



# Monthly compliance noise monitoring report

**Glebe Island / White Bay**

Port Authority of New South Wales

August 2024



→ The Power of Commitment

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<b>Document title</b>	Monthly compliance noise monitoring report – August 2024
<b>Revision version</b>	Rev 1
<b>Project number</b>	12540862

**Document status**

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	C Gordon	C Doyle		E Milton		06/09/2024
S4	1	C Gordon	C Doyle		E Milton		30/09/2024

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# 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 August 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	<b>Meter details</b> Norsonic Nor145 Sound Level Meter with Nor1297 Noise Compass  <b>Meter settings</b> A-weighted Fast time response 15 minute intervals	14529646	<b>Initial calibration level 90.7 dBA</b> Min. deviation = 0.0 dB Max. deviation = 0.2 dB
		L02	Maintenance Building on White Bay		14529643	<b>Initial calibration level 91.9 dBA</b> Min. deviation = 0.3 dB Max. deviation = 0.3 dB
		L03	Adjacent to White Bay 2		14529645	<b>Initial calibration level 92.5 dBA</b> Min. deviation = 0.2 dB Max. deviation = 0.3 dB
		L04	Onsite at Glebe Island		14529640	<b>Initial calibration level 93.9 dBA</b> 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	
<b>Bulk vessels</b>						
Pioneer <sup>1</sup>	August 6, 2024 / 01:07	August 9, 2024 / 18:01		GLB7 / WHT4	L03 / L02	
Akuna	August 8, 2024 / 22:45	August 12, 2024 / 14:19		GLB8	L03	

Vessel name	Arrival date and time	Departure date and time	Berth location	Applicable noise monitoring location/s
Elanora	August 9, 2024 / 23:27	August 12, 2024 / 12:24	GLB7	L03
Wyuna	August 14, 2024 / 21:34	August 16, 2024 / 20:58	GLB8	L03
Elanora <sup>2</sup>	August 23, 2024 / 21:41	August 28, 2024 / 22:05	GLB7 / WHT 4	L03 / L02
Wyuna	August 27, 2024 / 00:38	August 29, 2024 / 00:09	GLB8	L03
<b>Research vessels</b>				
Ocean Surveyor	August 12, 2024 / 15:54	August 16, 2024 / 08:58	WHT4	L01/L02
<b>Salt ships</b>				
Deniz <sup>3</sup>	July 24, 2024 / 08:04	August 25, 2024 / 15:01	GLB1	Attended noise monitoring
<b>Cruise vessel</b>				
There were no cruise vessels during August 2024				

Note: 1) On 08/08/2024 at 11:57, Pioneer moved from GLB7 to WHT4. Then, it went back to GLB7 on 09/08/2024 at 00:05.

Note: 2) On 26/08/2024 at 16:36, Elanora moved from GLB7 to WHT4. Then, it went back to GLB7 on 27/08/2024 at 07:48.

Note: 3) The details of this visit are provided in the July 2024 monthly report and the monitoring report located on the Port Authority website: [https://www.portauthoritynsw.com.au/media/amdfxlis/deniz-noise-monitoring\\_24-07-2024.pdf](https://www.portauthoritynsw.com.au/media/amdfxlis/deniz-noise-monitoring_24-07-2024.pdf).

## 3. Compliance summary

### 3.1 Bulk, research vessels

Vessel	Dates at berth	Monitor location	Vessel Noise Level, dBA (inclusive of any modifying factor penalties)			Vessel Noise Trigger Levels, dBA			Compliance <sup>1</sup>	
			Day $L_{Aeq}(15\text{ hr})$	Night $L_{Aeq}(1\text{ hr})$	Night $L_{Amax}$	Day <sup>2</sup> $L_{Aeq}(15\text{ hr})$	Night $L_{Aeq}(1\text{ hr})$	Night $L_{Amax}$	Day	Night
Pioneer (GLB7)	Aug 6 – Aug 9	L03	51	51	62	60	55	65	Yes	Yes
Pioneer (WHT4)	Aug 8 – Aug 9	L01/L02	55	55	62	60	55	65	Yes	Yes
Akuna	Aug 8 – Aug 12	L03	56	53	67 <sup>4</sup>	60	55	65	Yes	No <sup>4</sup>
Elanora	Aug 9 – Aug 12	L03	<p>Elanora and Akuna were berthed simultaneously at Glebe Island 7 and 8. Noise levels were assigned to the Akuna during this period.</p> <p>Note that noise from both vessels was compliant with the daytime <math>L_{Aeq}(15\text{ hour})</math> and the night <math>L_{Aeq}(1\text{hour})</math> criteria, therefore no further analysis has been undertaken related to this. Results for this period are presented in Section 4.3 and noted in the row above.</p> <p>There were some minor non-compliances with the <math>L_{Amax}</math> criteria, being 67 dBA on 9 August and 66 dBA on 11 August. The <math>L_{Amax}</math> criteria was compliant at all other times. This is discussed in Section 4.3 and noted in the row above.</p>							
Ocean Surveyor	Aug 12 – Aug 16	L01/L02 <sup>6</sup>	See discussion in Section 4.9			60	55	65	Yes	Yes
Wyuna	Aug 14 – Aug 16	L03	55	52	69 <sup>5</sup>	60	55	65	Yes	No <sup>5</sup>
Elanora (GLB7)	Aug 23 – Aug 28	L03	51	54	65	60	55	65	Yes	Yes
Elanora (WHT4)	Aug 27 – Aug 27	L01/L02	51	53	65	60	55	65	Yes	Yes
Wyuna	Aug 27 – Aug 29	L03	55	54	65	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 level event only occurred once during the entire night time period. 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 that this maximum noise level event may have been associated with either the Akuna or Elanora, which were berthed simultaneously.

Note: 5) There were two events of non-compliance with the  $L_{Amax}$  trigger during the night-time period during this visit, being 66 dBA on 14 August and 69 dBA on 15 August. The vessel was compliant with the night time vessel noise trigger level at all other times.

Note: 6) 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 4.9 for a detailed explanation.

## 4. Detailed results – bulk and research salt vessels

### 4.1 Pioneer (GLB7) – August 6 – August 9, 2024

#### 4.1.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 5, 2024 <sup>5</sup>	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	-	No	Yes	60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	51	No	Yes	55	Yes
			L <sub>Amax</sub>	62	-	-	65	Yes
August 6, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	51	No	No	60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	51	No	No	55	Yes
			L <sub>Amax</sub>	62	-	-	65	Yes
August 7, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	51	No	No	60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	51	No	No	55	Yes
			L <sub>Amax</sub>	59	-	-	65	Yes
August 8, 2024 <sup>5</sup>	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	51	No		60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	On 08/08/2024 at 11:57, Pioneer moved from GLB7 to WHT4. Then, it went back to GLB7 on 09/08/2024 at 00:25. Data for this period is provided in Section 4.2				
			L <sub>Amax</sub>					
August 9, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	Pioneer and Akuna were berthed simultaneously at Glebe Island 7 and 8. Noise levels determined by the online noise system were assigned to the Akuna during this period, as this was the dominant noise source at the time. Note that noise from both vessels was compliant, therefore no further analysis has been undertaken. Results for this period are presented in Section 4.3 below.				
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>					
			L <sub>Amax</sub>					

#### Notes

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

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

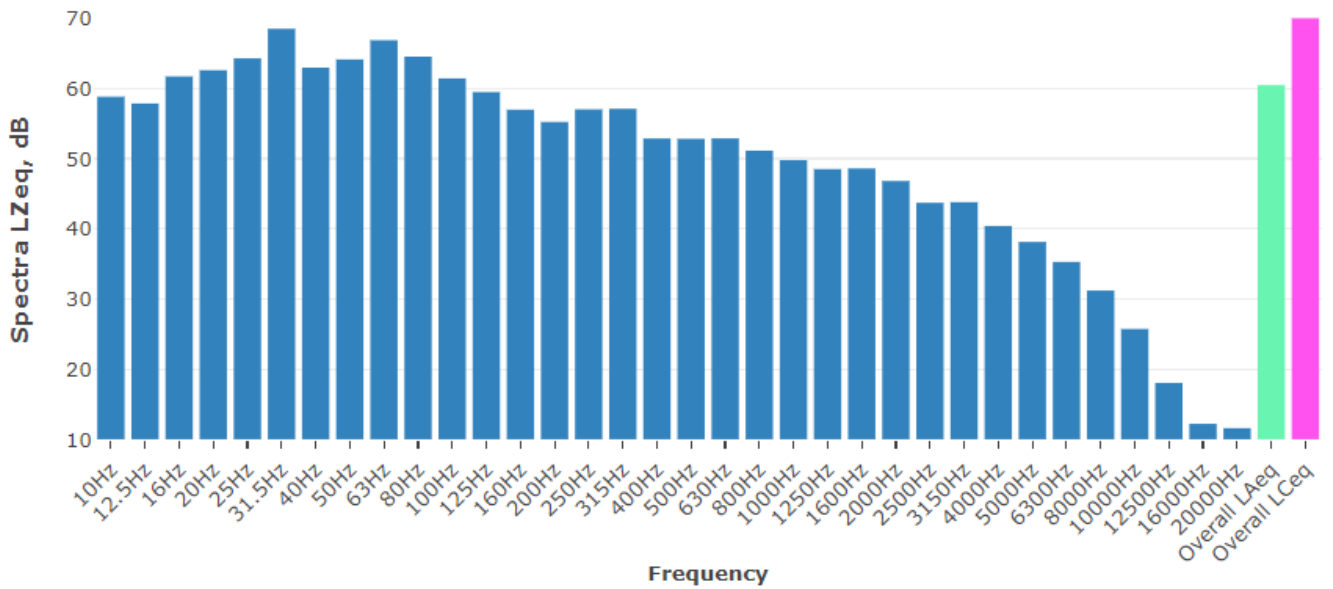
2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) Note that the system classifies August 5 as the period from 7 am on August 5 to 7 am on August 6. The Pioneer arrived at 1:07 am on August 6, and has been incorporated in the data for August 5.

5) On 08/08/2024 at 11:57, Pioneer moved from GLB7 to WHT4. Then, it went back to GLB7 on 09/08/2024 at 00:25. Data for this period is provided in Section 4.2

## 4.1.2 Additional information



Note: The overall frequency spectrum can be classified into low ( $\leq 160$  Hz), medium (160-2000 Hz) and high ( $\geq 2000$  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

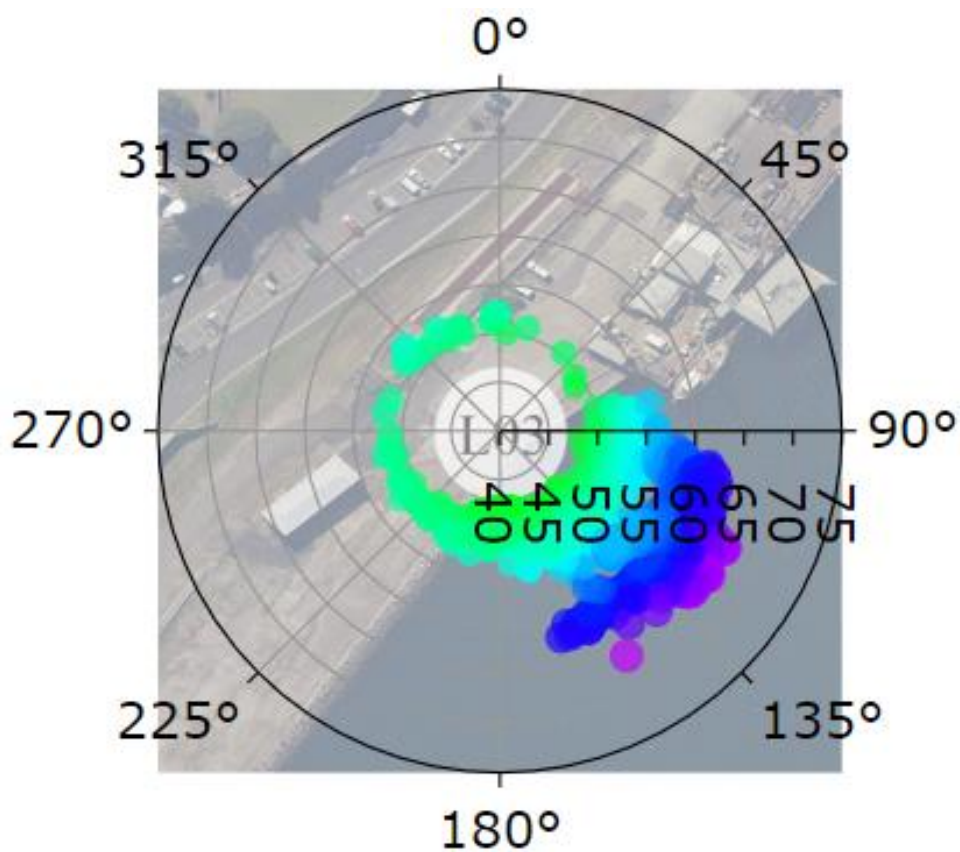


Figure 4.2 Typical vessel polar (directional) plot

## 4.2 Pioneer (WHT4) – August 8 – August 9, 2024

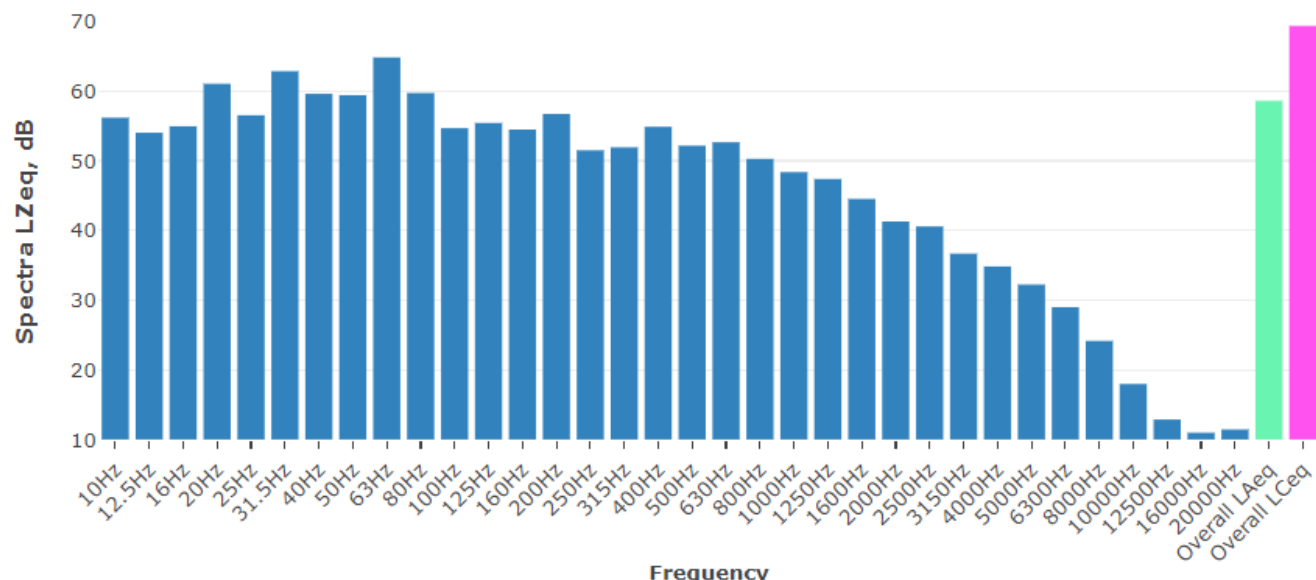
### 4.2.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 8, 2024 <sup>4,5</sup>	Day	L02	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	55	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	55	No	No	55	Yes
			L <sub>Amax</sub>	62	-	-	65	Yes

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) Note that the system classifies August 8 as the period from 7 am on August 8 to 7 am on August 9. The Pioneer departed White Bay 4 at 00:25 am on August 9, and has been incorporated in the data for August 8.
- 5) On 08/08/2024 at 11:57, Pioneer moved from GLB7 to WHT4. Then, it went back to GLB7 on 09/08/2024 at 00:25

### 4.2.2 Additional information



Note: The overall frequency spectrum can be classified into low ( $\leq 160$  Hz), medium (160-2000 Hz) and high ( $\geq 2000$  Hz) frequencies. Where low frequency components are identified in the hourly spectra, the frequency bars are shade 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



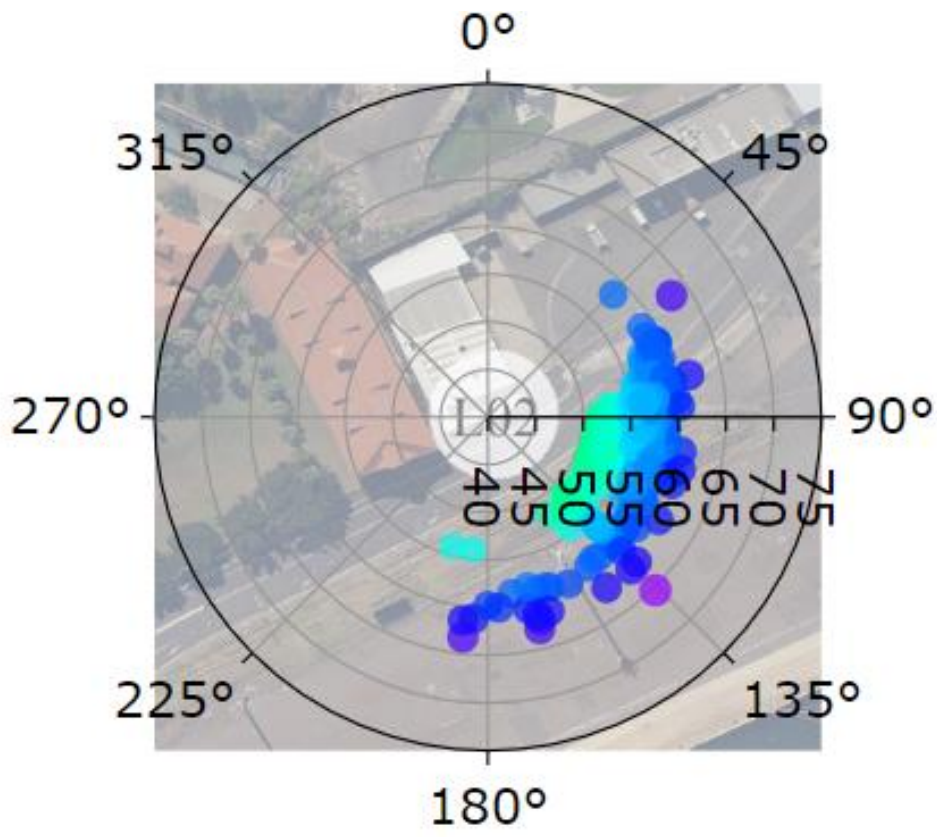


Figure 4.4 Typical vessel polar (directional) plot

## 4.3 Akuna (GLB8) – August 8 – August 12, 2024

### 4.3.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 8, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	-	-	-	60	-
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	53	No	Yes	55	Yes
			L <sub>Amax</sub>	65	-	-	65	Yes
August 9, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	53	No	Yes	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	51	No	Yes	55	Yes
			L <sub>Amax</sub>	67 <sup>4</sup>	-	-	65	No <sup>4</sup>
August 10, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	54	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	53	No	No	55	Yes
			L <sub>Amax</sub>	59	-	-	65	Yes
August 11, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	52	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	52	No	No	55	Yes
			L <sub>Amax</sub>	66 <sup>5</sup>	-	-	65	No <sup>5</sup>
August 12, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	56	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	-	No	No	55	-
			L <sub>Amax</sub>	-	-	-	65	-

#### Notes

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

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

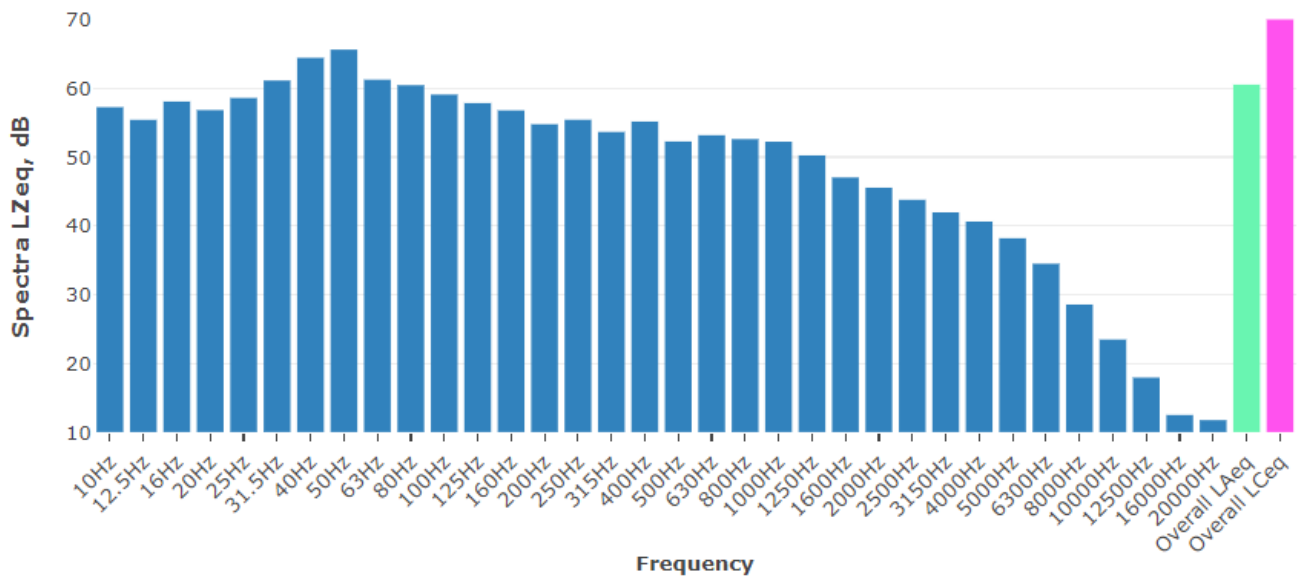
2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) This maximum level event only occurred once during the entire night time period. 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 during the night of August 9, 2024.

5) This maximum level event only occurred once during the entire night time period. Given it only occurred once and only a 1 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 during the night of August 11, 2024.

### 4.3.2 Additional information



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

Figure 4.5 Typical vessel spectrum – noise level at L03

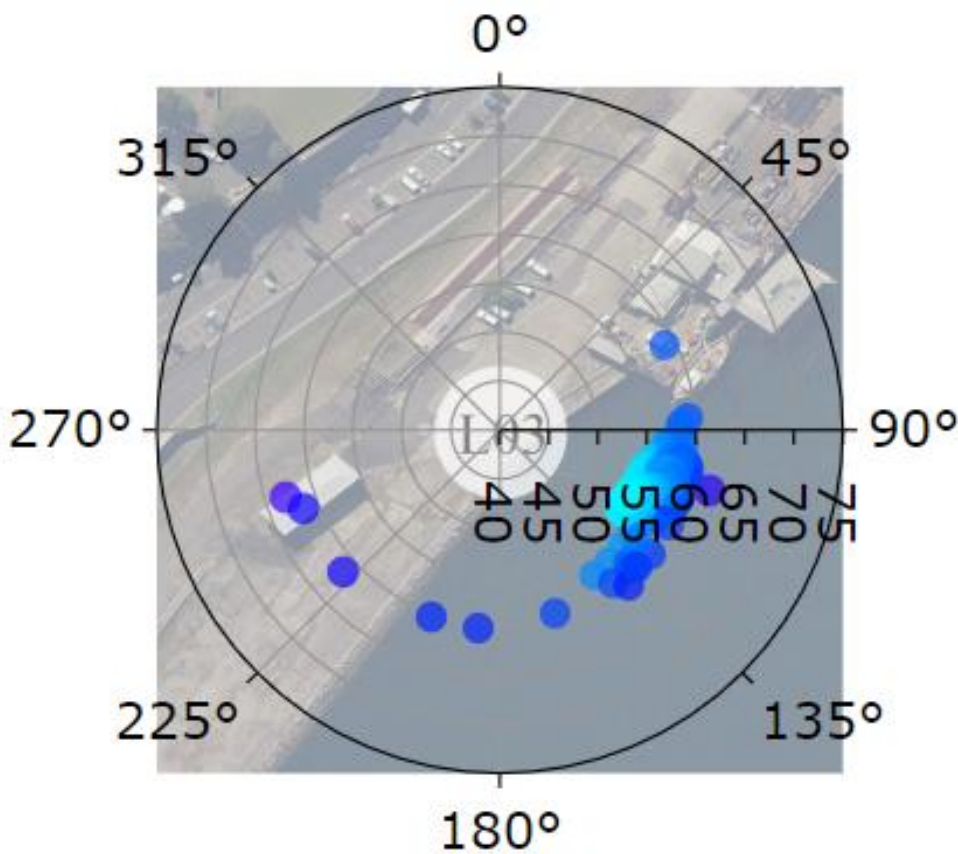


Figure 4.6 Typical vessel polar (directional) plot

## 4.4 Elanora (GLB7) – August 9 – August 12, 2024

### 4.4.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 9, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	<p>Elanora and Akuna were berthed simultaneously at Glebe Island 7 and 8. Noise levels determined by the online noise system were assigned to the Akuna during this period, as this was the dominant noise source at the time. Note that noise from both vessels was compliant with the daytime L<sub>Aeq (15 hour)</sub> and the night L<sub>Aeq (1hour)</sub> criteria, therefore no further analysis has been undertaken related to this. Results for this period are presented in Section 4.3.</p> <p>There were some minor non-compliances with the L<sub>Amax</sub> criteria, being 67 dBA on 9 August and 66 dBA on 11 August. The L<sub>Amax</sub> criteria was compliant at all other times. This is discussed in Section 4.3.</p>				
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>					
			L <sub>Amax</sub>					
August 10, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>					
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>					
			L <sub>Amax</sub>					
August 11, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>					
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>					
			L <sub>Amax</sub>					
August 12, 2024	Day	L03	L <sub>Aeq, 15 hour</sub> <sup>1</sup>					
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>					
			L <sub>Amax</sub>					
<p>Notes</p> <p>1) Daytime period (7 am to 10 pm) – 15 hours  Night-time period (10 pm to 7 am) – worst case 1 hour</p> <p>2) Inclusive of any penalties for modifying factors</p> <p>3) LFN = Low Frequency Noise</p>								

## 4.5 Wyuna (GLB8) – August 14 – August 16, 2024

### 4.5.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 14, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>		-	-	60	-
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	52	No	No	55	Yes
			L <sub>Amax</sub>	66 <sup>4</sup>	-	-	65	No <sup>4</sup>
August 15, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	55	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	51	No	No	55	Yes
			L <sub>Amax</sub>	69 <sup>5</sup>	-	-	65	No <sup>5</sup>
August 16, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	54	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	-	-	-	55	-
			L <sub>Amax</sub>	-	-	-	65	-

#### Notes

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

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

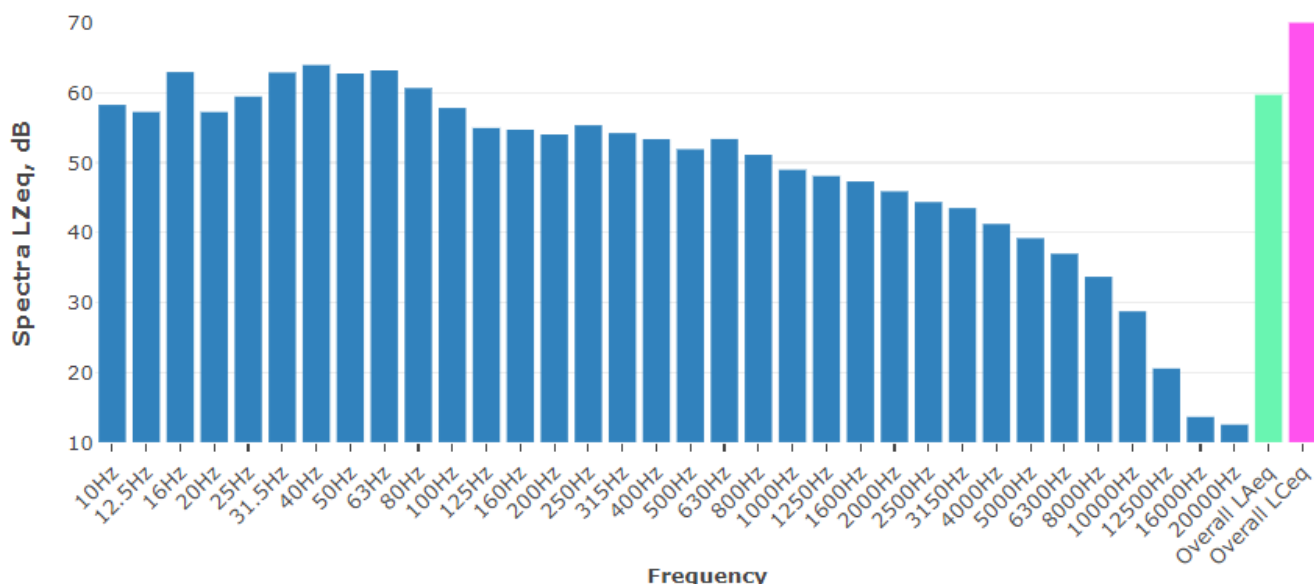
2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) This maximum level event only occurred once during the entire night time period. Given it only occurred once and only a 1 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, during the night of August 14, 2024.

5) This maximum level event only occurred once during the entire night time period. The vessel was compliant with the night time vessel noise trigger level at all other times, during the night of August 15, 2024.

### 4.5.2 Additional information



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

Figure 4.7 Typical vessel spectrum – noise level at L03

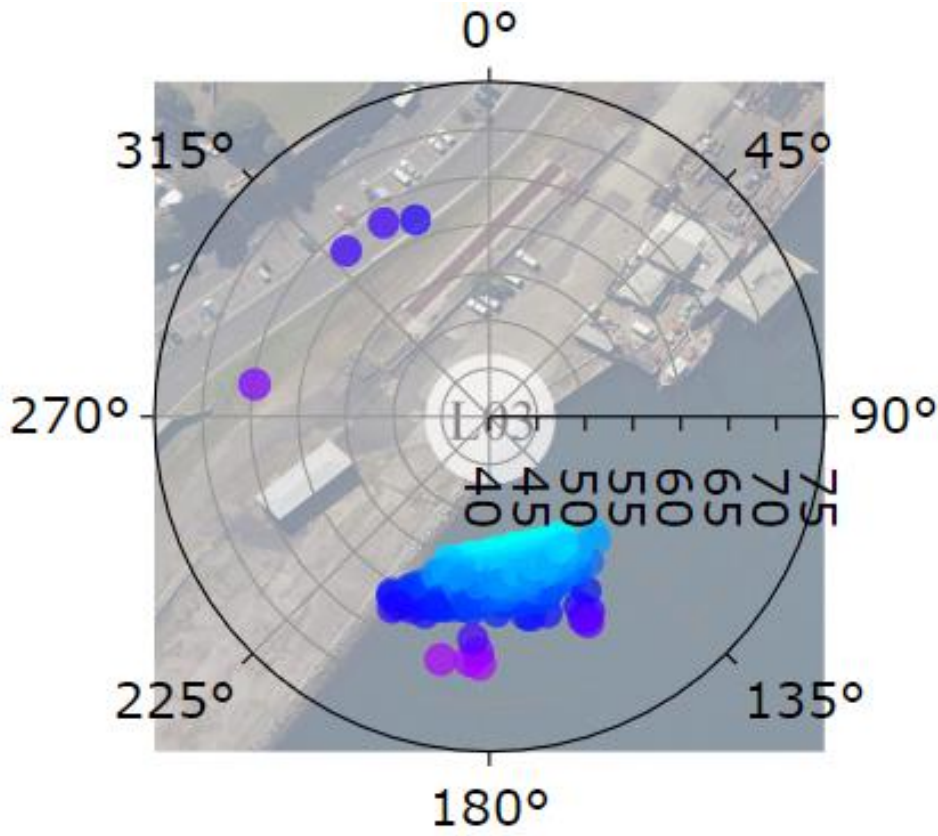


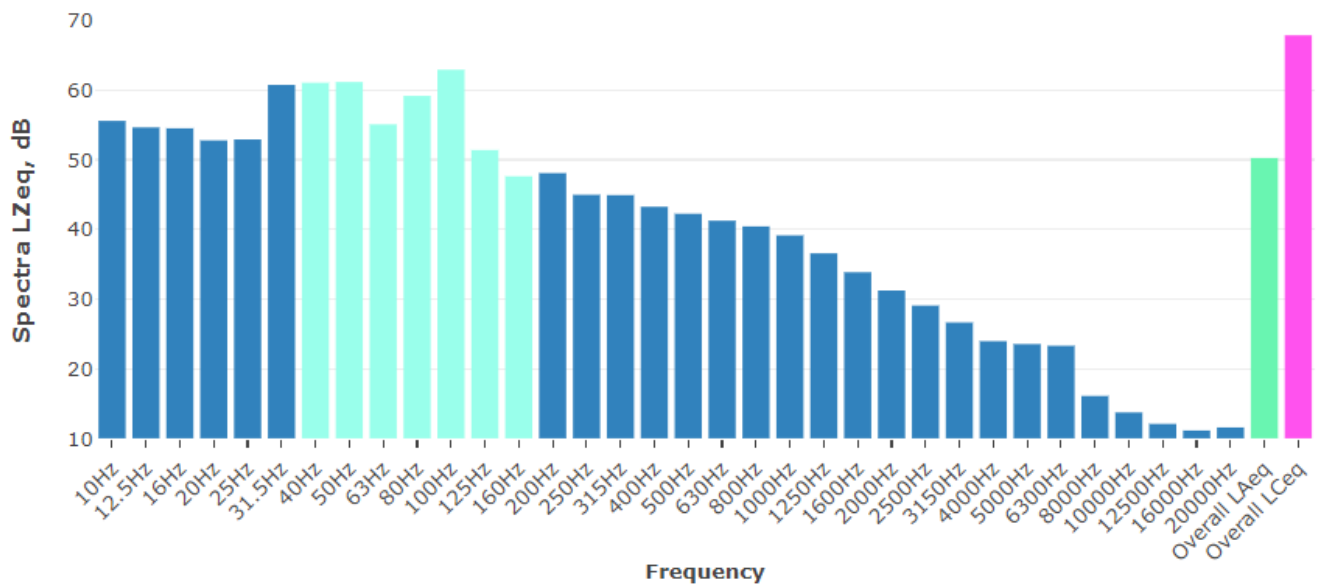
Figure 4.8 Typical vessel polar (directional) plot

## 4.6 Elanora (GLB7) – August 23 – August 28, 2024

### 4.6.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 23, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	-	-	-	60	-
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	54	No	No	55	Yes
			L <sub>Amax</sub>	65	-	-	65	Yes
August 24, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	51	No	Yes	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	52	No	No	55	Yes
			L <sub>Amax</sub>	62	-	-	65	Yes
August 25, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	48	No	Yes	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	54	No	Yes	55	Yes
			L <sub>Amax</sub>	60	-	-	65	Yes
August 26, 2024 <sup>4</sup>	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	51	No	Yes	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	On 26/08/2024 at 16:36, Elanora moved from GLB7 to WHT4. Then, it went back to GLB7 on 27/08/2024 at 07:48. Data for this period is provided in Section 4.7				
			L <sub>Amax</sub>					
August 27, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	Elanora and Wyuna were berthed simultaneously at Glebe Island 7 and 8. Noise levels determined by the online noise system were assigned to the Wyuna during this period, as this was the dominant noise source at the time.				
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>					
			L <sub>Amax</sub>					
August 28, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	Note that noise from both vessels was compliant, therefore no further analysis has been undertaken. Results for this period are presented in Section 4.8 below.				
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>					
			L <sub>Amax</sub>					
<b>Notes</b> 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) On 26/08/2024 at 16:36, Elanora moved from GLB7 to WHT4. Then, it went back to GLB7 on 27/08/2024 at 07:48								

## 4.6.2 Additional information



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

Figure 4.9 Typical vessel spectrum – noise level at L03

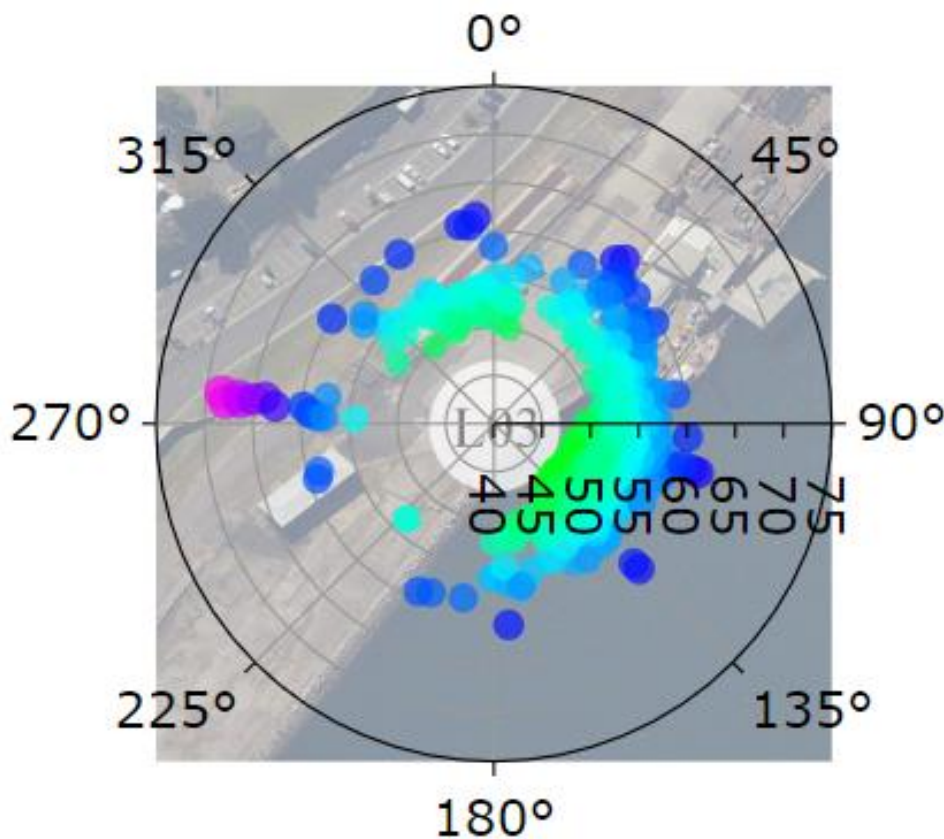


Figure 4.10 Typical vessel polar (directional) plot



## 4.7 Elanora (WHT4) – August 26 – August 27, 2024

### 4.7.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 26, 2024 <sup>4</sup>	Day	L02	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	49	No	No	60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	53	No	No	55	Yes
			L <sub>Amax</sub>	65 <sup>5</sup>	-	-	65	Yes
August 27, 2024 <sup>4</sup>	Day	L02	L <sub>Aeq, 15 hour</sub> <sup>1</sup>	51	No	No	60	Yes
	Night		L <sub>Aeq, 1 hour</sub> <sup>1</sup>	-	-	-	55	-
			L <sub>Amax</sub>	-	-	-	65	-

#### Notes

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

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

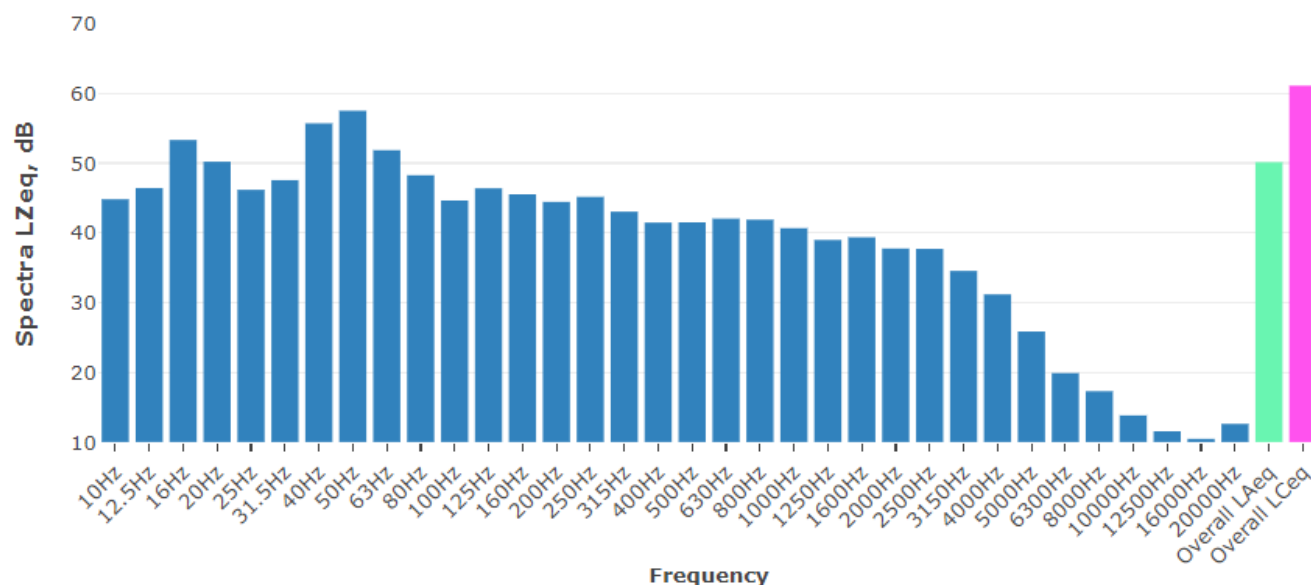
2) Inclusive of any penalties for modifying factors. Due to extraneous noise at L02, a review of the data has been undertaken. The LA90 value has been used to determine the noise emission from the vessel, as unloading activities would not be occurring at this berth and noise from the vessel would be steady state.

3) LFN = Low Frequency Noise

4) On 26/08/2024 at 16:36, Elanora moved from GLB7 to WHT4. Then, it went back to GLB7 on 27/08/2024 at 07:48

5) Although this maximum noise level is compliant with the trigger level, it is unlikely to be associated with the vessel as unloading activities would not be occurring at this berth.

### 4.7.2 Additional information



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

Figure 4.11 Typical vessel spectrum – noise level at L03

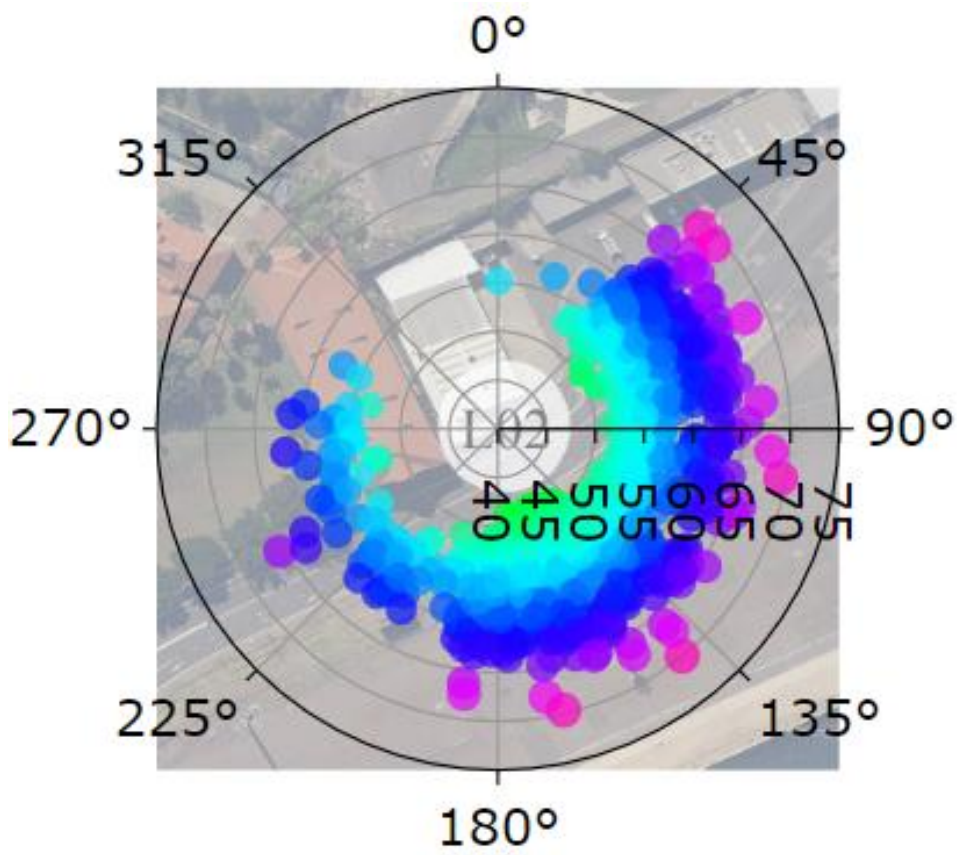


Figure 4.12 Typical vessel polar (directional) plot

## 4.8 Wyuna (GLB8) – August 27 – August 29, 2024

### 4.8.1 Daily noise monitoring results

Date	Time period <sup>1</sup>	Monitor location	Noise descriptor	Vessel noise level dBA <sup>2</sup>	Tonal	LFN <sup>3</sup>	Vessel Noise Trigger Levels, dBA	Compliance
August 26, 2024 <sup>4</sup>	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>		-	-	60	-
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	53	No	Yes	55	Yes
			L <sub>Amax</sub>	63	-	-	65	Yes
August 27, 2024	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	55	No	No	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	51	No	No	55	Yes
			L <sub>Amax</sub>	65	-	-	65	Yes
August 28, 2024 <sup>5</sup>	Day	L03	L <sub>Aeq</sub> , 15 hour <sup>1</sup>	53	No	Yes	60	Yes
	Night		L <sub>Aeq</sub> , 1 hour <sup>1</sup>	54	No	Yes	55	Yes
			L <sub>Amax</sub>	59	-	-	65	-

#### Notes

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

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

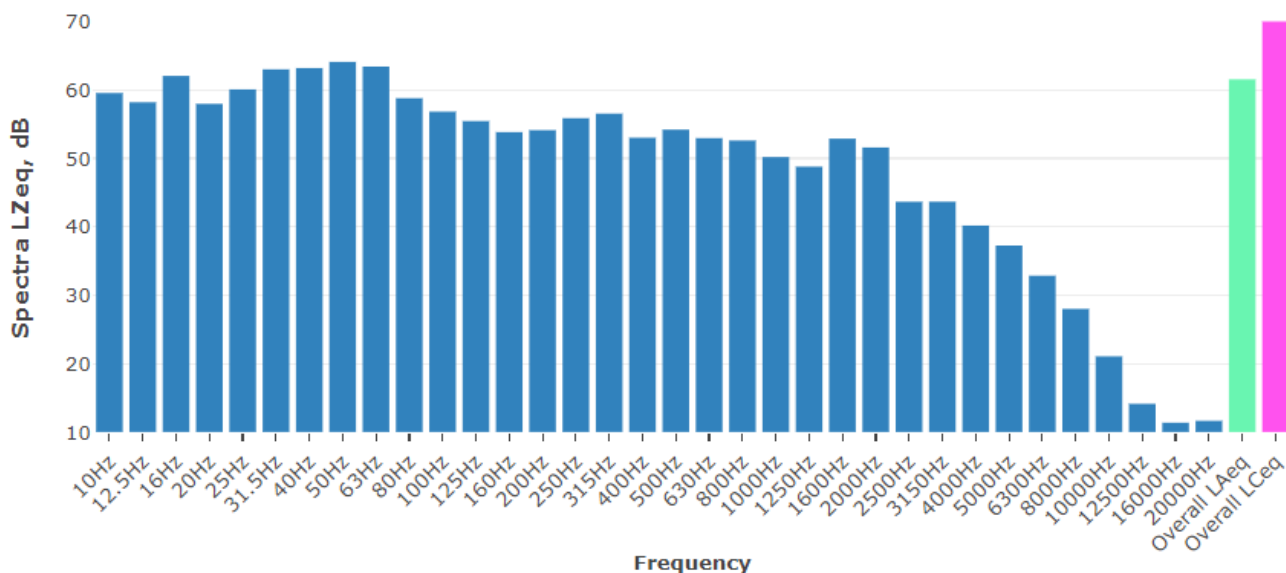
2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) Note that the system classifies August 26 as the period from 7 am on August 26 to 7 am on August 27. The Wyuna arrived at 00:38 am on August 27, and has been incorporated in the data for August 26.

5) Note that the system classifies August 28 as the period from 7 am on August 28 to 7 am on August 29. The Wyuna departed at 00:09 am on August 29, and has been incorporated in the data for August 28.

### 4.8.2 Additional information



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

Figure 4.13 Typical vessel spectrum – noise level at L03

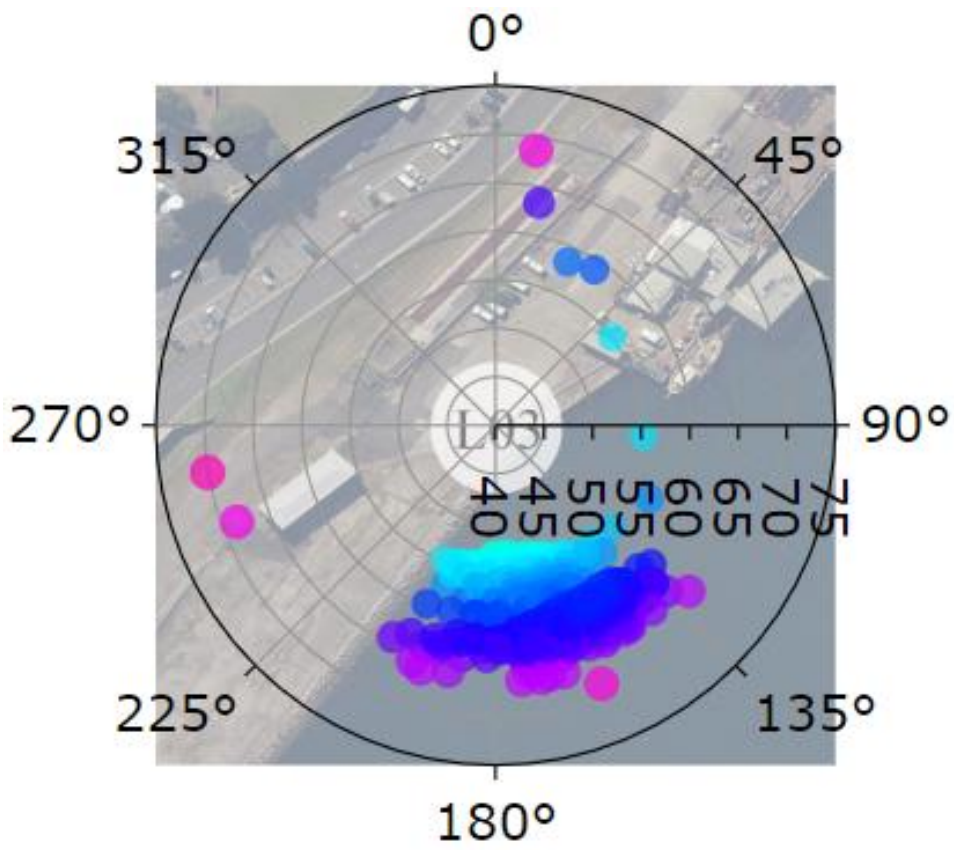


Figure 4.14 Typical vessel polar (directional) plot

## 4.9 Ocean Surveyor (WHT4) – August 12 – August 16, 2024

The Ocean Surveyor was in berth at White Bay 4 between August 12 and August 16, 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.

As per the previous visit in July, a review of the data indicated that noise levels were typically low, especially during the night time period, with  $L_{Aeq, 1hour}$  noise levels at L01 ranging from approximately 38 dBA to 46 dBA during the night period, when other extraneous noise was removed. 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.

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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