarithmic average

Note: 4) Port Authority provides attenuation to a defined area of residences where noise modelling indicates that current noise levels reach or exceed 55 dBA **at night** ('attenuation eligibility trigger'). Under the White Bay Cruise Terminal Noise Restriction Policy, cruise ship noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger is considered to be Excessive Noise. Hence under the Noise Restriction Policy a day time trigger level does not apply. The area of residences currently offered attenuation (ie meeting the 'attenuation eligibility trigger') is based on a reference cruise vessel intrusive noise level of 58 dBA at the nearest residence, which sets the Vessel Noise Trigger Level for assessing compliance at night.

Excessive noise is defined as "any noise including but not limited to engine, generator or ventilation noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger."

Note: 5) The Pacific Adventure only arrived approximately 15 minutes prior to 7 am, therefore a night-time noise level has not been provided.

4. Detailed results – bulk and research vessels

4.1 CSL Reliance (GLB7) – July 10 – Jul 14, 2024

4.1.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
July 10, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	-	-	-	60	-
	Night		$L_{Aeq,\ 1\ hour}$[1]	49	No	Yes	55	Yes
			L_{Amax}	64	-	-	65	Yes
July 11, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	49	No	Yes	55	Yes
			L_{Amax}	63	-	-	65	Yes
July 12, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	48	No	Yes	55	Yes
			L_{Amax}	65	-	-	65	Yes
July 13, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	47	No	Yes	55	Yes
			L_{Amax}	67[4]	-	-	65	No[4]
July 14, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	48	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	-	-	-	55	-
			L_{Amax}	-	-	-	65	-

Notes

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

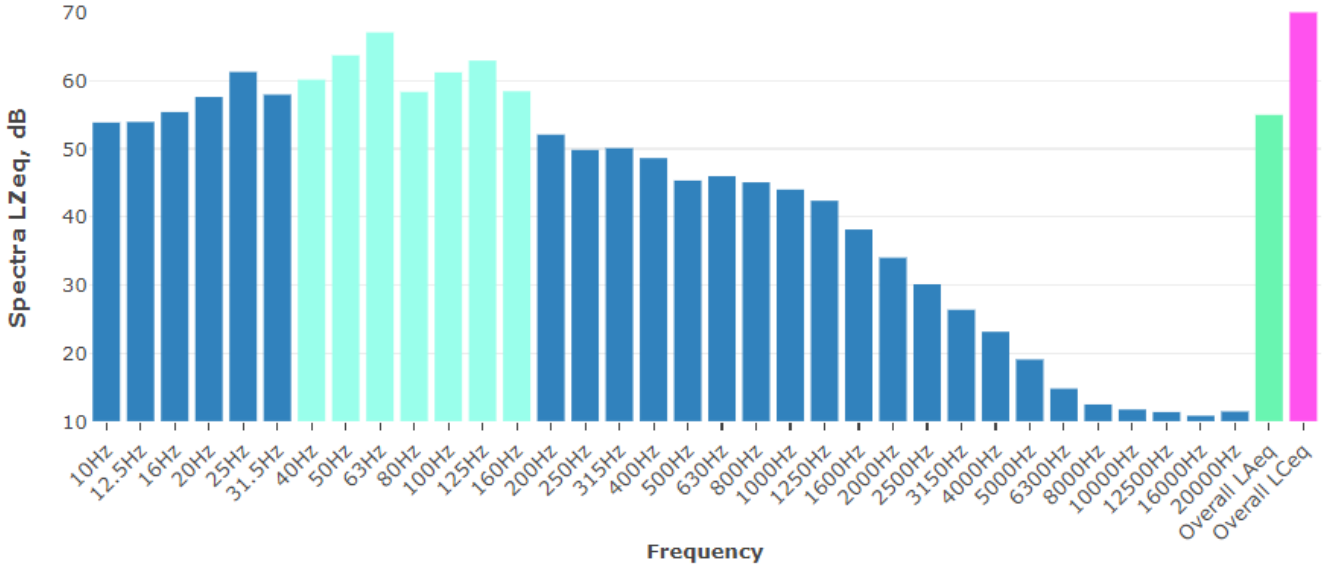
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) This maximum noise level event occurred at 11:31 pm on July 13. No other events above the L_{Amax} criteria of 65 dBA were identified. It was not definitive whether this noise was associated with the vessel, however given it only occurred once and only a 2 dB above the maximum noise trigger level, this is not considered an adverse impact. The vessel was compliant with the night time vessel noise trigger level at all other times.

4.1.2 Additional information



Note: The overall frequency spectrum can be classified into low (≤160 Hz), medium (160-2000 Hz) and high (≥2000 Hz) frequencies. Where low frequency components are identified in the hourly spectra, the frequency bars are shaded in cyan. Where tones are identified in the hourly spectra, the frequency bars are shaded in red.

Figure 4.1 Typical vessel spectrum – noise level at L03

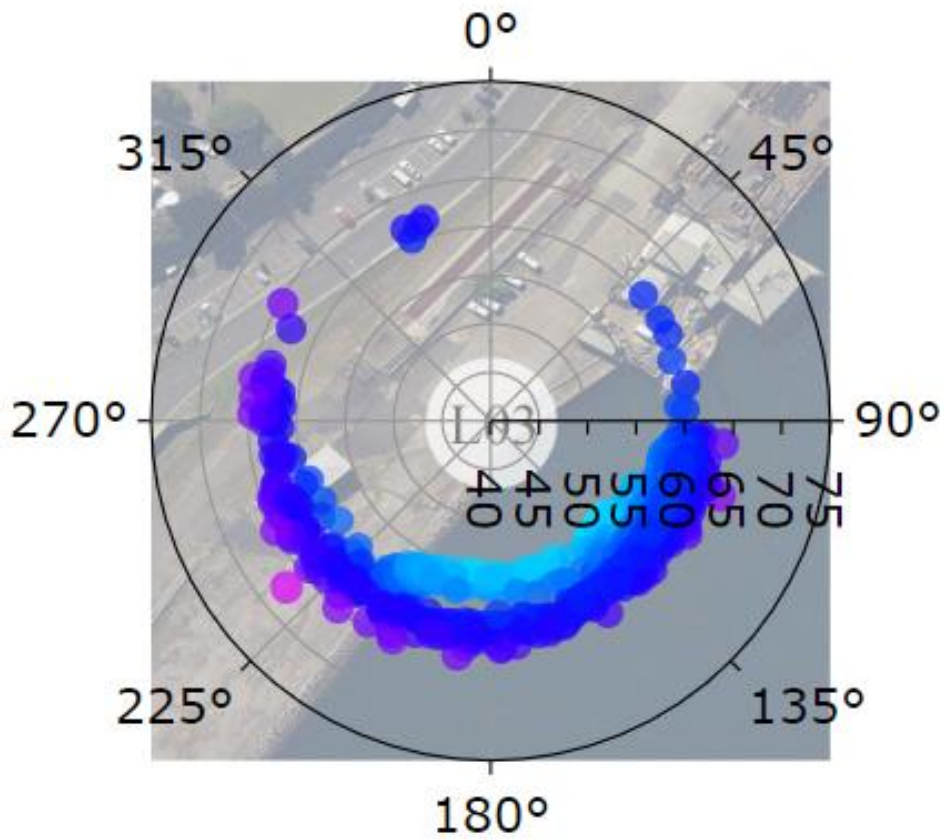


Figure 4.2 Typical vessel polar (directional) plot

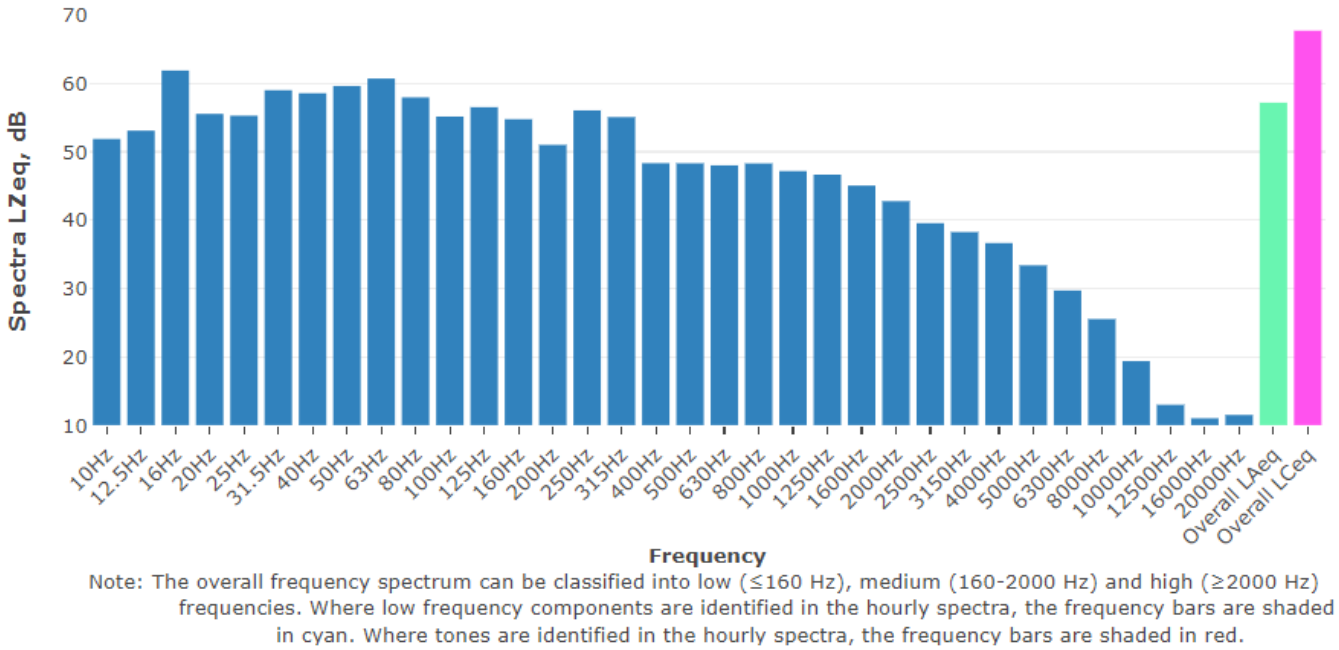
4.2 Akuna (GLB8) – July 19 – July 22, 2024

4.2.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
July 19, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	49	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	47	No	Yes	55	Yes
			L_{Amax}	63	-	-	65	Yes
July 20, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	49	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	47	No	Yes	55	Yes
			L_{Amax}	62	-	-	65	Yes
July 21, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	51	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	48	No	No	55	Yes
			L_{Amax}	58	-	-	65	Yes
July 22, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	53	No	No	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	-	No	No	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

4.2.2 Additional information



Note: The overall frequency spectrum can be classified into low (≤160 Hz), medium (160-2000 Hz) and high (≥2000 Hz) frequencies. Where low frequency components are identified in the hourly spectra, the frequency bars are shaded in cyan. Where tones are identified in the hourly spectra, the frequency bars are shaded in red.

Figure 4.3 *Typical vessel spectrum – noise level at L03*

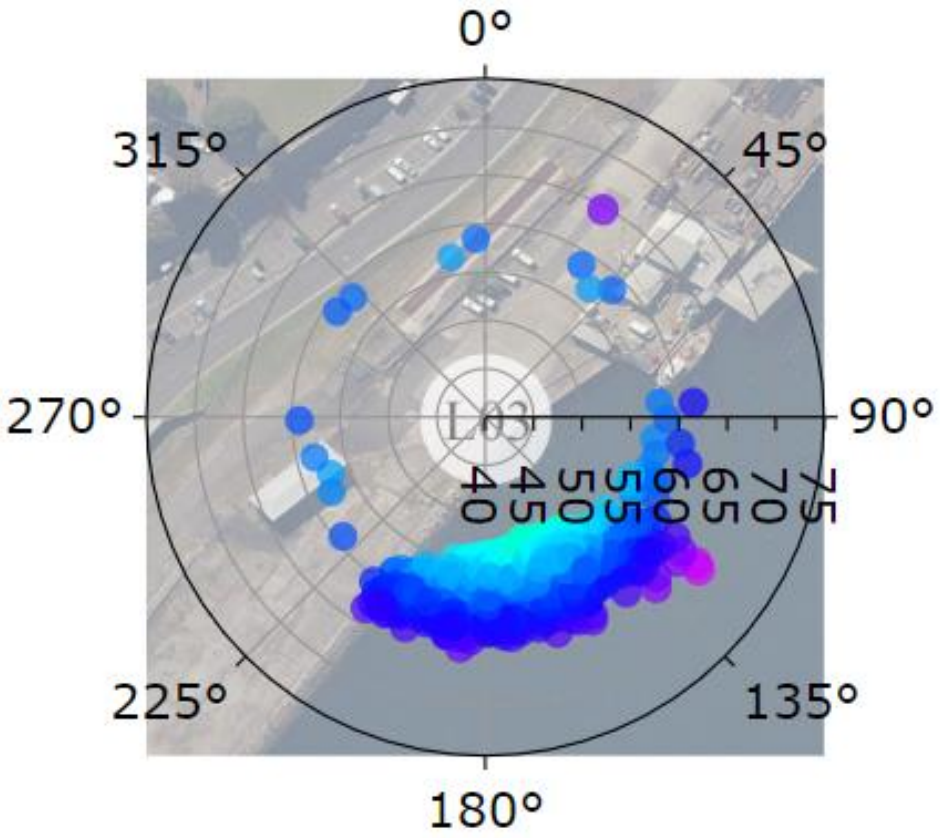


Figure 4.4 Typical vessel polar (directional) plot

4.3 Ocean Surveyor (WHT4) – July 11 – July 22, 2024

The Ocean Surveyor was in berth at White Bay 4 between July 11 and July 22, 2024.

As this was not a typical bulk vessel which the noise monitoring system is automated to measure, the noise levels of the Ocean Surveyor were manually obtained via the raw data.

Given its location at White Bay 4, data from L01 and L02 were used to determine noise levels, with a focus on noise levels at L01 due to extraneous noise and other vessel noise impacts at L02.

A review of the data indicated that noise levels were typically low, especially during the night time period, with noise levels at L01 ranging from approximately 38 dBA to 44 dBA during the night period. Noise levels increased during the day, however given the low noise emission from the Ocean Surveyor, this was likely due to the ambient noise in the area.

To confirm this assumption, a review of data was undertaken for a period where there a vessel was not present. It was determined that ambient noise levels without a vessel present were not dissimilar to the data during the Ocean Surveyor's visit.

In addition, while on site, it was noted that there were no audible noise emissions from the vessel, indicating that the engines were likely to be off or running at low power.

Given the low noise levels in comparison to general ambient noise, it wasn't possible to determine a noise level for the vessel, however it can be stated that the vessel was compliant with the vessel noise trigger levels.

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