Southern Sydney Freight Line Year 10 Compliance Monitoring

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SSFL Year 10 Compliance Monitoring
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Southern Sydney Freight Line

Year 10 Compliance Monitoring

Client: Australian Rail Track Corporation

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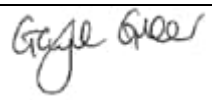
C	11-Apr-2024	Updated - Minor Client Comments	Gayle Greer Acoustics Team Leader – NSW	

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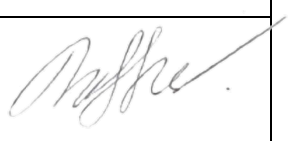
C	11-Apr-2024	Independent Expert Review	Ben Ison Associate Director Newcastle Acoustics Manager WSP	
C	11-Apr-2024	Client Review	Thomas Haffner Environment & Community Advisor ARTC	

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Executive Summary

The Australian Rail Track Corporation (ARTC) constructed the Southern Sydney Freight Line (SSFL), a dedicated freight line, for a distance of 36 kilometres between Birrong and Macarthur in Southern Sydney. The SSFL provides a third track in the rail corridor specifically for freight services, allowing passenger and freight services to operate independently.

The Minister's Conditions of Approval require monitoring and review of the adequacy and effectiveness of noise and vibration mitigation measures at years 1, 2, 5 and 10.

The Year 10 compliance monitoring for the Southern Sydney Freight Line (SSFL) was undertaken in accordance with the Minister's Conditions of Approval, the Year 2 and 5 Compliance monitoring reports and the SSFL Operational Noise and Vibration Management Plan.

The noise monitoring was completed during the period November/December 2023 at 13 locations and noise levels were found to be in compliance with the expected operational noise levels detailed in the Operational Noise and Vibration Management Plan. Noise levels were found to have slightly increased since the Year 5 compliance monitoring.

A number of noise mitigation initiatives have been undertaken since the completion of the 5 Year SSFL compliance monitoring report. These initiatives have been summarised in section 6.0.

1.0 Introduction

1.1 Overview

The Australian Rail Track Corporation (ARTC) constructed the Southern Sydney Freight Line (SSFL), a dedicated freight line for a distance of 36 kilometres between Birrong and Macarthur in southern Sydney. The SSFL provides a third track in the rail corridor specifically for freight services, allowing passenger and freight services to operate independently. The SSFL commenced operations on the 21 December 2013.

The Australian Rail Track Corporation (ARTC) has engaged AECOM Australia Pty Ltd (AECOM) to undertake Year 10 compliance monitoring for the Southern Sydney Freight Line (SSFL) in accordance with the Minister's Conditions of Approval, the Year 2 and Year 5 Compliance monitoring reports and the SSFL Operational Noise and Vibration Management Plan (ONVMP), (Wilkinson Murray Report No, 05032-NM, Version K, March 2013).

This report presents the results of the Year 10 compliance monitoring of the SSFL and includes:

- Summary of the noise measurement methodology and locations
- The noise assessment criteria
- The results of the operational noise monitoring
- A summary of any advances in standards and initiatives that have been undertaken since the completion of the Year 5 SSFL compliance monitoring report.

The acoustic terminology used in this report is explained in Appendix A.

1.2 Minister's Conditions of Approval

Condition 54 of the Minister's Conditions of Approval (MCoA) (Application 05_0089) for the project imposes ongoing monitoring and reporting requirements on the project. Relevant parts of the Condition states:

> *'At 1, 2, 5 and 10 years from commencement of Project operations the Proponent must:*
>
> *a) monitor and review the adequacy and effectiveness of noise and vibration mitigation measures against noise and vibration objectives stated in the Operation Noise and Vibration Management Plan;*
>
> *b) review, and revise if required, the Source Control Plan; and*
>
> *c) review advances in noise standards and best practice noise mitigation technology as well as any State or Federal Government initiatives to manage rail noise.*
>
> *If monitoring indicates any substantial exceedance of stated or emerging noise and vibration objectives as a result of the Project the Proponent must identify and implement any additional Reasonable and Feasible mitigation measures.*
>
> *A report of the monitoring and review must be submitted to the Director-General within 4 months of the relevant monitoring period, unless otherwise agreed to by the Director-General. Additional Reasonable and Feasible mitigation measures identified must be installed or implemented to the satisfaction of the Director-General in consultation with DEC and affected receivers.*
>
> *The monitoring and review, and any subsequent mitigation measures must be verified by an independent noise and vibration expert at the Proponent's expense. The independent expert must be approved by the Director-General prior to the relevant review period.*
>
> *For the purposes of this condition, a substantial exceedance is considered to be an exceedance of the L_{Aeq} objective by 2 dB(A), as measured or assessed over a one-week period, or exceedances of the L_{Amax} objective by 2 dB(A), measured or assessed as the energy-mean maximum noise.'*

1.3 Monitoring locations

The ONVMP forms part of the Operational Environmental Management Plan (OEMP) which has been prepared by ARTC for the operation of the SSFL. The ONVMP addresses the requirements of MCoA Condition 51 by:

- Identifying noise and vibration sensitive receivers;
- Identifying the appropriate operational noise and vibration objectives and levels for sensitive receivers;
- Predicting operational noise and vibration impacts at sensitive receivers;
- Examining noise and vibration mitigation measures;
- Identifying measures for controlling noise and vibration;
- Prescribing a Source Control Plan;
- Specifying procedures for complaints management; and
- Specifying procedures for reviewing the adequacy of operational noise and vibration mitigation measures

Noise monitoring locations are required to be as close as possible to the locations listed below in Table 1. These monitoring locations were specified in Table 10-1 in the ONVMP.

Table 1 Noise monitoring locations

Location Number	ONVMP ID	Address
1	729	15 Buckland Road, Casula[1]
2	721	84 St Andrews Boulevard, Casula[1]
3	-	18 Fraser Road, Canley Vale
4	-	75 Wattle Avenue, Carramar
5	33	1/113 Wellington Road, Sefton
6	-	33 Wellington Road, Birrong
7	809	21 Slessor Road, Casula
8	-	24 Railway Parade, Glenfield
9	1149	22 Kulgoa Street, Leumeah
10	-	16 Somerset Street, Minto
11	-	4 Lakewood Crescent, Casula
12	-	150 Broomfield Street, Cabramatta
13	-	86/3 Riverpark Drive, Liverpool

Note:

1 Specific addresses for these locations are taken from Table 8-2 in the ONVMP

2.0 Methodology

2.1 Equipment

2.1.1 Noise loggers

Measurements of train noise were completed at 13 locations for periods of at least seven days, refer to Table 2. Noise monitoring locations are also shown in Appendix B.

Table 2 Noise monitoring locations

Location number	ONVMP reference location	Noise monitoring location	Noise logger model	Serial number	Logging period
1	15 Buckland Road, Casula	13 Buckland Road, Casula[1]	Rion NL52	00175537	12/12/23 – 20/12/23
2	84 St Andrews Boulevard, Casula	78 St Andrews Boulevard, Casula[1]	Rion NL52	00175537	02/11/23 – 08/11/23
3	West End of Fraser Road, Canley Vale	22 Fraser Road, Canley Vale[1]	Rion NL52	00164395	02/11/23 – 09/11/23
4	73 Wattle Avenue, Carramar	75 Wattle Avenue, Carramar	Rion NL52	00553967	02/11/23 – 09/11/23
5	113 Wellington Road, Sefton	111A Wellington Road, Sefton[1]	Rion NL52	00164394	29/11/23 – 06/12/23
6	47 Wellington Road, Birrong	35 Wellington Road, Birrong[1]	Rion NL52	00164396	02/11/23 – 09/11/23
7	13 Slessor Road, Casula	13 Slessor Road, Casula[1]	Rion NL52	01043455	29/11/23 – 06/12/23
8	38 Railway Parade, Glenfield	20 Railway Parade, Glenfield[1]	Rion NL52	00898334	29/11/23 – 06/12/23
9	22 Kulgoa Street, Leumeah	22 Kulgoa Street, Leumeah[1]	Rion NL52	01043455	12/12/23 – 20/12/23
10	28 Somerset Street, Minto	16 Somerset Street, Minto	Rion NL52	00164394	12/12/23 – 20/12/23
11	14 Lakewood Crescent, Casula	4 Lakewood Crescent, Casula	Rion NL52	1043455	02/11/23 – 09/11/23
12	148 Bloomfield Street, Cabramatta	150 Broomfield Street, Cabramatta	Rion NL52	00175537	29/11/23 – 06/12/23
13	14 McGowen Crescent, Liverpool	8 McGowen Crescent, Liverpool[1]	Rion NL52	00898334	12/12/23 – 20/12/23

Notes:

1 Logging was undertaken at the most representative receiver location to those listed in Table 1 where access was available.

ARTC undertook several rounds of consultation for residents to opt into the noise monitoring program. Where compliance locations from the ONVMP did not opt in, alternative receiver locations were sought to meet the project timeline. The project independent expert's opinion was sought during this process for confirmation of location suitability prior to deployment.

The locations have also been chosen, as far as possible, to be consistent with the monitoring locations used during Year 5. Locations that have changed since the Year 5 monitoring and the reasons that they have changed are provided below:

- 13 Buckland Road, Casula – Access to 11 Buckland Road, Casula could not be obtained;
- 22 Kulgoa Street, Leumeah – Access to 18 Kulgoa Street, Leumeah could not be obtained; and
- 8 McGowen Crescent, Liverpool – Access to Unit 9/3 Riverpark Drive, Liverpool could not be obtained.

Each logger continuously measured one second L_{Aeq} and L_{Amax} noise levels for the entire measurement period. The loggers were placed either 1 m from the facade of each property or away from any

reflective surfaces. For the loggers that were placed away from reflective surfaces a 2 dB correction was added to the measured noise levels in accordance with the ONVR.

All noise monitoring equipment used was of Class 1 instrumentation standard as described in Australian Standard IEC 61672.1 2004 " Electroacoustics - sound level meters" and calibrated to NATA standards that are traceable to Australian Physical Standards held by the National Measurement Laboratory (CSIRO Division of Applied Physics). All loggers were calibrated before and after measurement periods to ensure significant drift had not occurred. All equipment has current calibration certification.

2.1.2 Sound level meters

Attended noise measurements were conducted using a Brüel & Kjær Type 2250 integrating sound level meter. The Brüel & Kjær Type 2250 integrating sound level meter is designated as a Class 1 instrument and has an accuracy suitable for laboratory and field use. The sound level meter was calibrated before and after the measurements with a drift in calibration not exceeding ±0.5 dB.

All the acoustic instrumentation employed during the noise measurements comply with the requirements of "*AS IEC 61672.1-2004 Electroacoustics - Sound level meters - Specifications*".

The equipment used for this assessment has current calibration certification.

2.2 Train monitoring

Trains on the Sydney Trains network have been tracked using the Transport for NSW (TfNSW) Open Data Hub. Trains on the SSFL have been tracked using the ARTC Train Tracker. The TfNSW Open Data Hub and the ARTC Train Tracker provide real time location of all operational trains on their respective networks. These train movements have been logged for the duration of the measurements and have been used to identify individual rail passbys and separate noise measurements of trains on the SSFL line from those on the Sydney Trains network.

It should be noted that the train movements were not logged from the 2nd to 9th November 2023 due to a computer error. Information on freight train movements provided by ARTC were used to identify freight train passbys during this period. The ARTC data is the master record of all freight train movements that have occurred on the ARTC network and can be relied upon for verifying noise contributions within the shared corridor.

2.3 Train noise levels

2.3.1 Noise level calculation

At each of the noise monitoring locations the L_{Aeq} and L_{Amax} levels were continuously measured for the entire logging period. Based on the train movement information (see section 2.2) the noise levels for each train pass were determined. The L_{Aeq} for the train pass was determined by taking a logarithmic average of each of the individual L_{Aeq} measurements during the pass-by event. The $L_{Aeq24hr}$ for each event was determined using the following formula where $L_{Aeq24hr,indv}$ is the corrected noise level for each individual event.

$$L_{Aeq24h,indv} = L_{Aeq} + 10log_{10}\left(\frac{Passby\ duration\ in\ sec}{24 \times 60 \times 60}\right)$$

The $L_{Aeq24hr}$ for the whole 24hour period was determined by logarithmically adding each of the $L_{Aeq24hr,indv}$ levels.

Where measurements have been excluded (due to adverse weather or the measurement being significantly affected but other non-rail related noise) the SSFL $L_{Aeq\ 24hr}$ results have been corrected to account for the total number of train passbys logged within each 24 hour period. The correction has been based on the following formula where $L_{Aeq24hr,cor}$ is the corrected noise level, $L_{Aeq24hr}$ is the noise level for the included trains, n_t is the total number of trains in 24 hours and n_i is the number of included trains in 24 hours.

$$L_{Aeq24h,cor} = L_{Aeq24hr} + 10log_{10}\left(\frac{n_t}{n_i}\right)$$

The L_{Amax} for each train pass was determined by taking the maximum of each of the individual L_{Amax} measurements during the pass-by event. The L_{Amax} for the monitoring period was determined by taking the logarithmic average of each of the train pass by L_{Amax} events.

2.3.2 Review by an independent expert

The noise monitoring results have been reviewed by an independent expert. Ben Ison's appointment to the role of Independent Expert was approved by NSW Department of Planning & Environment on 25th October 2023.

3.0 Noise Assessment Criteria

3.1 Operational L_{Aeq} noise level criteria

The operational noise criteria for each monitoring location have been determined from the expected operational noise levels in 2010 and 2020 which were presented in Table 8-2 of the ONVMP. The reference addresses are also taken from Table 8-2 of the ONVMP. The ONVMP states that the cumulative noise impact from rail movements on the SSFL and Sydney Trains Lines should be assessed against the criteria. The criteria are the predicted noise levels for 2020. These criteria are provided below in Table 3.

Table 3 Operational $L_{Aeq\ 24hr}$ noise level criteria, dB(A)

Year 10 monitoring location	Predicted $L_{Aeq\ 24hr}$ noise levels		$L_{Aeq\ 24hr}$ criteria
	2010	2020	
13 Buckland Road, Casula	67.2	69.3	69
78 St Andrews Boulevard, Casula	66.1	68.1	68
22 Fraser Road, Canley Vale	54.4	57.0	57
75 Wattle Avenue, Carramar	57.7	60.2	60
111A Wellington Road, Sefton	60.3	62.7	63
35 Wellington Road, Birrong	62.1	65.1	65
13 Slessor Road, Casula	56.0	57.7	58
20 Railway Parade, Glenfield	63.6	65.6	66
22 Kulgoa Street, Leumeah	66.7	69.1	69
16 Somerset Street, Minto	58.7	61.7	62
4 Lakewood Crescent, Casula	65.3	67.1	67
150 Broomfield Street, Cabramatta	55.1	57.8	58
8 McGowen Crescent, Liverpool	63.6	65.7	66

3.2 Operational L_{Amax} noise level criteria

The ONVMP found that generally requirements for mitigation were dictated by achieving compliance with the L_{Aeq} noise goals rather than with the L_{Amax} goals, therefore the ONVMP did not consider L_{Amax} noise levels at all receivers, however it does state:

> "*Feasible and reasonable mitigation measures should be considered consistent with the overall noise impacts from the whole corridor not deteriorating from the existing situation.*"

In order to comply with this clause the Year 2 Noise and Vibration Compliance Monitoring Report (May 2015, Umwelt) proposed upper limits for the L_{Amax} noise levels from freight trains on the SSFL based on the methodology in the ONVMP. These limits have been adopted in this report and are provided in Table 4.

Table 4 Operational L_{Amax} noise limits, dB(A)

Monitoring location	$L_{Amax\ 24hr}$ upper limit, dB(A)
13 Buckland Road, Casula	89[1]
78 St Andrews Boulevard, Casula	86
22 Fraser Road, Canley Vale	81

Monitoring location	$L_{Amax\ 24hr}$ upper limit, dB(A)
75 Wattle Avenue, Carramar	81
111A Wellington Road, Sefton	80
35 Wellington Road, Birrong	83
13 Slessor Road, Casula	80
20 Railway Parade, Glenfield	83
22 Kulgoa Street, Leumeah	84[2]
16 Somerset Street, Minto	90
4 Lakewood Crescent, Casula	86
150 Broomfield Street, Cabramatta	85
8 McGowen Crescent, Liverpool	80

Notes:

1. *L_{Amax} criteria for the Year 5 monitoring was 86 dB(A) at 11 Buckland Road. The upper limit has been adjusted using the following formula 20 log_{10}(d1/d2) as the monitoring location at 13 Buckland Road is now closer to the SSFL freight line (25 m compared to 34 m).*

2. *L_{Amax} criteria for the Year 5 monitoring was 80 dB(A) at 18 Kulgoa Street. The upper limit has been adjusted using the following formula 20 log_{10}(d1/d2) as the monitoring location at 22 Kulgoa Street is now closer to the SSFL freight line (31 m compared to 50 m).*

3.3 Vibration assessment

Condition 54 of the Conditions of Approval for the SSFL requires:

> *"confirmation of the adequacy and effectiveness of noise and vibration mitigation measures against noise and vibration objectives."*

No vibration impacts were identified in the ONVMP and as a result no vibration mitigation measures have been implemented. The ONVMP does not require vibration compliance monitoring, therefore vibration compliance has not been assessed in this report. Any vibration complaints recived in the future would be addressed through normal ARTC complaints handling procedures

4.0 Rail Noise Measurement Results

4.1 Unattended noise measurements

The results of the operational noise monitoring are presented below in Table 5. The results in Table 5 exclude any measured results affected by adverse weather conditions (wind speeds greater than 5 m/s or any rainfall) or extraneous noise events. Table 5 presents the:

- 2023 $L_{Aeq\ 24hr}$ criteria;
- $L_{Aeq\ 24hr}$ ambient noise level monitored (this includes both rail and non-rail related noise);
- $L_{Aeq\ 24hr}$ noise level due to freight and passenger trains;
- $L_{Aeq\ 24hr}$ noise level due to SSFL trains only;
- L_{Amax} noise criteria; and
- L_{Amax} noise level due to SSFL trains only.

Table 5 Measured operational noise levels, dB(A)

Monitoring location	$L_{Aeq,\ 24\ hr}$				L_{Amax} freight trains	
	2023 Criteria	Ambient	All trains	SSFL	Limit	SSFL
13 Buckland Road, Casula[2]	69	68	68	64	89	89
78 St Andrews Boulevard, Casula[1, 2]	68	67	66	59	86	84
22 Fraser Road, Canley Vale[2]	57	57	55	49	81	73
75 Wattle Avenue, Carramar	60	52	48	46	81	70
111A Wellington Road, Sefton[2]	63	57	52[2]	49	80	73
35 Wellington Road, Birrong[2]	65	63	59	53	83	79
13 Slessor Road, Casula[2]	58	56	55[3]	51	80	72
20 Railway Parade, Glenfield[2]	66	65	59[3]	53	83	76
22 Kulgoa Street, Leumeah	69	58	58	56	84	82
16 Somerset Street, Minto	62	58	56	50	90	76
4 Lakewood Crescent, Casula[2]	67	64	64	58	86	83
150 Broomfield Street, Cabramatta[2]	58	55	52[3]	49	85	72
8 McGowen Crescent, Liverpool	66	55	54	51	80	76

Notes:

1 *For this location there were less than seven days of valid data after exclusions due to adverse weather or extraneous noise however the valid data was sufficient and representative of seven days of typical train movements.*

2 *Measurement location was away from reflective surfaces therefore a 2dB correction was added to the measured noise levels.*

3 *For these locations passenger train noise levels were estimated by increasing the Year 5 measurements by 1.6 dB. The 1.6 dB increase is based upon a comparison of the Year 5 and Year 10 passenger train noise measurements at the other locations. Passenger train movements were not monitored for these location due to a computer error.*

It can be seen in Table 5 that all L_{Aeq} and L_{Amax} results comply with the respective criteria or limits.

It should be noted that the noise levels measured at 111A Wellington Road Sefton, 20 Railway Parade, Glenfield and 35 Wellington Road, Birrong appeared to have a significant contribution from road traffic during the day and evening time periods. Due to this extraneous noise, train passbys at these locations, during the day and evening were not always clearly identifiable in the noise measurements. However as total ambient noise levels are below the 2023 criteria, compliance is shown at all locations.

Throughout the monitoring period ARTC reviewed any track speeds restrictions or network disruptions that could impact train noise. ARTC worked with AECOM to undertake noise monitoring to avoid track possessions and exclude extended periods of poor weather.

A track speed restriction (60 km/h reduced from 80 km/h) was in place near Villawood which may have affected the measurements at 111A Wellington Road Sefton. This change in speed may have reduced the measured SSFL noise level at this location by up to 3dB (based upon the speed correction, equation 6 from KILDE Report 130). The measured level would however still comply with the criterion assuming no speed restriction was in place.

4.1.1 Discussion

Generally the noise levels presented in Table 5 have slightly increased since the Year 5 compliance monitoring. The Year 5 results are presented in SSFL 5 year Compliance Monitoring report (60560900-RPNV-01_C, 21 May 2018).

The noise levels presented in Table 5 clearly demonstrate that SSFL rail noise levels comply with the noise criteria at all locations. Full measurement results are provided in Appendix C.

4.2 Attended noise measurements

Attended noise monitoring over a 15 minute period was conducted at each location listed in Table 2. Results of the monitoring are presented below in Table 6.

Table 6 Attended noise measurements, dB(A)

Location Number	Location	Noise level, $L_{Aeq\ 15\ min}$	Comments[1]
1	13 Buckland Road, Casula	62	Noise environment dominated by a combination of bird noise 64-66 dB(A) and distant road traffic from M5 motorway when no trains are nearby. Passenger train 75 dB(A) max.
2	78 St Andrews Boulevard, Casula	57	Noise environment dominated by constant vehicle hum from M5 motorway 53 dB(A). Passenger train passbys: 70-74 dB(A) max.
3	22 Fraser Road, Canley Vale	69	Background noise dominated by suburban hum, local traffic 62-71 dB(A). Aircraft 50 dB(A). Bird noise also just audible.
4	75 Wattle Avenue, Carramar	54	Distant road traffic perceptible from Horsley Drive 43-45 dB(A). Train pass by 56-57 dB(A) max
5	111A Wellington Road, Sefton	60	Road traffic noise dominant, 60-63 dB(A). Aircraft audible 70 dB(A). Freight Train 58-60 dB(A) max.
6	35 Wellington Road, Birrong	60	Noise environment dominated by local road traffic noise 65-68 dB(A). Light aircraft noise just audible at times. Slow Waratah train 53-56 dB(A). Slight wheel squeal from braking

Location Number	Location	Noise level, $L_{Aeq\ 15\ min}$	Comments[1]
			from unidentified train heading away from city 45-46 dB(A).
7	13 Slessor Road, Casula	48	Environment controlled by natural sounds between trains, train passby 57-58 dB(A) max. Most trains audible, but not dominant over background levels. Distant road traffic just audible. Wind noise 45-50 dB(A).
8	20 Railway Parade, Glenfield	65	Environment controlled by road traffic noise along Railway Parade, 60-65dB(A). Bird noise also audible, 40-45 dB(A). Passenger trains passby 66-70 dB(A) max.
9	22 Kulgoa Street, Leumeah	53	Passenger trains 63-68 dB(A) max. Insect noise just audible. Road traffic just audible from Campbelltown Road 42 dB(A).
10	16 Somerset Street, Minto	56	Noise environment dominated by traffic on Somerset Street. Train station announcements just audible. Train passby 65 dB(A) max. Truck passby 66 dB(A) max. Bird noise 45 dB(A)
11	4 Lakewood Crescent, Casula	75	Noise environment dominated by road traffic noise from M5, 58-62 dB(A). Freight train pass by 68 dB(A) max. Noise from inside residence just audible. Passenger train passby 68-76 dB(A) max. Bird noise just audible.
12	150 Broomfield Street, Cabramatta	55	Road traffic noise just audible. Freight train passby 67-70 dB(A) max. Passenger train 58 dB(A). Aircraft flyover 60-65 dB(A).
13	8 McGowen Crescent, Liverpool	56	Distant road traffic noise from the M5 48 dB(A). Freight train horn 65 dB(A) max. Passenger train 62 dB(A) max.

Notes:

1 The maximum freight train noise levels presented in this table are for a single freight train pass by during a 15 minute attended measurement. The maximum freight train noise levels presented in Table 5 are a logarithmic average of max levels for all freight trains during the unattended monitoring period.

5.0 Source Control Plan Review

Condition 54 of the Conditions of Approval states:

"b) review, and revise if required, the Source Control Plan;"

ARTC has reviewed the Source Control Plan in relation to the results of the Year 10 compliance monitoring and given the results of the program, no further provision of noise abatement has been deemed to be required by ARTC under the SCP. Some minor revisions have been made to reflect pollution studies and changes in the environment protection licensing regime. The Source Control Plan is attached in Appendix D.

Following completion of the Year 10 monitoring there is no MCoA requirement for any updates to the Source Control Plan.

6.0 Standards and Best Practice Review

Condition 54 of the Conditions of Approval states:

> *"c) review advances in noise standards and best practice noise mitigation technology as well as any State or Federal Government initiatives to manage rail noise."*

The following standards and initiatives have been undertaken since the completion of the Year 5 SSFL compliance monitoring report:

- The TfNSW standard on bogie steering (T HR RS 00400 ST Minimum Operating Standards for Rolling Stock – Freight Vehicle Specific Interface Requirements) incorporates best practice noise mitigation. It is expected that the benefits gained from the implementation of this standard will be realised on the ARTC network.
- Following completion of the Year 10 noise monitoring, management of noise impacts of the SSFL will generally fall under Environmental Protection Licences (EPL). An Amendment Regulation (The Protection of the Environment Operations Legislation Amendment (Scheduled Activities) Regulation 2019) created a new scheduled activity to regulate railway rolling stock operation. This means that rolling stock operators (RSO) now have direct responsibility for their environmental performance and are accountable to the EPA under the terms of their EPL.
- EPL conditions for RSOs require:
  - new train locomotives to comply with noise and air emission limits.
  - monitoring and reporting on progress to reduce air and noise emissions.
  - providing a way for community members to report noise and air impacts.
  - pollution studies into wheel squeal, idling, braking, bunching and stretching and horn use.
  - improvements in steering performance to reduce wheel squeal on priority class freight train wagons.
- ARTC's EPL 3142 has been updated, in part to address the RSO's responsibilities. The updates are outlined below:
  - The licensee must maintain the track to minimise noise impacts on noise sensitive receivers where safe and practicable to do so (Operating Condition O4).
  - The licensee must minimise noise impacts on sensitive receivers from locomotives idling on the premises and horn usage on the premises (Operating Condition O5);
  - The licensee must minimise noise impacts on sensitive receivers from braking, bunching, stretching of rolling stock on the premises (Operating Condition O6);
  - The licensee must identify the Rolling Stock Operator (RSO) which is the subject of a complaint reported to the EPA or the licensee. Details of complaints received by the licensee must be provided to the RSO. The licensee must submit a report to the EPA, providing details of all noise and vibration complaints received, including any identified RSO. (Reporting Condition R4).

7.0 Conclusion

The Year 10 compliance monitoring for the Southern Sydney Freight Line (SSFL) was undertaken in accordance with the Minister's Conditions of Approval, the Year 2 and Year 5 compliance monitoring report and the SSFL Operational Noise and Vibration Management Plan (ONVMP).

The noise monitoring was completed during the period November/December 2023. Noise levels were found to have slightly increased since the Year 5 compliance monitoring. Noise levels were found to be in compliance with the expected operational noise levels detailed in the ONVMP. Therefore it is concluded that the treatments previously recommended and implemented mitigation measures are appropriate and further consideration of additional mitigation measures is not required.

ARTC has reviewed the Source Control Plan and a minor revision was considered to be required. No changes to noise mitigation and abatement were required following the compliance monitoring. Minor updates have been undertaken to reflect pollution studies and the change in environment protection licensing regime for ARTC and Operators using it's network and how this is intergreated into ARTC's operation of the SSFL. The Source Control Plan is included in Appendix D.

A significant change has occurred in how the EPA regulates noise from railway activities. The EPA now regulates rolling stock operators separately to rail infrastructure operations through environment protection licences. This means that rolling stock operators (RSO) now have direct responsibility for their environmental performance. ARTC's responsibilities for managing noise under its licence with the EPA have been discussed in detail in Section 6.0.

Appendix A

Glossary of Acoustic Terminology

Appendix A Glossary of Acoustic Terminology

The following is a brief description of acoustic terminology used in this report.

Sound power level	The total sound emitted by a source.
Sound pressure level	The amount of sound at a specified point.
Decibel [dB]	The measurement unit of sound.
A Weighted decibels [dB(A)]	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to, and places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).
Decibel scale	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows:

0dB(A)	Threshold of human hearing
30dB(A)	A quiet country park
40dB(A)	Whisper in a library
50dB(A)	Open office space
70dB(A)	Inside a car on a freeway
80dB(A)	Outboard motor
90dB(A)	Heavy truck passby
100dB(A)	Jackhammer/Subway train
110 dB(A)	Rock Concert
115dB(A)	Limit of sound permitted in industry
120dB(A)	747 take off at 250 metres

Frequency [f]	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.
Equivalent continuous sound level [L_{eq}]	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.
L_{max}	The maximum sound pressure level measured over the measurement period.
L_{min}	The minimum sound pressure level measured over the measurement period.
L_{10}	The sound pressure level exceeded for 10% of the measurement period. For 10% of the measurement period it was louder than the L_{10}.

L_{90}	The sound pressure level exceeded for 90% of the measurement period. For 90% of the measurement period it was louder than the L_{90}.
Ambient noise	The all-encompassing noise at a point composed of sound from all sources near and far.
Background noise	The underlying level of noise present in the ambient noise when extraneous noise (such as transient traffic and dogs barking) is removed. The L_{90} sound pressure level is used to quantify background noise.
Traffic noise	The total noise resulting from road traffic. The L_{eq} sound pressure level is used to quantify traffic noise.
Day	The period from 0700 to 1800 h Monday to Saturday and 0800 to 1800 h Sundays and Public Holidays.
Evening	The period from 1800 to 2200 h Monday to Sunday and Public Holidays.
Night	The period from 2200 to 0700 h Monday to Saturday and 2200 to 0800 h Sundays and Public Holidays.
Assessment background level [ABL]	The overall background level for each day, evening and night period for **each day** of the noise monitoring.
Rating background level [RBL]	The overall background level for each day, evening and night period for the **entire length** of noise monitoring.

*Definitions of a number of terms have been adapted from Australian Standard AS1633:1985 *"Acoustics – Glossary of terms and related symbols"*, the EPA's NSW Noise Policy for Industry, the EPA's Rail Infrastructure Noise Guideline and the EPA's Road Noise Policy.

Appendix B

Noise Logging Locations

SSFL 10 Year Compliance Monitoring - 13 Buckland Rd, Casula

AECOM

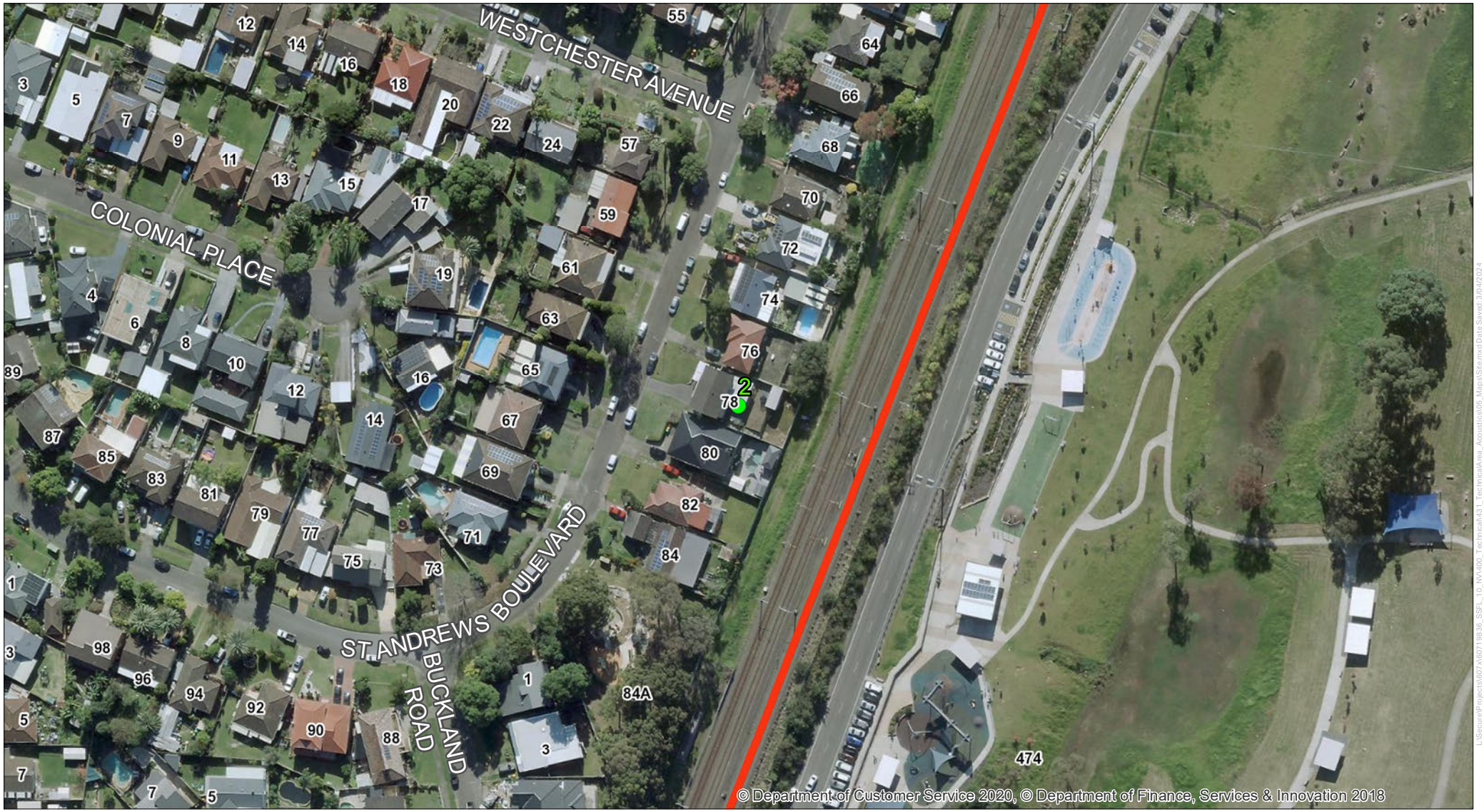
Meters
0 20 40

Logger

SFFL

Source:

L:\Secure\Projects\607x\607119836_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024



SSFL 10 Year Compliance Monitoring - 78 St Andrews Blvd, Casula

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

L:\Secure\Projects\607x\60719836_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024

SSFL 10 Year Compliance Monitoring - 22 Fraser Rd, Canley Vale

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

L:\Secure\Projects\607\60719836_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024

SSFL 10 Year Compliance Monitoring - 75 Wattle Ave, Carramar

AECOM

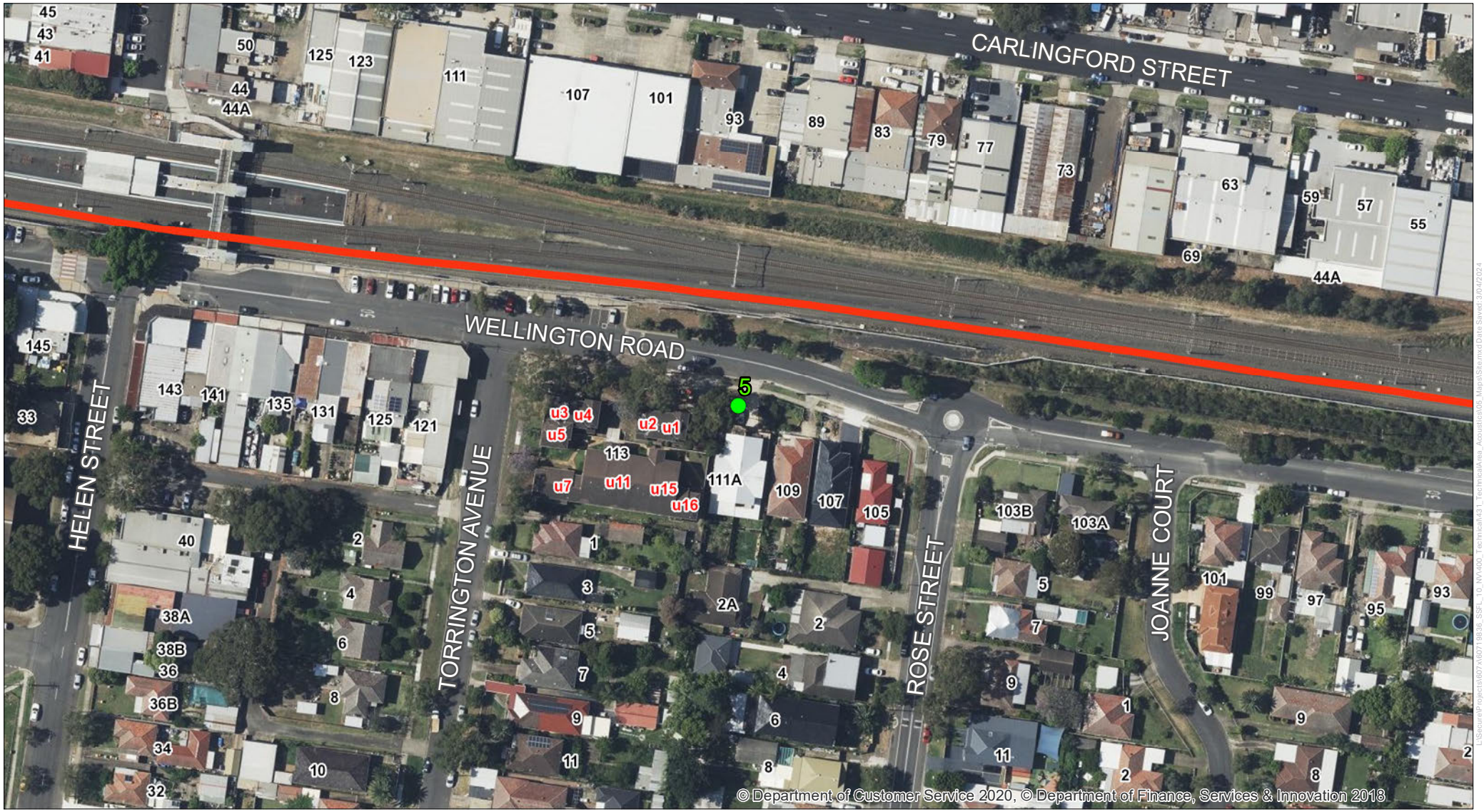
N

0 20 40 Meters

Logger

SFFL

Source:



SSFL 10 Year Compliance Monitoring - 111A Wellington Rd, Sefton

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

SSFL 10 Year Compliance Monitoring - 35 Wellington Rd, Birrong

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

SSFL 10 Year Compliance Monitoring - 13 Slessor Rd, Casula

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

L:\Secure\Projects\607\x\60719836_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024

SSFL 10 Year Compliance Monitoring - 20 Railway Parade, Glenfield NSW

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

L:\Secure\Projects\607\60719838_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024

SSFL 10 Year Compliance Monitoring - 22 Kulgoa St, Leumeah NSW

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

SSFL 10 Year Compliance Monitoring - 16 Somerset St, Minto NSW

AECOM

Meters
0 20 40

Logger

SFFL

Source:

SSFL 10 Year Compliance Monitoring - 4 Lakewood Cres, Casula

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

L:\Secure\Projects\607\60719836_SSFL_10_NV1400_Technical\431_TechnicalArea_Acoustics\05_Maps\Site.mxd Date Saved: 3/04/2024

SSFL 10 Year Compliance Monitoring - 150 Broomfield St, Cabramatta

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

SSFL 10 Year Compliance Monitoring - 8 McGowen Crescent, Liverpool

AECOM

N

0 20 40 Meters

Logger

SFFL

Source:

Appendix C

Noise Monitoring Results

Appendix C Noise Monitoring Results

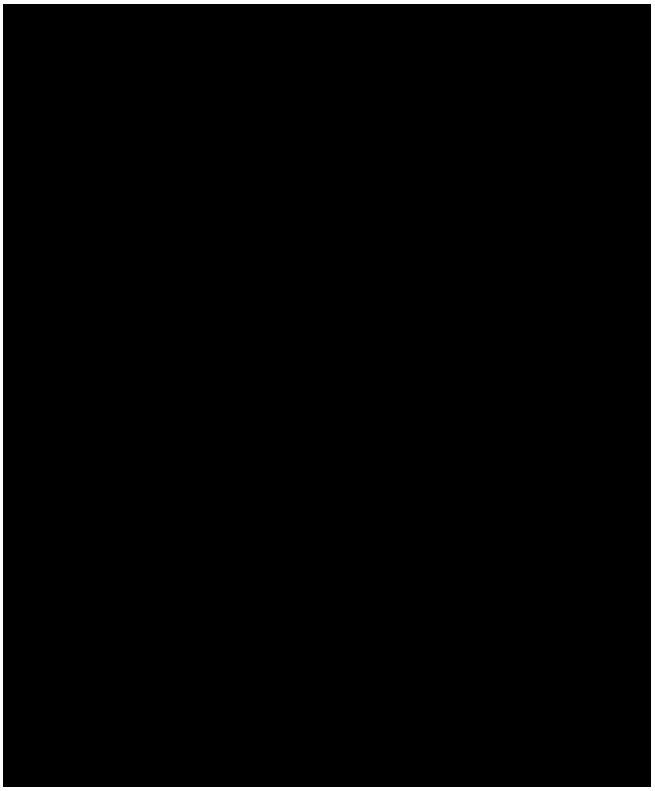
13 Buckland Road, Casula

Table 7 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
12/12/2023	65	69
13/12/2023	65	69
14/12/2023	66	69
15/12/2023	64	69
16/12/2023	63	69
17/12/2023	64	69
18/12/2023	64	69
19/12/2023	65	69
20/12/2023	63	69
Overall	**64**	**69**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 1 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
12/12/2023 0:49			22	84	89		
12/12/2023 1:18			55	81	93		
12/12/2023 1:25			66	80	91		
12/12/2023 1:38			37	85	91		
12/12/2023 2:00			33	82	89		
12/12/2023 2:21			109	73	86		
12/12/2023 2:35			65	76	88		
12/12/2023 3:07			46	84	91		
12/12/2023 3:16			44	73	82		
12/12/2023 3:31			12	73	80	Not Clear	
12/12/2023 4:04			16	85	93		
12/12/2023 4:24			83	77	93		
12/12/2023 5:27			34	81	90		Rain
12/12/2023 5:54			52	76	86		Rain
12/12/2023 8:48			90	78	88		
12/12/2023 9:38			42	81	91		
12/12/2023 10:54			35	80	85		
12/12/2023 10:59			41	78	91		
12/12/2023 11:39			57	78	87		
12/12/2023 12:08			33	79	85		
12/12/2023 12:26			50	77	83		
12/12/2023 12:40			29	78	83		
12/12/2023 14:05			12	78	83	Not Clear	
12/12/2023 14:12			30	79	92		
12/12/2023 14:23			79	75	83		
12/12/2023 15:33			35	80	90		
12/12/2023 16:22			72	76	82		Wind
12/12/2023 17:02			137	73	82	Passenger	Wind
12/12/2023 17:12			48	84	99		Wind
12/12/2023 18:23			32	82	92		Wind
12/12/2023 18:52			41	76	80		
12/12/2023 19:34			61	76	87		
12/12/2023 20:11			30	71	80		
12/12/2023 20:15			45	76	89		
12/12/2023 20:57			82	74	87		
12/12/2023 21:10			36	80	88		
12/12/2023 21:24			39	81	88		
12/12/2023 21:37			79	79	88		
12/12/2023 22:46			39	79	89		
12/12/2023 23:20			50	75	80		
13/12/2023 0:20			38	80	86		
13/12/2023 1:13			95	77	91		
13/12/2023 1:18			37	77	94		
13/12/2023 1:19			44	86	94		
13/12/2023 1:22			51	76	87		
13/12/2023 1:40			66	80	91		
13/12/2023 3:31			52	78	91		
13/12/2023 3:32			32	86	92		
13/12/2023 3:38			39	79	87		
13/12/2023 3:46			27	82	87		
13/12/2023 6:25			34	78	82		
13/12/2023 6:43			70	78	87		
13/12/2023 8:30			10	78	83	Not Clear	
13/12/2023 8:39			51	72	80		
13/12/2023 8:53			92	77	86		
13/12/2023 9:05			7	50	62	Not Clear	
13/12/2023 9:29			35	82	94		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
13/12/2023 10:08			40	76	80		
13/12/2023 10:13			44	78	85		
13/12/2023 10:29			96	75	83		
13/12/2023 10:55			14	71	77	Not Clear	
13/12/2023 11:13			12	80	85	Not Clear	
13/12/2023 11:25			43	80	87		
13/12/2023 11:41			12	64	73	Not Clear	
13/12/2023 12:00			61	77	88		
13/12/2023 13:00			75	79	84		
13/12/2023 13:29			33	76	88		
13/12/2023 13:51			94	80	93		
13/12/2023 14:40			61	78	87		
13/12/2023 14:48			32	80	89		
13/12/2023 15:34			10	73	82	Not Clear	Wind
13/12/2023 17:23			49	82	89		Wind
13/12/2023 17:52			59	78	91		Wind
13/12/2023 18:25			47	81	89		Wind
13/12/2023 19:05			47	79	88		
13/12/2023 19:54			33	80	84		
13/12/2023 20:17			39	73	83		
13/12/2023 20:47			72	72	80		
13/12/2023 21:27			64	77	85		Rain
13/12/2023 21:33			65	73	84		Rain
13/12/2023 22:09			52	93	118	Not Clear	Rain
14/12/2023 0:11			32	82	90		
14/12/2023 0:16			26	85	92		
14/12/2023 1:18			36	80	97		
14/12/2023 1:19			52	85	97		
14/12/2023 1:25			39	83	93		
14/12/2023 1:32			83	86	102		
14/12/2023 2:50			37	84	92		
14/12/2023 3:14			51	84	95		
14/12/2023 3:19			47	78	89		
14/12/2023 3:25			28	84	90		
14/12/2023 3:36			15	52	57	Not Clear	
14/12/2023 3:53			90	82	93		
14/12/2023 4:18			73	85	101		Rain
14/12/2023 5:25			36	81	92		
14/12/2023 9:37			28	81	87		
14/12/2023 9:55			129	73	87		
14/12/2023 10:31			34	80	84		
14/12/2023 12:08			58	77	84		
14/12/2023 12:23			105	76	91		
14/12/2023 12:27			49	76	88		
14/12/2023 12:54			46	81	86		
14/12/2023 13:12			41	76	86		
14/12/2023 13:29			27	74	80		Wind
14/12/2023 13:45			88	77	85		Wind
14/12/2023 14:05			75	76	83		Wind
14/12/2023 14:21			62	81	90		Wind
14/12/2023 15:08			120	75	83		Wind
14/12/2023 17:19			54	71	82		Wind
14/12/2023 17:33			70	76	90		Wind
14/12/2023 18:59			77	69	77		
14/12/2023 19:16			80	79	102	Not Clear	
14/12/2023 19:43			51	78	87		
14/12/2023 19:46			35	80	84		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
14/12/2023 20:16			35	74	83		
14/12/2023 20:37			62	76	84		
14/12/2023 20:46			71	76	85		
14/12/2023 21:26			106	79	91		Wind
14/12/2023 21:40			53	78	89		Wind
14/12/2023 23:10			42	78	88		
15/12/2023 0:30			51	82	88		Wind
15/12/2023 1:14			44	78	88		Wind
15/12/2023 1:16			34	78	84		
15/12/2023 1:20			95	75	91		
15/12/2023 1:27			59	74	98	Not Clear	
15/12/2023 1:32			66	64	72		
15/12/2023 1:49			32	76	82		
15/12/2023 1:57			55	79	88		
15/12/2023 2:55			62	80	87		
15/12/2023 2:59			39	76	82		
15/12/2023 3:16			37	78	85		
15/12/2023 3:50			69	82	95		
15/12/2023 3:54			25	83	89		
15/12/2023 6:04			44	77	86		
15/12/2023 6:12			53	75	81		
15/12/2023 6:17			19	75	81	Not Clear	
15/12/2023 8:48			47	74	82		
15/12/2023 9:18			77	72	80		
15/12/2023 9:38			13	72	77	Not Clear	
15/12/2023 9:40			76	79	90		
15/12/2023 10:18			30	80	84		
15/12/2023 10:27			41	77	84		
15/12/2023 10:41			30	82	89		
15/12/2023 11:01			71	77	85		
15/12/2023 11:28			60	77	85		
15/12/2023 11:47			45	78	89		
15/12/2023 12:07			58	79	86		
15/12/2023 12:23			49	75	84		
15/12/2023 12:56			77	74	83		
15/12/2023 13:05			48	77	86		
15/12/2023 13:28			25	73	79		
15/12/2023 14:01			35	77	83		
15/12/2023 14:06			21	56	73	Not Clear	
15/12/2023 15:27			15	72	79	Not Clear	
15/12/2023 15:40			101	78	88		
15/12/2023 15:48			40	79	88		Wind
15/12/2023 16:01			13	73	80	Not Clear	Wind
15/12/2023 17:05			50	80	87		Wind
15/12/2023 17:53			58	78	85		Wind
15/12/2023 18:38			45	77	89		Wind
15/12/2023 18:43			32	80	87		Wind
15/12/2023 19:07			47	78	84		
15/12/2023 19:22			35	80	85		
15/12/2023 20:13			40	72	80		
15/12/2023 20:46			69	76	84		
15/12/2023 21:42			40	79	86		
15/12/2023 22:47			38	80	87		
15/12/2023 23:11			33	81	85		
16/12/2023 0:52			34	80	83		
16/12/2023 1:12			38	83	96		
16/12/2023 1:47			31	79	84		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
16/12/2023 2:01			53	79	88		
16/12/2023 3:19			33	85	90		
16/12/2023 6:02			35	80	98		
16/12/2023 8:40			82	77	87		
16/12/2023 9:04			36	80	87		
16/12/2023 9:10			45	75	86		
16/12/2023 11:23			83	76	84		
16/12/2023 12:26			54	76	83		Wind
16/12/2023 13:11			64	71	81		
16/12/2023 13:30			51	79	85		
16/12/2023 13:59			34	77	85		
16/12/2023 15:57			55	78	85		
16/12/2023 16:19			59	76	86		
16/12/2023 17:13			85	78	88	Not Clear	
16/12/2023 17:41			54	81	96	Not Clear	Wind
16/12/2023 17:59			82	79	93	Not Clear	Wind
16/12/2023 18:13			99	80	99	Not Clear	Wind
16/12/2023 18:42			31	82	92	Not Clear	
16/12/2023 19:13			70	74	84		
16/12/2023 19:34			41	82	89		Wind
16/12/2023 20:19			91	77	88		Wind
16/12/2023 20:30			46	78	84		Wind
16/12/2023 20:47			13	53	63	Not Clear	Wind
16/12/2023 21:19			39	78	87		Wind
16/12/2023 22:48			39	78	85		
16/12/2023 23:50			57	75	91		
16/12/2023 23:58			21	71	79	Not Clear	
17/12/2023 0:00			101	80	89		
17/12/2023 0:08			16	72	78	Not Clear	
17/12/2023 0:30			75	78	90		
17/12/2023 0:58			83	76	88		
17/12/2023 1:14			44	85	93		
17/12/2023 1:36			52	76	84		
17/12/2023 3:12			73	80	94		
17/12/2023 3:27			42	79	89		
17/12/2023 5:52			37	79	88		
17/12/2023 7:32			42	75	83		
17/12/2023 7:45			12	51	58	Not Clear	
17/12/2023 8:29			26	78	89		
17/12/2023 9:41			43	79	93		
17/12/2023 11:28			54	81	90		
17/12/2023 11:58			42	82	87		
17/12/2023 13:56			40	77	89		Wind
17/12/2023 14:22			81	79	90		Wind
17/12/2023 14:41			32	80	84		Wind
17/12/2023 15:18			80	81	90		Wind
17/12/2023 16:28			73	81	91		
17/12/2023 16:58			47	79	92		Wind
17/12/2023 20:12			47	77	81		
17/12/2023 20:26			47	80	85		
17/12/2023 20:34			39	82	88		
17/12/2023 23:12			43	77	83		
17/12/2023 23:51			54	74	87		
18/12/2023 0:15			18	41	51	Not Clear	
18/12/2023 0:57			72	74	83		
18/12/2023 1:11			37	80	89		
18/12/2023 1:15			59	82	92		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
18/12/2023 1:29			38	77	83		
18/12/2023 2:49			40	78	84		
18/12/2023 3:16			77	81	91		
18/12/2023 3:26			32	81	86		
18/12/2023 3:50			77	83	97		
18/12/2023 4:41			49	81	86		
18/12/2023 6:12			41	78	83		
18/12/2023 7:48			39	78	85		
18/12/2023 8:03			10	53	59	Not Clear	
18/12/2023 9:46			36	78	83		
18/12/2023 10:14			32	80	85		
18/12/2023 10:21			47	78	91		
18/12/2023 10:50			40	80	88		
18/12/2023 11:23			93	80	91		
18/12/2023 12:09			83	78	89		
18/12/2023 13:43			39	80	91		
18/12/2023 13:57			35	73	82		
18/12/2023 16:59			15	51	61	Not Clear	
18/12/2023 17:20			67	80	96		
18/12/2023 18:58			45	78	93		
18/12/2023 19:03			49	78	86		
18/12/2023 19:29			34	81	89		
18/12/2023 19:33			21	75	81		
18/12/2023 20:09			44	81	88		
18/12/2023 20:12			42	73	83		
18/12/2023 20:46			79	75	86		
18/12/2023 21:28			51	75	82		
18/12/2023 22:38			39	80	88		
18/12/2023 23:02			37	79	85		
19/12/2023 0:09			35	79	85		
19/12/2023 0:49			56	82	89		
19/12/2023 1:07			55	74	78		
19/12/2023 1:27			52	81	92		
19/12/2023 2:16			61	78	90		
19/12/2023 2:37			53	75	82		
19/12/2023 2:59			49	81	89		
19/12/2023 3:11			64	79	87		
19/12/2023 4:00			75	77	87		
19/12/2023 5:12			23	84	89		
19/12/2023 6:12			39	78	82		
19/12/2023 7:38			53	81	94		
19/12/2023 8:26			39	76	85		
19/12/2023 8:43			32	53	57	Not Clear	
19/12/2023 9:00			43	78	83		
19/12/2023 9:07			49	81	89		
19/12/2023 10:08			41	77	84		
19/12/2023 10:19			57	77	89		
19/12/2023 11:43			65	79	93		
19/12/2023 11:57			41	82	87		
19/12/2023 12:04			106	77	91		
19/12/2023 12:22			35	78	84		
19/12/2023 12:50			32	80	85		
19/12/2023 13:47			49	77	90		
19/12/2023 14:12			31	74	81		
19/12/2023 14:43			83	80	94		
19/12/2023 16:02			81	76	84		
19/12/2023 17:13			20	54	66	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
19/12/2023 17:16			54	79	90		Wind
19/12/2023 17:44			59	74	89		Wind
19/12/2023 18:06			20	53	60	Not Clear	Wind
19/12/2023 18:51			45	76	84		Wind
19/12/2023 19:34			51	73	81		
19/12/2023 19:50			42	77	82		
19/12/2023 20:16			46	76	88		Wind
19/12/2023 20:26			52	76	83		Wind
19/12/2023 20:30			47	81	87		Wind
19/12/2023 21:02			77	77	84		Wind
19/12/2023 21:27			145	75	84		Wind
19/12/2023 22:51			20	78	90		Wind
19/12/2023 23:26			42	79	87		
19/12/2023 23:35			23	70	80		
20/12/2023 0:25			103	67	74		
20/12/2023 1:23			52	84	91		Rain
20/12/2023 1:27			62	77	89		Rain
20/12/2023 1:32			32	79	85		Rain
20/12/2023 2:37			179	51	60	Not Clear	Rain
20/12/2023 3:16			80	73	83		Rain
20/12/2023 3:30			57	75	85		Rain
20/12/2023 3:47			63	75	85		Rain
20/12/2023 4:13			56	73	83		Rain
20/12/2023 4:20			83	77	85		Rain
20/12/2023 6:13			36	79	84		Rain
20/12/2023 6:48			44	75	82		Rain
20/12/2023 7:58			58	73	82		Rain
20/12/2023 8:15			27	53	60	Not Clear	Rain
20/12/2023 8:58			98	79	88		
20/12/2023 9:44			35	80	86		Rain
20/12/2023 10:12			34	80	85		Rain
20/12/2023 10:38			134	76	86		Rain
20/12/2023 11:34			47	81	87		Rain
20/12/2023 11:52			70	76	83		Rain
20/12/2023 12:09			15	73	79	Not Clear	Wind
20/12/2023 12:38			52	78	84		Rain
20/12/2023 12:47			66	78	88		Rain
20/12/2023 13:33			88	77	83		Rain
20/12/2023 14:14			26	74	80		Rain
20/12/2023 14:35			21	50	59	Not Clear	Rain
20/12/2023 14:38			91	78	90		Rain
20/12/2023 15:18			17	65	78		Rain
20/12/2023 17:02			50	81	91		Rain
20/12/2023 17:27			41	79	89		
20/12/2023 18:25			65	72	78		
20/12/2023 18:40			40	78	85		
20/12/2023 20:29			44	79	91		
20/12/2023 20:48			81	75	83		
20/12/2023 21:43			46	80	91		
20/12/2023 22:40			53	76	84		
20/12/2023 23:29			34	81	89		

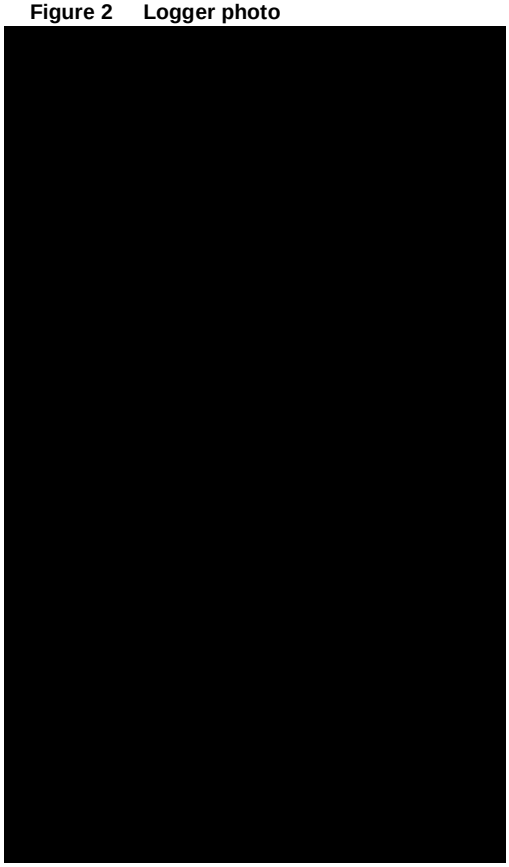
78 St Andrews Boulevard, Casula

Table 8 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
2/11/2023	58	68
3/11/2023	60	68
4/11/2023	58	68
5/11/2023	57	68
6/11/2023	61	68
7/11/2023	60	68
8/11/2023	59	68
Overall	**59**	**68**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 2 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
2/11/2023 0:32			58	76	81		
2/11/2023 0:39			59	68	81		
2/11/2023 0:49			102	67	77		
2/11/2023 1:18			45	67	73		
2/11/2023 1:47			40	68	78		
2/11/2023 2:51			50	68	79		
2/11/2023 3:49			70	71	83	Passenger	
2/11/2023 4:03			40	69	81		
2/11/2023 4:11			28	77	90		
2/11/2023 5:22			33	72	76		
2/11/2023 7:03			37	69	80		
2/11/2023 9:04			92	69	85		
2/11/2023 10:27			49	79	85		
2/11/2023 10:57			32	76	83		
2/11/2023 11:24			102	68	83		
2/11/2023 11:58			46	74	80		
2/11/2023 11:58			76	69	82		
2/11/2023 12:06			45	71	82		
2/11/2023 12:39			32	73	79		
2/11/2023 12:57			36	73	79		
2/11/2023 13:53			46	67	79		
2/11/2023 14:09			54	71	85		
2/11/2023 14:13			37	73	80		
2/11/2023 14:43			95	68	79	Passenger	
2/11/2023 14:54			23	74	82	Not Clear	
2/11/2023 15:27			49	71	82		
2/11/2023 15:54			31	74	87		Wind
2/11/2023 17:02			60	69	82		
2/11/2023 17:08			50	74	85	Passenger	
2/11/2023 18:30			44	72	80		Wind
2/11/2023 18:56			45	70	77		
2/11/2023 19:16			34	80	85		
2/11/2023 19:20			23	74	81	Passenger	
2/11/2023 20:50			84	75	81		
2/11/2023 22:07			72	72	83		
2/11/2023 22:21			46	78	84		
2/11/2023 22:49			31	74	80		
2/11/2023 23:05			47	64	75		
2/11/2023 23:29			36	74	80		
3/11/2023 0:15			68	76	81		
3/11/2023 0:38			56	76	81		
3/11/2023 1:14			36	71	81		
3/11/2023 1:32			34	65	72		
3/11/2023 1:51			98	73	89		
3/11/2023 2:44			34	70	79		
3/11/2023 3:12			55	67	81		
3/11/2023 3:26			45	66	77		
3/11/2023 3:54			81	72	84	Passenger	
3/11/2023 4:11			43	78	83		
3/11/2023 4:45			30	78	83		
3/11/2023 4:53			37	81	86		
3/11/2023 5:40			45	69	74		
3/11/2023 6:12			47	75	87	Passenger	
3/11/2023 7:47			39	67	80		
3/11/2023 8:57			90	71	83		
3/11/2023 10:05			32	72	82		
3/11/2023 10:51			51	73	80		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/11/2023 11:29			95	70	81		
3/11/2023 12:05			77	70	83	Passenger	
3/11/2023 12:31			28	81	86		
3/11/2023 12:42			77	68	80	Passenger	
3/11/2023 12:49			38	72	77		
3/11/2023 13:08			51	69	80	Not Clear	
3/11/2023 13:43			28	76	85		
3/11/2023 14:10			27	79	83		
3/11/2023 14:51			105	72	82	Passenger	Wind
3/11/2023 15:14			98	68	74		Wind
3/11/2023 16:08			33	73	80	Passenger	Wind
3/11/2023 17:31			62	68	81		Wind
3/11/2023 18:12			67	66	77		Wind
3/11/2023 18:52			34	74	81		
3/11/2023 19:16			77	77	83		
3/11/2023 20:13			31	74	78		
3/11/2023 20:32			44	79	84		
3/11/2023 20:46			63	78	84		
3/11/2023 21:19			33	50	57	Not Clear	
3/11/2023 21:36			104	71	80		
3/11/2023 22:02			54	68	80		
3/11/2023 23:09			34	73	77		
4/11/2023 1:03			41	69	75		
4/11/2023 2:31			35	68	76		
4/11/2023 2:53			48	65	78		
4/11/2023 5:18			33	72	77		
4/11/2023 6:28			13	75	87	Not Clear	
4/11/2023 7:51			37	74	81		
4/11/2023 8:42			101	68	80		
4/11/2023 9:05			95	69	79		
4/11/2023 11:31			68	68	76		Rain
4/11/2023 11:38			73	73	85	Passenger	Rain
4/11/2023 11:44			49	78	85		Rain
4/11/2023 12:26			48	76	82	Passenger	
4/11/2023 12:52			40	79	85		
4/11/2023 14:31			63	72	85		Wind
4/11/2023 15:42			47	77	95	Not Clear	Wind
4/11/2023 16:28			39	79	87		Wind
4/11/2023 16:29			102	72	83		Wind
4/11/2023 16:58			42	80	85		Wind
4/11/2023 17:12			34	82	91		Wind
4/11/2023 17:13			34	80	86		Wind
4/11/2023 18:26			46	81	90		
4/11/2023 18:48			147	63	79	Passenger	
4/11/2023 18:59			147	65	75		
4/11/2023 19:15			12	74	79	Not Clear	
4/11/2023 19:16			35	75	87	Passenger	
4/11/2023 19:59			69	69	79		
4/11/2023 20:06			50	69	83		
4/11/2023 20:44			98	69	82	Passenger	
4/11/2023 20:59			36	76	86		
4/11/2023 21:10			32	70	80		
4/11/2023 21:33			75	64	76		
4/11/2023 22:28			60	75	80		
4/11/2023 22:38			36	75	82		
5/11/2023 0:24			69	72	83	Passenger	
5/11/2023 0:32			103	70	83		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
5/11/2023 1:31			20	74	83		
5/11/2023 1:50			66	70	82		Rain
5/11/2023 2:18			45	71	80		Rain
5/11/2023 4:17			56	67	80		Rain
5/11/2023 5:23			40	67	76		Rain
5/11/2023 5:55			34	72	77		Wind
5/11/2023 6:09			64	75	87	Passenger	Wind
5/11/2023 7:23			60	68	83		Rain
5/11/2023 7:27			46	76	81		Rain
5/11/2023 9:45			49	66	81	Passenger	Rain
5/11/2023 9:57			64	73	81		Rain
5/11/2023 10:55			62	71	82	Passenger	
5/11/2023 11:17			46	78	84		Wind
5/11/2023 12:15			97	78	87		Wind
5/11/2023 13:40			97	69	79		Wind
5/11/2023 13:46			35	70	81		Wind
5/11/2023 16:28			43	78	84		Wind
5/11/2023 17:27			40	79	86		Wind
5/11/2023 17:30			59	67	79		Wind
5/11/2023 20:13			14	78	85	Not Clear	
5/11/2023 20:30			46	79	85		
5/11/2023 20:55			32	73	79		
5/11/2023 20:59			37	67	76		
5/11/2023 22:09			74	73	95		
5/11/2023 22:35			43	67	76		
5/11/2023 22:48			14	75	80	Not Clear	
5/11/2023 22:58			43	71	80		
5/11/2023 23:05			38	72	80		
6/11/2023 0:39			68	71	84		
6/11/2023 2:11			32	68	78		
6/11/2023 2:33			44	83	91		
6/11/2023 2:44			28	78	83		
6/11/2023 3:08			42	80	86		
6/11/2023 3:26			64	77	83		
6/11/2023 4:22			44	78	84		
6/11/2023 4:25			72	69	80		
6/11/2023 4:39			24	80	85		
6/11/2023 4:40			94	69	80		
6/11/2023 4:57			45	73	80		
6/11/2023 6:18			32	72	77		
6/11/2023 6:43			24	61	76	Not Clear	
6/11/2023 7:07			38	68	79		
6/11/2023 10:05			40	70	78		
6/11/2023 10:11			38	73	81		
6/11/2023 10:13			42	76	82		
6/11/2023 10:38			28	78	87		
6/11/2023 11:28			31	81	91		
6/11/2023 11:43			79	70	80	Passenger	
6/11/2023 11:53			100	69	79	Passenger	
6/11/2023 12:30			38	73	82		
6/11/2023 12:37			51	77	83		
6/11/2023 12:39			46	67	81		
6/11/2023 13:27			25	75	81		
6/11/2023 17:07			58	69	82		
6/11/2023 19:02			39	69	74		
6/11/2023 19:19			36	79	85		
6/11/2023 19:59			34	74	81		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
6/11/2023 20:28			54	76	82		
6/11/2023 20:45			63	81	91		
6/11/2023 21:27			42	79	85		
6/11/2023 21:39			28	75	79		
6/11/2023 22:55			48	73	83		
6/11/2023 23:01			45	70	76		
7/11/2023 0:41			38	79	86		
7/11/2023 0:49			32	77	84		
7/11/2023 1:12			35	71	80		
7/11/2023 1:23			66	78	86		
7/11/2023 2:25			62	75	89		
7/11/2023 3:01			66	66	79		
7/11/2023 3:39			74	74	90		
7/11/2023 4:25			36	80	87		
7/11/2023 6:17			37	73	80		
7/11/2023 7:27			64	63	73		
7/11/2023 9:11			107	66	75		
7/11/2023 9:28			12	67	76	Not Clear	
7/11/2023 9:47			33	73	83		
7/11/2023 10:57			49	74	79		
7/11/2023 11:09			41	77	82		
7/11/2023 11:35			69	71	86		
7/11/2023 11:38			46	78	85		
7/11/2023 12:06			42	68	81		
7/11/2023 12:24			50	65	76		
7/11/2023 13:02			46	71	81		
7/11/2023 13:23			102	69	80	Passenger	Wind
7/11/2023 13:28			23	77	84		Wind
7/11/2023 15:51			56	68	81		Wind
7/11/2023 16:17			92	65	80		Wind
7/11/2023 16:28			83	69	80		Wind
7/11/2023 16:36			37	54	63	Not Clear	Wind
7/11/2023 17:33			84	67	85		Wind
7/11/2023 19:06			38	71	79		
7/11/2023 19:15			39	79	89		
7/11/2023 19:24			45	71	81		
7/11/2023 21:24			37	80	85		
7/11/2023 21:29			73	77	86		
7/11/2023 21:58			78	69	84		
7/11/2023 22:28			67	74	83	Passenger	
8/11/2023 0:12			61	71	83	Passenger	
8/11/2023 0:39			30	74	80		
8/11/2023 0:54			45	71	81		
8/11/2023 1:25			51	70	81		
8/11/2023 1:46			54	69	80		
8/11/2023 2:01			83	69	81		
8/11/2023 2:09			42	78	83		
8/11/2023 2:29			43	72	85		
8/11/2023 2:54			42	81	88		
8/11/2023 3:05			48	71	84		
8/11/2023 3:26			43	68	74		
8/11/2023 3:46			70	73	86	Passenger	
8/11/2023 4:14			32	68	77		
8/11/2023 5:54			55	67	79		
8/11/2023 6:10			43	70	76		
8/11/2023 8:55			118	66	86	Passenger	
8/11/2023 9:16			93	68	83	Passenger	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
8/11/2023 9:32			14	69	78	Not Clear	
8/11/2023 9:42			39	71	81		
8/11/2023 10:13			34	72	82		
8/11/2023 11:20			81	70	85		
8/11/2023 11:45			33	75	86		
8/11/2023 12:27			38	77	84		
8/11/2023 13:02			62	70	79		
8/11/2023 14:18			134	69	81	Passenger	Wind
8/11/2023 14:38			28	72	79		Wind
8/11/2023 15:20			31	69	84	Not Clear	Wind
8/11/2023 15:51			97	74	97	Passenger	Wind
8/11/2023 17:05			49	71	84		Wind
8/11/2023 17:28			46	73	85		
8/11/2023 19:06			35	71	80		
8/11/2023 19:46			41	78	83		
8/11/2023 19:59			34	75	83		
8/11/2023 20:19			28	75	80		
8/11/2023 20:43			60	78	86		
8/11/2023 21:02			40	67	75		
8/11/2023 21:43			48	69	79	Passenger	
8/11/2023 22:18			22	71	83	Passenger	
8/11/2023 23:03			28	73	80		
8/11/2023 23:15			43	68	79		
8/11/2023 23:52			37	75	82		
8/11/2023 23:58			13	76	82	Passenger	

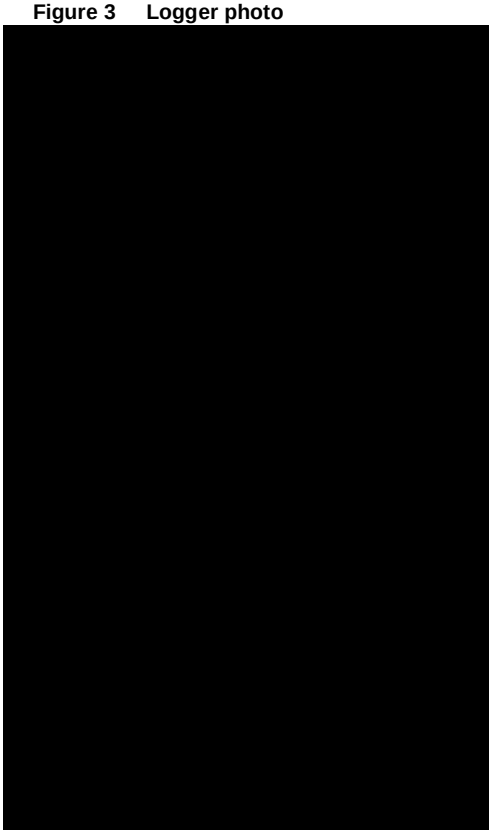
22 Fraser Road, Canley Vale

Table 9 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
2/11/2023	49	57
3/11/2023	48	57
4/11/2023	50	57
5/11/2023	48	57
6/11/2023	49	57
7/11/2023	48	57
8/11/2023	49	57
9/11/2023	49	57
Overall	**49**	**57**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 3 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
2/11/2023 0:32			53	64	74		
2/11/2023 0:57			101	60	72		
2/11/2023 1:09			44	62	70		
2/11/2023 1:39			40	62	70		
2/11/2023 2:43			58	60	67		
2/11/2023 2:58			48	55	62		
2/11/2023 3:56			66	62	70		
2/11/2023 4:00			81	53	60		
2/11/2023 4:11			51	57	64		
2/11/2023 5:29			41	64	69		
2/11/2023 7:12			44	60	71		
2/11/2023 9:13			82	62	71		
2/11/2023 10:45			47	65	80		
2/11/2023 11:35			65	68	82	Not Clear	
2/11/2023 11:49			55	66	88		
2/11/2023 12:08			44	67	84	Passenger	
2/11/2023 12:15			42	62	69		
2/11/2023 12:29			76	63	76		
2/11/2023 12:45			69	57	70		
2/11/2023 13:43			51	59	70	Not Clear	
2/11/2023 14:16			53	63	72		
2/11/2023 14:24			38	61	68		
2/11/2023 14:33			33	59	66		
2/11/2023 15:06			82	64	76		
2/11/2023 15:16			26	74	93	Not Clear	
2/11/2023 15:43			29	62	71	Not Clear	
2/11/2023 16:51			32	61	69		
2/11/2023 17:14			62	62	67		
2/11/2023 18:37			53	63	70		Wind
2/11/2023 18:50			32	66	77		
2/11/2023 19:13			40	62	71		
2/11/2023 19:28			37	68	79		
2/11/2023 21:01			12	62	55	Not Clear	
2/11/2023 21:41			49	55	63		
2/11/2023 22:14			71	65	74		
2/11/2023 22:29			60	63	70		
2/11/2023 22:56			39	64	73		
2/11/2023 23:14			38	61	72		
2/11/2023 23:22			36	66	76		
3/11/2023 0:44			40	63	68		
3/11/2023 1:05			53	61	66		
3/11/2023 1:24			27	61	68		
3/11/2023 1:43			66	63	74		
3/11/2023 2:51			38	62	66		
3/11/2023 3:03			66	58	65		
3/11/2023 3:10			39	57	65		
3/11/2023 3:19			45	62	73		
3/11/2023 3:57			37	63	68		
3/11/2023 4:02			74	61	68		
3/11/2023 4:35			31	59	67	Passenger	
3/11/2023 4:44			50	61	67		
3/11/2023 5:50			43	63	71		
3/11/2023 6:05			63	64	71		
3/11/2023 7:37			59	59	71	Not Clear	
3/11/2023 9:07			95	72	90	Not Clear	
3/11/2023 9:56			55	62	68		
3/11/2023 10:39			72	60	70		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/11/2023 11:36			92	63	68		
3/11/2023 12:18			76	59	72	Not Clear	
3/11/2023 12:32			48	63	71		
3/11/2023 12:47			46	66	71		
3/11/2023 13:01			37	66	72		
3/11/2023 13:19			48	58	66		
3/11/2023 13:54			37	63	69	Passenger	
3/11/2023 14:01			41	44	61	Not Clear	
3/11/2023 14:41			35	62	70	Passenger	Wind
3/11/2023 15:04			111	62	73	Passenger	Wind
3/11/2023 16:17			35	59	65	Passenger	Wind
3/11/2023 17:40			66	61	67	Passenger	Wind
3/11/2023 18:04			59	61	67		Wind
3/11/2023 18:59			38	62	69		
3/11/2023 19:08			48	64	70		
3/11/2023 19:33			97	56	69		
3/11/2023 20:20			94	59	72	Passenger	
3/11/2023 20:26			106	46	61	Not Clear	
3/11/2023 20:55			57	52	64	Not Clear	
3/11/2023 21:43			100	63	68		
3/11/2023 21:54			47	65	76		
3/11/2023 23:16			39	64	74		
4/11/2023 0:56			45	66	77	Passenger	
4/11/2023 2:38			39	62	69		
4/11/2023 2:45			50	57	62		
4/11/2023 5:26			47	64	74	Passenger	
4/11/2023 7:06			43	60	65		
4/11/2023 7:44			40	66	71		
4/11/2023 8:50			105	63	76	Passenger	
4/11/2023 9:12			92	62	74	Passenger	
4/11/2023 11:24			60	61	65		Rain
4/11/2023 11:27			42	65	78		Rain
4/11/2023 11:44			67	62	70		Rain
4/11/2023 12:39			45	66	72		
4/11/2023 12:42			85	59	71	Not Clear	
4/11/2023 14:24			60	63	72		Wind
4/11/2023 15:34			51	59	69	Passenger	Wind
4/11/2023 15:53			30	57	68	Not Clear	Wind
4/11/2023 16:21			101	61	70	Not Clear	Wind
4/11/2023 16:41			38	67	73		Wind
4/11/2023 16:44			62	59	69		Wind
4/11/2023 17:02			44	64	74		Wind
4/11/2023 17:23			41	65	74		Wind
4/11/2023 18:11			67	62	69	Passenger	Wind
4/11/2023 18:41			95	62	83		
4/11/2023 19:08			101	63	72	Passenger	
4/11/2023 19:23			36	72	84		
4/11/2023 19:52			65	62	72		
4/11/2023 20:13			52	61	66		
4/11/2023 20:37			59	63	74		
4/11/2023 20:53			38	67	75		
4/11/2023 21:03			39	62	72		
4/11/2023 21:25			49	60	67		
4/11/2023 22:41			43	67	72		
4/11/2023 22:44			35	65	75		
5/11/2023 0:16			65	61	67		
5/11/2023 0:39			87	63	68		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
5/11/2023 1:23			64	61	72	Passenger	
5/11/2023 1:58			59	64	77		Rain
5/11/2023 2:11			41	65	70		Rain
5/11/2023 4:27			50	61	70	Passenger	Rain
5/11/2023 5:16			35	63	74		
5/11/2023 6:02			46	64	71		Wind
5/11/2023 6:15			67	65	71		Wind
5/11/2023 7:30			63	63	74		Rain
5/11/2023 7:39			16	59	70	Not Clear	Rain
5/11/2023 9:35			52	59	65	Not Clear	Rain
5/11/2023 10:11			50	65	73		Rain
5/11/2023 10:47			42	65	71		
5/11/2023 11:01			48	61	66		
5/11/2023 12:03			68	64	72		Wind
5/11/2023 12:23			91	63	73		Wind
5/11/2023 13:32			66	61	69	Passenger	Wind
5/11/2023 13:53			52	61	73		Wind
5/11/2023 16:41			52	64	69		Wind
5/11/2023 17:08			30	59	68	Not Clear	
5/11/2023 17:22			60	65	75		Wind
5/11/2023 17:42			58	63	68		Wind
5/11/2023 20:01			35	65	71	Not Clear	
5/11/2023 20:13			51	57	63		
5/11/2023 20:47			38	66	76		
5/11/2023 21:06			42	61	67		
5/11/2023 22:16			63	65	71	Passenger	
5/11/2023 22:27			59	60	69	Passenger	
5/11/2023 22:51			58	65	74		
5/11/2023 23:12			45	64	70		
6/11/2023 0:31			74	61	69		
6/11/2023 2:17			36	61	67		
6/11/2023 2:25			39	44	55	Not Clear	
6/11/2023 2:37			34	32	38	Not Clear	
6/11/2023 3:01			50	64	75		
6/11/2023 3:15			41	62	69		
6/11/2023 3:18			50	66	74		
6/11/2023 4:31			69	63	71		
6/11/2023 4:37			49	65	70		
6/11/2023 4:47			90	63	70		
6/11/2023 5:11			49	60	71		
6/11/2023 6:26			53	63	70		
6/11/2023 6:59			38	63	75		
6/11/2023 9:56			49	62	68		
6/11/2023 10:20			39	63	68		
6/11/2023 10:23			45	67	73		
6/11/2023 10:29			59	63	69		
6/11/2023 11:16			89	56	71	Not Clear	
6/11/2023 11:33			65	55	62	Not Clear	
6/11/2023 12:02			62	60	67	Not Clear	
6/11/2023 12:19			94	54	63		
6/11/2023 12:26			132	58	72	Not Clear	
6/11/2023 12:51			41	60	65		
6/11/2023 13:44			35	64	71		
6/11/2023 17:14			63	64	72		
6/11/2023 19:09			41	64	72	Passenger	
6/11/2023 19:27			40	68	74		
6/11/2023 19:49			41	65	72		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
6/11/2023 20:17			77	60	72	Passenger	
6/11/2023 20:55			23	61	73	Not Clear	
6/11/2023 21:38			42	67	78		
6/11/2023 21:48			21	56	69	Not Clear	
6/11/2023 22:47			36	66	73		
6/11/2023 23:09			42	64	70		
7/11/2023 0:41			13	63	72	Not Clear	
7/11/2023 0:49			48	65	70		
7/11/2023 1:05			38	65	73		
7/11/2023 1:12			39	55	66	Not Clear	
7/11/2023 2:18			66	66	77		
7/11/2023 2:51			67	60	65		
7/11/2023 3:46			71	63	73		
7/11/2023 4:12			33	65	70		
7/11/2023 6:25			36	65	71		
7/11/2023 7:16			62	59	72		
7/11/2023 9:21			93	63	72	Passenger	
7/11/2023 9:36			26	54	64	Not Clear	
7/11/2023 9:54			39	65	71		
7/11/2023 10:51			88	56	62		
7/11/2023 11:15			78	60	70		
7/11/2023 11:25			135	56	65	Not Clear	
7/11/2023 12:17			46	61	75		
7/11/2023 12:34			39	63	72		
7/11/2023 12:53			61	63	72		
7/11/2023 13:12			50	60	67		
7/11/2023 13:42			40	62	70		Wind
7/11/2023 15:40			44	64	73	Not Clear	Wind
7/11/2023 16:05			48	59	69	Not Clear	Wind
7/11/2023 16:39			85	64	72		Wind
7/11/2023 17:42			62	62	68		Wind
7/11/2023 19:00			33	66	71		
7/11/2023 19:16			39	66	74		
7/11/2023 19:25			56	65	72		
7/11/2023 21:07			154	55	64		
7/11/2023 21:40			47	57	66	Not Clear	
7/11/2023 21:51			104	61	69		
7/11/2023 22:36			86	61	76		
8/11/2023 0:19			49	60	66	Passenger	
8/11/2023 0:31			32	62	69		
8/11/2023 0:45			42	64	74		
8/11/2023 1:17			55	66	82		
8/11/2023 1:39			56	62	71		
8/11/2023 1:53			68	63	74		
8/11/2023 2:01			53	59	65		
8/11/2023 2:22			49	63	74		
8/11/2023 2:46			41	65	69		
8/11/2023 3:12			52	62	73		
8/11/2023 3:34			46	62	70		
8/11/2023 3:53			52	63	74		
8/11/2023 4:07			33	62	71		
8/11/2023 5:46			49	61	71		
8/11/2023 6:18			41	63	71		
8/11/2023 9:06			94	62	73		
8/11/2023 9:23			42	61	73	Not Clear	
8/11/2023 9:25			89	62	70	Passenger	
8/11/2023 9:54			51	63	71		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
8/11/2023 10:05			67	60	72		
8/11/2023 11:11			28	59	64	Not Clear	
8/11/2023 11:36			93	61	72		
8/11/2023 12:47			48	63	68		
8/11/2023 12:52			125	57	69	Passenger	
8/11/2023 14:29			120	62	72		Wind
8/11/2023 14:52			69	56	66		Wind
8/11/2023 15:30			35	60	69	Not Clear	Wind
8/11/2023 15:43			68	63	87	Not Clear	Wind
8/11/2023 17:12			56	63	72	Passenger	Wind
8/11/2023 17:21			52	64	79		
8/11/2023 19:13			38	65	76		
8/11/2023 19:52			36	66	72		
8/11/2023 19:56			52	64	68		
8/11/2023 20:30			39	44	50	Not Clear	
8/11/2023 20:55			50	55	68	Not Clear	
8/11/2023 21:10			51	61	71		
8/11/2023 21:34			45	61	65		
8/11/2023 22:12			24	63	73		
8/11/2023 23:10			45	63	71	Passenger	
8/11/2023 23:24			48	60	68		
8/11/2023 23:44			43	65	75		
8/11/2023 23:55			15	57	67	Not Clear	
9/11/2023 0:05			55	56	70		
9/11/2023 0:57			49	64	73		
9/11/2023 1:18			87	62	69		
9/11/2023 1:21			38	38	43	Not Clear	
9/11/2023 1:33			55	62	69		
9/11/2023 2:30			43	63	68		
9/11/2023 2:39			51	63	68		
9/11/2023 2:54			25	54	64		
9/11/2023 3:58			75	63	72		
9/11/2023 5:01			69	61	66		
9/11/2023 6:19			45	63	70		
9/11/2023 8:25			58	65	75	Not Clear	
9/11/2023 9:46			46	63	68		
9/11/2023 10:01			49	57	71	Not Clear	
9/11/2023 10:34			102	62	72		
9/11/2023 11:09			27	60	69		
9/11/2023 11:16			56	63	69		
9/11/2023 11:26			62	58	68		
9/11/2023 11:59			140	57	70		
9/11/2023 12:16			44	62	71		
9/11/2023 12:25			50	61	66		
9/11/2023 13:45			48	57	63		Wind
9/11/2023 14:05			60	61	67		Wind
9/11/2023 14:27			34	57	66	Not Clear	Wind
9/11/2023 14:45			44	63	75	Not Clear	
9/11/2023 15:16			99	64	74	Not Clear	Wind
9/11/2023 17:16			60	67	76		
9/11/2023 18:01			77	62	72		
9/11/2023 18:23			66	65	77		
9/11/2023 19:20			40	66	73		
9/11/2023 19:33			38	67	77		
9/11/2023 20:27			48	64	69		
9/11/2023 21:09			49	62	68		
9/11/2023 21:21			56	64	74		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
9/11/2023 21:37			47	60	68		
9/11/2023 21:58			76	65	72		
9/11/2023 22:19			42	68	73		
9/11/2023 22:39			19	54	57		
9/11/2023 23:17			58	62	70		
9/11/2023 23:35			40	65	71		
9/11/2023 23:41			36	37	42	Not Clear	
9/11/2023 23:59			68	59	65		

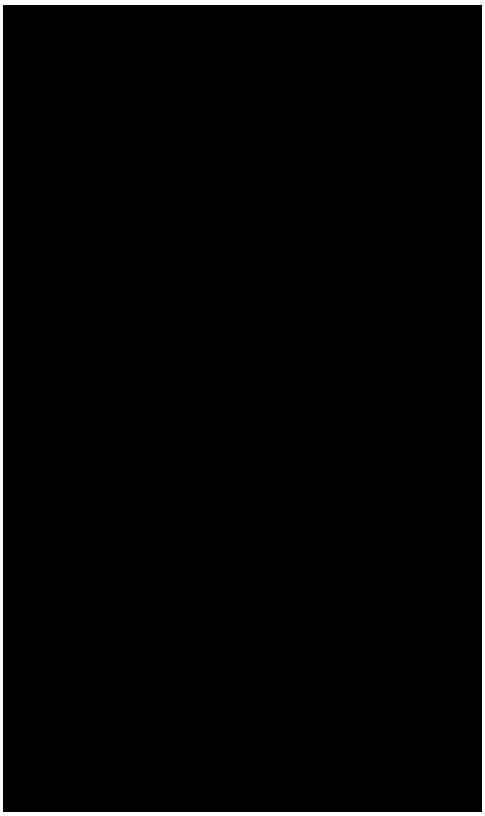
75 Wattle Avenue, Carramar

Table 10 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
2/11/2023	46	60
3/11/2023	46	60
4/11/2023	45	60
5/11/2023	45	60
6/11/2023	45	60
7/11/2023	46	60
8/11/2023	45	60
9/11/2023	47	60
Overall	**46**	**60**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 4 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
2/11/2023 0:31			55	61	69		
2/11/2023 0:58			46	61	68		
2/11/2023 1:08			48	60	67		
2/11/2023 1:39			33	65	69		
2/11/2023 2:42			56	61	65		
2/11/2023 3:00			35	58	63		
2/11/2023 3:57			75	60	69		
2/11/2023 3:59			33	60	65		
2/11/2023 4:12			52	57	68		
2/11/2023 5:29			33	63	68		
2/11/2023 7:12			41	59	70		
2/11/2023 9:14			96	60	66		
2/11/2023 10:44			51	54	61		
2/11/2023 10:46			60	65	68		
2/11/2023 11:36			63	61	73		
2/11/2023 11:48			83	63	74	Passenger	
2/11/2023 12:09			39	66	69		
2/11/2023 12:16			50	61	71		
2/11/2023 12:27			58	59	69		
2/11/2023 12:44			46	60	66		
2/11/2023 13:41			64	59	67	Not Clear	
2/11/2023 14:18			46	59	70		
2/11/2023 14:26			33	62	66		
2/11/2023 14:31			32	63	70		
2/11/2023 15:06			115	61	70		
2/11/2023 15:15			74	57	67		
2/11/2023 15:41			70	59	69	Passenger	
2/11/2023 16:50			75	58	67	Not Clear	
2/11/2023 17:15			54	62	70		Wind
2/11/2023 18:38			60	65	67	Passenger	Wind
2/11/2023 18:49			30	63	67		
2/11/2023 19:12			40	59	67		
2/11/2023 19:29			31	71	73		
2/11/2023 21:39			14	62	67		
2/11/2023 22:15			81	63	67		
2/11/2023 22:31			57	57	61	Not Clear	
2/11/2023 22:57			49	61	66		
2/11/2023 23:15			46	57	67		
2/11/2023 23:21			35	64	73		
3/11/2023 0:45			39	63	69		
3/11/2023 1:04			50	62	67		
3/11/2023 1:23			25	61	65		
3/11/2023 1:42			62	64	72		
3/11/2023 2:52			44	61	66		
3/11/2023 3:02			65	58	65		
3/11/2023 3:14			29	59	66		
3/11/2023 3:18			46	57	66		
3/11/2023 3:57			33	61	68		
3/11/2023 4:03			92	61	69	Passenger	
3/11/2023 4:43			47	58	63		
3/11/2023 5:51			41	63	65		
3/11/2023 6:04			61	65	69		
3/11/2023 7:35			64	55	65	Not Clear	
3/11/2023 9:08			105	60	69		
3/11/2023 9:55			45	62	70	Passenger	
3/11/2023 10:37			63	58	66		
3/11/2023 11:37			106	64	76	Passenger	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/11/2023 12:19			85	57	69		
3/11/2023 12:30			49	57	69		
3/11/2023 12:48			54	66	71		
3/11/2023 13:02			42	62	69		
3/11/2023 13:20			48	57	68		
3/11/2023 13:55			26	64	67		
3/11/2023 14:40			36	62	70	Not Clear	Wind
3/11/2023 15:02			142	58	67		Wind
3/11/2023 16:18			31	60	69		Wind
3/11/2023 17:40			81	61	71	Passenger	Wind
3/11/2023 18:03			56	60	67		Wind
3/11/2023 19:00			35	62	65		
3/11/2023 19:07			48	61	68		
3/11/2023 19:36			52	53	57	Not Clear	
3/11/2023 20:18			59	58	65		
3/11/2023 21:44			110	63	68		
3/11/2023 21:53			47	66	76		
3/11/2023 23:17			42	62	68		
4/11/2023 0:55			40	62	67		
4/11/2023 2:39			36	61	69		
4/11/2023 2:44			42	59	66		
4/11/2023 5:26			41	63	71		
4/11/2023 7:06			43	61	70		
4/11/2023 7:43			33	64	69		
4/11/2023 8:51			107	60	80		
4/11/2023 9:13			124	59	66		
4/11/2023 11:24			60	63	67		Rain
4/11/2023 11:26			36	62	67		Rain
4/11/2023 11:45			82	62	65	Passenger	
4/11/2023 12:40			36	70	76		
4/11/2023 12:41			34	61	65		
4/11/2023 14:23			62	63	66		Wind
4/11/2023 15:33			53	61	68	Passenger	Wind
4/11/2023 15:54			32	59	68	Not Clear	Wind
4/11/2023 16:20			97	62	71	Passenger	Wind
4/11/2023 16:42			44	68	76		Wind
4/11/2023 17:24			51	65	68		Wind
4/11/2023 18:11			36	61	67		Wind
4/11/2023 18:40			95	61	68		
4/11/2023 19:09			116	62	72		
4/11/2023 19:24			38	64	74		
4/11/2023 19:51			68	62	71	Passenger	
4/11/2023 20:36			70	60	71	Passenger	
4/11/2023 20:51			34	63	67		
4/11/2023 21:03			34	63	65	Passenger	
4/11/2023 21:25			43	61	70		
4/11/2023 22:41			42	69	72		
4/11/2023 22:45			35	63	67		
5/11/2023 0:15			61	63	68		
5/11/2023 0:39			98	63	70		
5/11/2023 1:22			74	62	70	Passenger	
5/11/2023 1:59			62	61	72		Rain
5/11/2023 2:10			43	68	76		Rain
5/11/2023 4:28			48	60	70		Rain
5/11/2023 5:15			40	62	72		
5/11/2023 6:03			51	63	72		Wind
5/11/2023 6:16			48	65	75	Passenger	Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
5/11/2023 7:31			65	58	67		Rain
5/11/2023 9:34			46	59	67	Passenger	Rain
5/11/2023 10:12			44	67	70		Rain
5/11/2023 10:46			40	62	67		
5/11/2023 10:59			33	58	64		
5/11/2023 12:02			53	57	63		Wind
5/11/2023 12:24			107	62	72		Wind
5/11/2023 13:31			89	61	67		Wind
5/11/2023 13:54			43	62	68		Wind
5/11/2023 16:42			46	67	71		Wind
5/11/2023 17:09			26	62	68		
5/11/2023 17:21			59	58	70		Wind
5/11/2023 17:43			53	66	72		Wind
5/11/2023 20:11			50	58	63		
5/11/2023 20:47			33	65	68		
5/11/2023 21:07			35	61	69		
5/11/2023 22:17			89	66	76		
5/11/2023 22:26			51	60	69		
5/11/2023 22:50			39	62	69		
5/11/2023 23:13			39	65	71		
6/11/2023 0:30			67	65	76		
6/11/2023 2:18			33	58	66		
6/11/2023 3:00			45	59	64		
6/11/2023 3:15			38	61	65		
6/11/2023 3:18			46	63	68		
6/11/2023 4:33			80	61	69	Passenger	
6/11/2023 4:38			56	64	70		
6/11/2023 4:48			100	63	73		
6/11/2023 5:12			54	61	65		
6/11/2023 6:27			49	63	74		
6/11/2023 6:58			35	64	73		
6/11/2023 9:55			48	59	64		
6/11/2023 10:21			46	64	74		
6/11/2023 10:24			35	71	75		
6/11/2023 10:28			42	63	72		
6/11/2023 11:14			43	61	70		
6/11/2023 11:31			48	58	65		
6/11/2023 12:04			27	62	64		
6/11/2023 12:17			82	56	65		
6/11/2023 12:26			40	59	64		
6/11/2023 12:52			44	59	63		
6/11/2023 13:45			54	60	68		
6/11/2023 17:15			57	62	66		Wind
6/11/2023 19:10			62	60	68	Passenger	
6/11/2023 19:28			34	72	75		
6/11/2023 19:48			34	64	68		
6/11/2023 20:16			64	57	63		
6/11/2023 21:39			67	65	71		
6/11/2023 22:46			36	64	69		
6/11/2023 23:10			39	62	69		
7/11/2023 0:50			47	68	71		
7/11/2023 1:04			40	62	68		
7/11/2023 2:17			66	66	78		
7/11/2023 2:50			64	60	67		
7/11/2023 3:47			75	63	75		
7/11/2023 4:12			32	62	66		
7/11/2023 6:25			29	64	68		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
7/11/2023 7:15			55	57	67		
7/11/2023 9:22			109	64	73		
7/11/2023 9:37			20	59	67	Not Clear	
7/11/2023 9:55			31	71	71		
7/11/2023 10:50			34	60	66		
7/11/2023 11:13			63	57	63		
7/11/2023 11:16			47	66	69		
7/11/2023 11:22			145	56	66		
7/11/2023 12:18			41	60	68		
7/11/2023 12:35			76	59	69		
7/11/2023 12:51			68	60	67		
7/11/2023 13:10			86	62	75	Not Clear	
7/11/2023 13:43			44	60	65		Wind
7/11/2023 15:38			83	56	63	Not Clear	Wind
7/11/2023 16:03			154	56	68	Not Clear	Wind
7/11/2023 16:40			32	70	78		Wind
7/11/2023 17:43			60	62	68		Wind
7/11/2023 18:59			37	64	71		
7/11/2023 19:15			39	62	67		
7/11/2023 19:26			45	67	71		
7/11/2023 21:06			42	63	68		
7/11/2023 21:49			109	63	75		
7/11/2023 22:38			25	59	63	Not Clear	
8/11/2023 0:20			38	59	63		
8/11/2023 0:31			23	61	65		
8/11/2023 0:44			40	62	67		
8/11/2023 1:16			53	63	71		
8/11/2023 1:38			52	63	70		
8/11/2023 1:52			62	64	74		
8/11/2023 2:00			37	60	65		
8/11/2023 2:21			39	60	64		
8/11/2023 2:46			41	63	66		
8/11/2023 3:13			27	66	74		
8/11/2023 3:35			46	60	67		
8/11/2023 3:55			76	58	69		
8/11/2023 4:06			29	62	66		
8/11/2023 5:46			42	58	63		
8/11/2023 6:19			41	62	67		
8/11/2023 9:07			80	62	71		
8/11/2023 9:26			107	59	68		
8/11/2023 9:55			71	62	75		
8/11/2023 10:04			41	61	66		
8/11/2023 11:09			58	56	65	Passenger	
8/11/2023 11:34			91	56	63		
8/11/2023 12:48			55	64	67		
8/11/2023 12:51			86	59	66		
8/11/2023 14:30			130	59	64		Wind
8/11/2023 14:52			30	59	68		Wind
8/11/2023 15:41			71	62	75	Not Clear	Wind
8/11/2023 17:13			60	61	69		Wind
8/11/2023 17:20			47	64	77		
8/11/2023 19:13			43	61	67		
8/11/2023 19:51			32	67	68		
8/11/2023 19:57			48	67	71		
8/11/2023 21:11			48	58	63		
8/11/2023 21:33			38	59	64		
8/11/2023 22:12			15	64	72		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
8/11/2023 23:10			45	63	68		
8/11/2023 23:26			43	57	63	Not Clear	
8/11/2023 23:43			38	66	74		
9/11/2023 0:05			12	60	65		
9/11/2023 0:56			44	62	69		
9/11/2023 1:19			96	62	72		
9/11/2023 1:32			51	59	64		
9/11/2023 2:29			41	60	65		
9/11/2023 2:39			46	62	68		
9/11/2023 2:53			14	60	69		
9/11/2023 3:59			78	61	70		
9/11/2023 5:00			68	61	66		
9/11/2023 6:20			43	62	67		
9/11/2023 8:26			83	62	70	Passenger	
9/11/2023 9:47			58	60	66		
9/11/2023 10:01			81	61	70		
9/11/2023 10:35			42	65	75		
9/11/2023 11:17			58	63	68		
9/11/2023 11:25			38	58	62		
9/11/2023 11:35			31	61	67		
9/11/2023 11:57			114	58	71		
9/11/2023 12:15			50	56	64		
9/11/2023 12:26			44	59	65		
9/11/2023 13:47			45	67	74		Wind
9/11/2023 14:05			31	66	76		Wind
9/11/2023 14:25			43	59	69		Wind
9/11/2023 14:44			65	63	73		Wind
9/11/2023 15:17			58	62	69	Not Clear	Wind
9/11/2023 17:17			62	62	69		
9/11/2023 18:00			82	61	68		
9/11/2023 18:24			68	62	69		
9/11/2023 19:20			34	63	69		
9/11/2023 19:32			35	65	68		
9/11/2023 20:28			47	67	70		
9/11/2023 21:08			46	59	65		
9/11/2023 21:22			55	64	72		
9/11/2023 21:37			54	58	66		
9/11/2023 21:57			72	67	74		
9/11/2023 22:19			38	71	78		
9/11/2023 22:53			248	47	52	Not Clear	
9/11/2023 23:18			114	62	73		
9/11/2023 23:34			37	66	67		

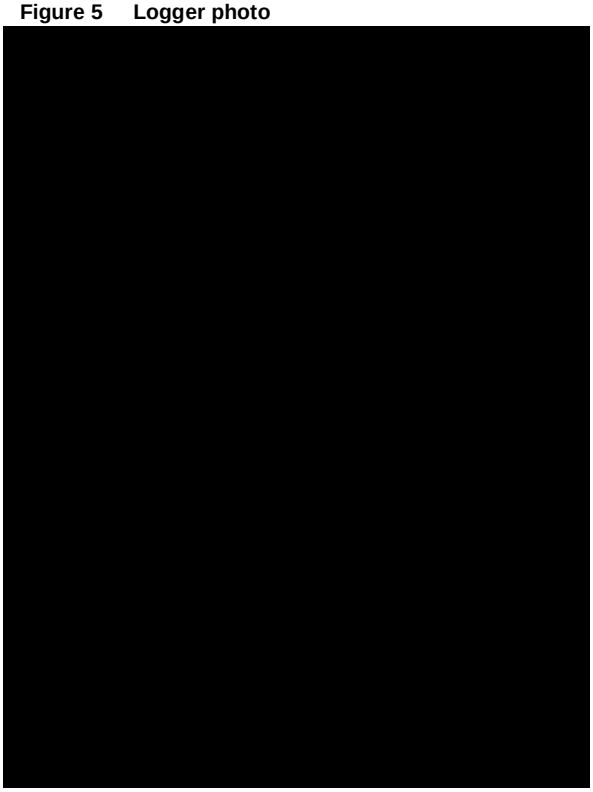
111A Wellington Road, Sefton

Table 11 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
29/11/2023	50	63
30/11/2023	49	63
1/12/2023	49	63
2/12/2023	49	63
3/12/2023	49	63
4/12/2023	49	63
5/12/2023	49	63
6/12/2023	49	63
Overall	**49**	**63**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 5 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
29/11/2023 1:04			26	68	78		
29/11/2023 1:24			74	70	81		Rain
29/11/2023 2:24			61	62	72		
29/11/2023 3:05			90	60	69		
29/11/2023 3:19			59	62	72		
29/11/2023 8:38			48	65	73		
29/11/2023 12:56			50	67	74		Wind
29/11/2023 17:47			67	66	82		
29/11/2023 19:50			80	62	71		
29/11/2023 20:31			45	63	70		
29/11/2023 21:55			44	67	74		
29/11/2023 23:00			46	60	67		
29/11/2023 23:58			95	59	68		
30/11/2023 0:21			42	66	72		
30/11/2023 0:50			48	63	72		
30/11/2023 1:18			96	58	65		
30/11/2023 1:35			92	56	62		
30/11/2023 1:39			91	57	65		
30/11/2023 1:54			64	59	69		
30/11/2023 3:00			128	59	73		
30/11/2023 3:17			79	63	71		
30/11/2023 5:20			49	64	77		
30/11/2023 14:33			37	70	81		
30/11/2023 17:42			41	65	75		
30/11/2023 20:51			72	63	71		
30/11/2023 21:46			83	62	74		
30/11/2023 23:59			82	55	64		
1/12/2023 0:55			105	58	64		
1/12/2023 1:52			54	65	75		
1/12/2023 2:26			52	60	66		
1/12/2023 3:08			71	57	64		
1/12/2023 3:29			90	59	70		
1/12/2023 5:34			42	66	79		
1/12/2023 8:58			36	67	75		
1/12/2023 16:29			51	64	71		Wind
1/12/2023 17:09			50	68	76		Wind
1/12/2023 21:46			44	62	73		
1/12/2023 23:12			126	62	73		
1/12/2023 23:24			155	53	65		
2/12/2023 1:15			42	65	71		
2/12/2023 1:19			88	53	65		
2/12/2023 4:18			47	61	70		
2/12/2023 4:33			47	62	68		
2/12/2023 7:24			44	64	70		
2/12/2023 9:06			70	64	74		
2/12/2023 13:18			64	63	73		
2/12/2023 15:02			84	62	72		
2/12/2023 16:01			86	63	70		
2/12/2023 17:26			55	63	70		
2/12/2023 17:39			63	64	73		
2/12/2023 18:19			59	61	70		
2/12/2023 22:25			49	63	70		
2/12/2023 22:35			53	61	69		
2/12/2023 23:01			110	61	69		
3/12/2023 0:11			85	62	73		
3/12/2023 0:33			84	61	69		
3/12/2023 1:08			72	62	71		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/12/2023 2:09			52	61	71		
3/12/2023 2:30			111	58	65		
3/12/2023 3:07			140	58	67		
3/12/2023 5:55			121	62	72		
3/12/2023 11:40			74	64	71		
3/12/2023 19:21			53	64	73		
3/12/2023 21:29			51	63	68		
3/12/2023 22:07			46	63	71		
3/12/2023 22:57			70	62	69		
4/12/2023 0:27			55	60	67		
4/12/2023 1:14			62	58	66		
4/12/2023 1:42			79	64	75		
4/12/2023 1:54			78	56	64		
4/12/2023 2:19			45	63	70		Rain
4/12/2023 3:34			50	59	72		
4/12/2023 3:51			93	61	67		
4/12/2023 8:50			55	65	75		
4/12/2023 10:59			80	61	72		
4/12/2023 16:39			80	62	68		
4/12/2023 18:22			42	67	74		
4/12/2023 19:32			76	58	65		
5/12/2023 0:32			57	61	72		
5/12/2023 0:39			49	65	72		
5/12/2023 2:11			71	64	75		
5/12/2023 2:56			68	60	73		
5/12/2023 3:18			87	62	69		
5/12/2023 8:33			113	61	69		
5/12/2023 10:40			81	61	69		
5/12/2023 11:33			68	60	67		
5/12/2023 17:31			59	63	69		
5/12/2023 18:51			36	67	75		
5/12/2023 19:47			69	62	71		
5/12/2023 23:59			79	60	70		
6/12/2023 1:33			135	56	66		
6/12/2023 2:21			144	63	78		
6/12/2023 3:19			95	59	67		
6/12/2023 3:38			76	60	73		
6/12/2023 8:52			111	60	75		
6/12/2023 9:04			47	65	71		
6/12/2023 9:33			35	69	81		
6/12/2023 16:02			114	63	91		Wind
6/12/2023 20:32			50	58	64		
6/12/2023 22:04			46	62	69		
6/12/2023 23:55			69	53	61		

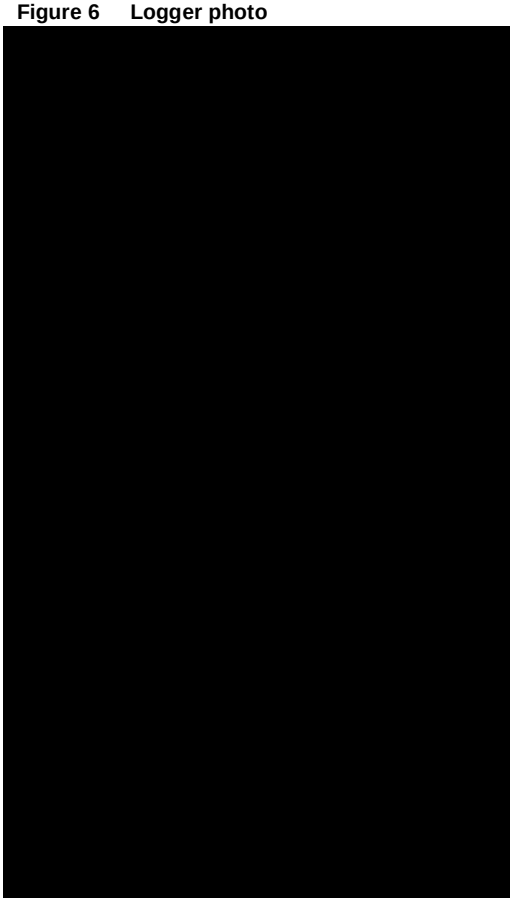
35 Wellington Road, Birrong

Table 12 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
2/11/2023	53	65
3/11/2023	54	65
4/11/2023	52	65
5/11/2023	51	65
6/11/2023	53	65
7/11/2023	55	65
8/11/2023	53	65
9/11/2023	54	65
Overall	**53**	**65**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 6 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
2/11/2023 0:24			91	66	79		
2/11/2023 0:34			81	64	71		
2/11/2023 1:06			103	62	73		
2/11/2023 1:32			77	62	75		
2/11/2023 2:13			28	65	75		
2/11/2023 2:37			90	69	82		
2/11/2023 3:11			67	61	70		
2/11/2023 3:53			66	66	79		
2/11/2023 4:03			138	62	72		
2/11/2023 4:19			89	61	72		
2/11/2023 5:35			73	68	78	Not Clear	
2/11/2023 7:18			81	67	79	Not Clear	
2/11/2023 9:19			67	67	75	Not Clear	
2/11/2023 10:33			80	66	77	Not Clear	
2/11/2023 11:01			38	69	85	Not Clear	
2/11/2023 11:32			152	64	77	Not Clear	
2/11/2023 11:46			29	70	78	Not Clear	
2/11/2023 12:08			66	68	75		
2/11/2023 12:16			55	65	77	Not Clear	
2/11/2023 12:27			41	67	76		
2/11/2023 12:36			93	63	73		
2/11/2023 13:33			77	65	74		
2/11/2023 14:24			36	68	76	Not Clear	
2/11/2023 14:33			37	64	73	Not Clear	
2/11/2023 14:37			98	66	74	Not Clear	
2/11/2023 14:53			91	67	74		
2/11/2023 15:12			115	66	75	Not Clear	
2/11/2023 15:30			67	65	73	Not Clear	
2/11/2023 16:14			36	65	74	Not Clear	Wind
2/11/2023 16:43			55	67	77		Wind
2/11/2023 17:20			92	65	79	Not Clear	Wind
2/11/2023 17:46			35	71	83		Wind
2/11/2023 18:36			62	67	74		Wind
2/11/2023 19:05			66	65	74		
2/11/2023 19:36			95	63	72	Not Clear	
2/11/2023 20:20			84	66	76		
2/11/2023 20:46			56	65	77	Not Clear	
2/11/2023 21:32			39	67	76		
2/11/2023 22:21			101	66	74		
2/11/2023 22:50			69	66	74		
2/11/2023 22:53			32	63	82	Not Clear	
2/11/2023 23:04			61	70	82		
2/11/2023 23:23			115	59	73	Passenger	
3/11/2023 0:58			56	74	86		
3/11/2023 1:14			51	64	73		
3/11/2023 1:28			123	67	81		
3/11/2023 1:44			95	60	70		
3/11/2023 2:44			113	65	77		
3/11/2023 2:58			95	58	71		
3/11/2023 3:13			112	64	74		
3/11/2023 3:24			65	62	75		
3/11/2023 3:51			74	65	78		
3/11/2023 4:09			130	64	75	Passenger	
3/11/2023 4:37			113	61	71		
3/11/2023 4:59			81	65	74		
3/11/2023 5:59			82	66	76	Passenger	
3/11/2023 7:28			66	64	74	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/11/2023 9:14			37	70	80	Not Clear	
3/11/2023 9:50			68	69	79	Passenger	
3/11/2023 10:30			88	67	75	Passenger	
3/11/2023 11:42			50	70	83	Not Clear	
3/11/2023 11:59			129	66	75	Passenger	
3/11/2023 12:27			40	65	75	Not Clear	
3/11/2023 13:00			76	62	75		
3/11/2023 13:08			80	66	74	Not Clear	
3/11/2023 13:33			85	64	76	Not Clear	
3/11/2023 14:02			35	69	77	Not Clear	
3/11/2023 14:33			70	67	80	Not Clear	Wind
3/11/2023 14:55			99	65	74	Not Clear	Wind
3/11/2023 15:37			47	68	79		Wind
3/11/2023 16:25			30	67	75		Wind
3/11/2023 17:47			27	71	78		Wind
3/11/2023 17:57			107	69	80	Passenger	Wind
3/11/2023 18:06			66	72	84		Wind
3/11/2023 18:51			73	67	74	Passenger	
3/11/2023 19:06			76	66	74		
3/11/2023 19:50			61	63	73	Not Clear	
3/11/2023 20:10			46	60	72	Not Clear	
3/11/2023 20:14			61	68	78		
3/11/2023 21:49			135	64	75	Passenger	
3/11/2023 23:23			68	66	74		
4/11/2023 0:49			85	65	77		
4/11/2023 1:51			62	49	56		
4/11/2023 2:01			92	59	69		
4/11/2023 2:44			82	61	72		
4/11/2023 5:32			96	68	82		
4/11/2023 7:14			95	62	73		
4/11/2023 7:37			76	66	74		
4/11/2023 8:58			58	69	79		
4/11/2023 9:20			30	65	74	Not Clear	
4/11/2023 11:03			82	66	75	Not Clear	Rain
4/11/2023 11:19			87	68	80		Rain
4/11/2023 11:52			79	65	75	Not Clear	
4/11/2023 12:34			36	66	74	Not Clear	
4/11/2023 12:47			64	65	74	Not Clear	
4/11/2023 13:53			77	67	80	Not Clear	Wind
4/11/2023 14:29			77	67	76		Wind
4/11/2023 15:13			23	69	80	Not Clear	Wind
4/11/2023 15:59			35	65	75	Not Clear	Wind
4/11/2023 16:13			110	65	75	Not Clear	Wind
4/11/2023 16:34			97	64	74		Wind
4/11/2023 16:48			77	65	75		Wind
4/11/2023 17:32			77	65	79		Wind
4/11/2023 18:05			86	65	75	Not Clear	Wind
4/11/2023 18:30			44	67	74	Not Clear	
4/11/2023 19:16			70	67	75		
4/11/2023 19:33			83	66	74		
4/11/2023 19:44			132	64	74		
4/11/2023 20:20			104	64	75		
4/11/2023 20:30			102	64	71		
4/11/2023 20:39			75	66	75		
4/11/2023 20:48			68	63	72		
4/11/2023 21:19			67	65	74		
4/11/2023 22:49			90	63	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
4/11/2023 22:52			81	68	79		
5/11/2023 0:08			100	64	73	Passenger	
5/11/2023 0:45			76	70	87	Not Clear	Rain
5/11/2023 1:16			102	68	80		
5/11/2023 2:04			131	63	75		Rain
5/11/2023 4:35			79	64	76		Rain
5/11/2023 5:09			66	62	72		Rain
5/11/2023 6:09			120	67	82	Passenger	Wind
5/11/2023 7:24			119	66	79	Passenger	Rain
5/11/2023 7:38			101	69	79	Passenger	Rain
5/11/2023 9:26			42	64	73	Not Clear	Rain
5/11/2023 10:19			74	73	95	Not Clear	
5/11/2023 10:39			69	66	75	Passenger	
5/11/2023 10:51			143	64	75	Not Clear	
5/11/2023 11:52			70	64	74	Not Clear	Wind
5/11/2023 12:30			56	66	77	Not Clear	Wind
5/11/2023 13:23			66	3	6	Not Clear	Wind
5/11/2023 13:59			30	3	5	Not Clear	Wind
5/11/2023 16:49			58	62	72		
5/11/2023 17:15			90	66	78	Not Clear	Wind
5/11/2023 17:49			76	65	76		
5/11/2023 19:33			58	63	77	Not Clear	
5/11/2023 20:01			94	65	74		
5/11/2023 20:17			83	67	81		
5/11/2023 21:13			82	64	77		
5/11/2023 22:05			83	62	76		
5/11/2023 22:23			59	65	73	Not Clear	
5/11/2023 22:43			83	64	73	Passenger	
5/11/2023 23:19			98	64	74		
6/11/2023 0:24			123	67	80		
6/11/2023 2:23			71	60	69		
6/11/2023 2:53			57	67	73		
6/11/2023 3:12			103	67	78		
6/11/2023 3:21			93	63	72		
6/11/2023 4:39			144	61	74	Passenger	
6/11/2023 4:48			61	61	73		
6/11/2023 4:52			54	66	78		
6/11/2023 5:23			74	64	72		
6/11/2023 6:33			88	65	74		
6/11/2023 6:51			99	67	85		
6/11/2023 9:48			77	66	76		
6/11/2023 9:57			68	66	77	Passenger	
6/11/2023 10:28			41	64	75	Not Clear	
6/11/2023 10:45			49	63	73	Not Clear	
6/11/2023 11:05			104	64	74	Not Clear	
6/11/2023 11:24			43	65	73		
6/11/2023 12:02			72	64	74	Passenger	
6/11/2023 12:14			73	66	79	Not Clear	
6/11/2023 12:19			71	65	74	Passenger	
6/11/2023 12:57			41	65	76		
6/11/2023 14:00			50	70	84		
6/11/2023 16:31			46	62	73	Not Clear	
6/11/2023 17:21			98	68	78	Passenger	Wind
6/11/2023 19:17			93	69	81	Passenger	
6/11/2023 19:26			64	69	80	Passenger	
6/11/2023 19:34			123	68	87		
6/11/2023 19:41			65	68	75	Passenger	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
6/11/2023 20:06			74	68	77		
6/11/2023 21:41			42	64	73	Not Clear	
6/11/2023 21:47			64	55	69	Not Clear	
6/11/2023 21:50			136	63	79	Passenger	
6/11/2023 22:39			71	65	73	Passenger	
6/11/2023 23:16			110	65	74		
7/11/2023 0:58			82	64	71	Passenger	
7/11/2023 1:03			53	59	65	Passenger	
7/11/2023 2:10			113	69	84		
7/11/2023 2:42			124	71	85		
7/11/2023 3:47			73	57	71		
7/11/2023 3:53			157	64	79		
7/11/2023 4:06			61	67	78		
7/11/2023 6:31			54	67	74	Passenger	
7/11/2023 7:07			86	64	77	Not Clear	
7/11/2023 9:28			53	67	75	Passenger	
7/11/2023 9:46			44	69	81		
7/11/2023 10:00			94	67	77		
7/11/2023 10:44			69	66	73		
7/11/2023 11:04			102	65	74		
7/11/2023 11:16			98	65	77	Not Clear	
7/11/2023 11:30			84	66	75	Passenger	
7/11/2023 12:24			77	62	73		
7/11/2023 12:35			83	72	97		
7/11/2023 12:50			100	67	77	Passenger	
7/11/2023 13:00			64	66	76	Not Clear	
7/11/2023 13:53			60	71	80	Passenger	Wind
7/11/2023 14:52			41	65	78	Not Clear	Wind
7/11/2023 15:31			133	63	74	Not Clear	Wind
7/11/2023 15:55			42	67	80	Not Clear	Wind
7/11/2023 17:50			110	66	75	Not Clear	Wind
7/11/2023 18:07			101	68	79		Wind
7/11/2023 18:17			25	69	84	Not Clear	Wind
7/11/2023 18:53			81	68	78		
7/11/2023 19:08			75	67	74	Passenger	
7/11/2023 19:18			80	65	75	Not Clear	
7/11/2023 19:35			92	68	75		
7/11/2023 20:59			72	66	76		
7/11/2023 21:18			57	66	80	Not Clear	
7/11/2023 21:50			82	60	79	Not Clear	
7/11/2023 22:18			65	57	72	Not Clear	
7/11/2023 23:23			92	60	77	Not Clear	
8/11/2023 0:10			150	64	71	Passenger	
8/11/2023 0:22			64	61	69		
8/11/2023 0:33			74	65	73		
8/11/2023 0:48			79	60	70		
8/11/2023 0:57			102	54	62	Passenger	
8/11/2023 1:09			94	65	75		
8/11/2023 1:31			99	67	81		
8/11/2023 1:42			127	69	84		
8/11/2023 1:53			72	66	74		
8/11/2023 2:15			79	61	70		
8/11/2023 2:40			88	69	78		
8/11/2023 3:03			49	60	74		
8/11/2023 3:22			63	66	76		
8/11/2023 3:42			81	65	73		
8/11/2023 3:53			57	63	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
8/11/2023 4:13			136	63	79	Passenger	
8/11/2023 4:37			75	54	72	Not Clear	
8/11/2023 5:39			80	62	75	Passenger	
8/11/2023 6:24			65	67	77	Passenger	
8/11/2023 9:14			82	60	70	Not Clear	
8/11/2023 9:33			92	63	73		
8/11/2023 9:51			62	66	74	Passenger	
8/11/2023 10:08			67	71	84	Not Clear	
8/11/2023 11:01			65	64	75	Not Clear	
8/11/2023 11:26			74	65	72	Passenger	
8/11/2023 12:44			79	68	77		
8/11/2023 13:00			82	64	73	Passenger	
8/11/2023 13:24			38	66	74		
8/11/2023 14:37			94	62	71	Not Clear	Wind
8/11/2023 14:59			49	66	72	Passenger	Wind
8/11/2023 15:35			50	66	75	Not Clear	Wind
8/11/2023 16:08			41	67	75	Passenger	Wind
8/11/2023 17:01			89	65	74	Not Clear	Wind
8/11/2023 17:18			90	66	74	Not Clear	
8/11/2023 18:28			42	68	87		
8/11/2023 19:36			44	69	84		
8/11/2023 19:46			75	67	77		
8/11/2023 20:04			160	63	78	Not Clear	
8/11/2023 21:16			97	62	72		
8/11/2023 21:22			87	60	72	Not Clear	
8/11/2023 21:27			95	62	73	Passenger	
8/11/2023 22:07			55	66	77	Not Clear	
8/11/2023 23:16			66	68	80		
8/11/2023 23:27			61	67	76		
8/11/2023 23:39			89	59	69	Passenger	
9/11/2023 0:10			39	61	72		
9/11/2023 0:50			76	65	74		
9/11/2023 1:25			125	61	72		
9/11/2023 2:24			96	63	75		
9/11/2023 2:32			81	67	74		
9/11/2023 2:48			30	61	73		
9/11/2023 4:05			147	63	75		
9/11/2023 4:32			152	51	58	Not Clear	
9/11/2023 4:53			124	69	81		
9/11/2023 6:27			86	67	77		
9/11/2023 8:31			81	65	77	Not Clear	
9/11/2023 9:49			79	66	75		
9/11/2023 9:58			78	68	82		
9/11/2023 10:54			127	65	78	Not Clear	
9/11/2023 11:19			73	65	73		
9/11/2023 11:27			81	63	75	Not Clear	
9/11/2023 11:30			66	64	74		
9/11/2023 11:36			72	63	74	Not Clear	
9/11/2023 12:04			182	62	78	Not Clear	
9/11/2023 12:33			87	65	74	Not Clear	
9/11/2023 14:04			42	70	76		Wind
9/11/2023 14:10			85	65	76		Wind
9/11/2023 14:22			85	64	72	Not Clear	Wind
9/11/2023 14:37			116	66	74	Not Clear	Wind
9/11/2023 15:02			75	64	76	Not Clear	
9/11/2023 15:23			87	66	74	Not Clear	Wind
9/11/2023 17:23			86	69	79	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
9/11/2023 17:35			49	64	75	Not Clear	
9/11/2023 17:53			59	67	75	Not Clear	
9/11/2023 19:04			97	66	74		
9/11/2023 19:15			73	67	74		
9/11/2023 19:36			90	66	74		
9/11/2023 20:04			119	67	78	Passenger	
9/11/2023 20:34			102	64	74	Not Clear	
9/11/2023 21:01			98	64	73		
9/11/2023 21:28			76	67	75		
9/11/2023 21:39			84	61	76	Not Clear	
9/11/2023 21:47			95	62	74		
9/11/2023 22:32			111	64	76		
9/11/2023 23:19			67	69	79		
9/11/2023 23:33			102	64	74		
9/11/2023 23:47			60	61	72		

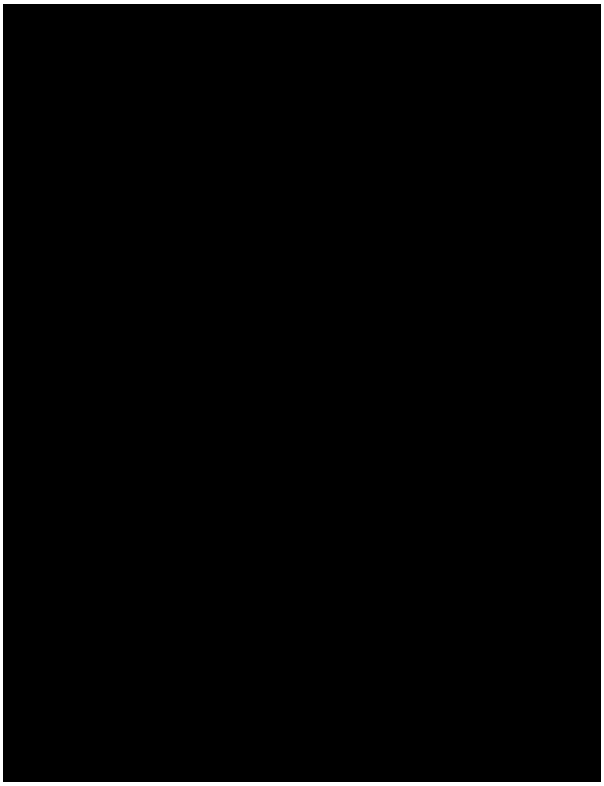
13 Slessor Road, Casula

Table 13 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
29/11/2023	51	58
30/11/2023	50	58
1/12/2023	51	58
2/12/2023	51	58
3/12/2023	51	58
4/12/2023	51	58
5/12/2023	50	58
6/12/2023	50	58
Overall	**51**	**58**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 7 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
29/11/2023 0:44			47	50	59		
29/11/2023 3:10			55	63	69		
29/11/2023 3:49			63	63	71		
29/11/2023 5:17			88	65	75		Rain
29/11/2023 6:11			50	64	70		
29/11/2023 8:50			100	62	67		
29/11/2023 8:25			114	60	68		
29/11/2023 18:00			114	65	74		
29/11/2023 18:33			77	65	73		
29/11/2023 19:15			66	68	79		
29/11/2023 21:11			72	57	63		
29/11/2023 23:10			59	64	71		
30/11/2023 3:44			106	64	75		
30/11/2023 4:02			96	61	70		
30/11/2023 6:04			48	64	69		
30/11/2023 8:43			96	63	72		
30/11/2023 8:22			52	63	72		
30/11/2023 8:44			76	64	72		
30/11/2023 9:33			102	64	75		
30/11/2023 11:59			46	62	66		
30/11/2023 12:12			107	62	74		
30/11/2023 14:00			72	59	65		
30/11/2023 14:46			107	61	69		
30/11/2023 21:36			123	63	73		
30/11/2023 22:38			47	64	69		
1/12/2023 3:11			101	60	67		
1/12/2023 3:52			75	64	73		
1/12/2023 4:12			95	62	74		
1/12/2023 6:17			57	63	69		
1/12/2023 9:08			100	64	73		
1/12/2023 14:41			27	73	81	Not Clear	Wind
1/12/2023 16:09			46	64	70		Wind
1/12/2023 17:14			69	62	72		Wind
1/12/2023 18:30			59	61	78		Wind
1/12/2023 23:58			125	64	70		
2/12/2023 4:36			58	61	69		
2/12/2023 4:56			73	59	67		
2/12/2023 8:34			95	64	73		
2/12/2023 11:37			80	64	76		
2/12/2023 17:45			116	64	71		Wind
2/12/2023 18:17			80	63	71		
2/12/2023 18:33			79	60	70		
2/12/2023 22:47			66	61	68		
2/12/2023 23:47			105	64	77		
3/12/2023 0:11			56	61	70	Not Clear	
3/12/2023 2:54			57	64	70		
3/12/2023 3:50			49	64	69		
3/12/2023 5:40			71	67	76		
3/12/2023 11:10			57	58	63		
3/12/2023 12:10			118	61	68		
3/12/2023 21:16			70	63	73		
3/12/2023 21:29			27	64	76	Not Clear	
3/12/2023 22:46			248	60	69		
4/12/2023 3:02			54	63	68		
4/12/2023 4:24			56	64	72		
4/12/2023 5:15			47	64	70		
4/12/2023 7:27			30	65	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
4/12/2023 14:51			65	63	76	Not Clear	Wind
4/12/2023 17:22			67	62	69		Wind
4/12/2023 18:17			114	64	75		
4/12/2023 17:34			55	61	74		Wind
4/12/2023 18:56			47	64	74		
4/12/2023 22:45			52	63	67		
5/12/2023 4:01			87	61	70		
5/12/2023 5:21			46	64	70		
5/12/2023 6:59			73	60	67		
5/12/2023 9:10			97	64	77		
5/12/2023 12:00			31	58	63		
5/12/2023 12:42			70	55	62		
5/12/2023 12:52			60	60	67		
5/12/2023 14:59			85	54	72	Not Clear	
5/12/2023 17:13			79	61	75		
5/12/2023 22:41			52	63	68		
6/12/2023 3:05			56	62	68		
6/12/2023 4:02			102	60	68		Wind
6/12/2023 5:25			66	62	68		
6/12/2023 8:42			111	62	73		
6/12/2023 9:34			102	63	73		
6/12/2023 14:35			154	52	65		Wind
6/12/2023 16:44			118	63	69		Wind
6/12/2023 17:02			102	60	67		Wind
6/12/2023 18:59			130	60	77		Wind
6/12/2023 20:45			50	65	70		
6/12/2023 21:50			66	53	61	Not Clear	
6/12/2023 22:47			59	64	70		
29/11/2023 7:51			47	57	68		
29/11/2023 9:54			51	64	72		
29/11/2023 12:37			64	63	71		
29/11/2023 13:23			105	64	72		
29/11/2023 13:40			95	64	73		
29/11/2023 14:43			23	55	61		Wind
29/11/2023 17:42			28	64	78		
29/11/2023 23:10			53	65	71		
30/11/2023 1:15			103	58	65		
30/11/2023 1:24			60	56	72	Not Clear	
30/11/2023 1:42			52	65	74		
30/11/2023 2:34			73	56	63		
30/11/2023 2:56			76	59	65		
30/11/2023 13:18			81	63	73		
30/11/2023 14:20			45	52	69		
30/11/2023 15:59			45	69	81	Not Clear	
30/11/2023 16:49			37	75	86	Not Clear	
30/11/2023 18:56			56	66	75		
30/11/2023 19:47			61	63	68		
30/11/2023 21:54			83	62	84	Not Clear	
1/12/2023 0:12			86	65	72		
1/12/2023 1:16			83	62	68		
1/12/2023 2:11			94	62	69		
1/12/2023 10:12			46	65	75		
1/12/2023 12:49			91	64	73		
1/12/2023 13:19			109	60	69		
1/12/2023 13:52			25	72	78	Not Clear	Wind
1/12/2023 17:35			83	58	68	Not Clear	Wind
1/12/2023 18:42			66	52	63	Not Clear	Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
1/12/2023 21:15			79	64	71		
2/12/2023 2:29			55	65	75		
2/12/2023 9:01			59	64	76		
2/12/2023 16:02			61	65	73		
2/12/2023 16:18			133	58	65		
2/12/2023 16:25			78	57	66		
2/12/2023 17:15			105	63	70		
2/12/2023 19:14			53	66	75		
2/12/2023 21:42			65	66	74		
3/12/2023 0:28			66	56	66	Not Clear	
3/12/2023 1:17			99	63	70		
3/12/2023 1:50			87	64	74		
3/12/2023 12:44			59	62	73		Wind
3/12/2023 13:04			53	57	66	Not Clear	Wind
3/12/2023 13:39			114	62	69		Wind
3/12/2023 19:46			45	67	72		Wind
3/12/2023 22:48			116	61	69		
4/12/2023 0:14			76	65	74		
4/12/2023 2:00			54	59	66		
4/12/2023 8:50			58	57	71	Not Clear	
4/12/2023 10:07			67	62	70		
4/12/2023 10:38			48	65	72		
4/12/2023 11:57			52	58	68	Not Clear	
4/12/2023 12:16			88	63	73		
4/12/2023 12:45			88	65	73		
4/12/2023 19:46			64	66	72		
5/12/2023 2:12			51	66	75		
5/12/2023 1:57			60	47	55		
5/12/2023 2:28			80	68	77		
5/12/2023 3:29			74	62	69		
5/12/2023 10:06			53	64	74		
5/12/2023 12:34			49	65	75		
5/12/2023 13:11			89	58	67		
5/12/2023 13:48			112	59	65		
5/12/2023 16:22			107	62	69		
5/12/2023 18:48			70	63	75		
5/12/2023 19:59			62	60	67		
5/12/2023 23:14			100	65	71		
6/12/2023 1:18			117	62	71		
6/12/2023 6:32			37	57	66	Not Clear	
6/12/2023 8:09			41	54	66	Not Clear	
6/12/2023 10:21			47	66	77		
6/12/2023 10:49			53	67	73		Wind
6/12/2023 13:31			97	62	70		Wind
6/12/2023 13:15			106	62	69		Wind
6/12/2023 17:46			75	62	70		
6/12/2023 18:52			51	60	71	Not Clear	Wind

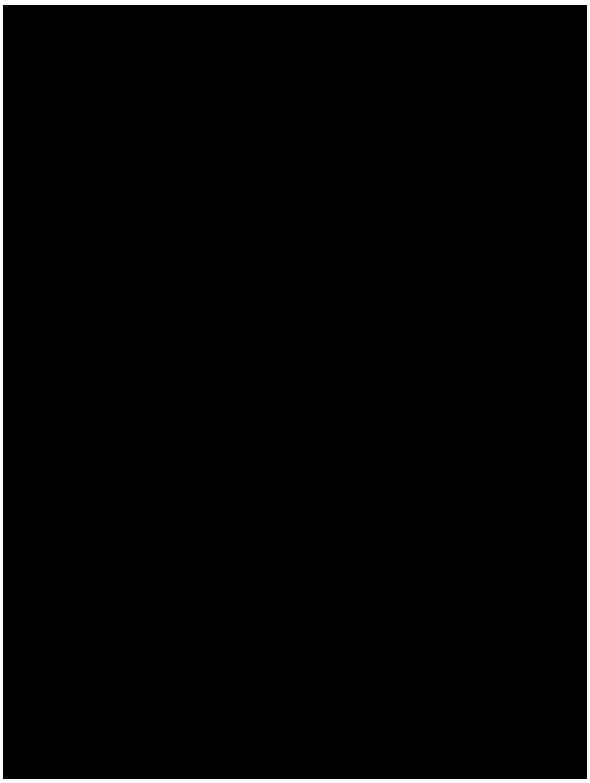
20 Railway Parade, Glenfield

Table 14 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
29/11/2023	52	66
30/11/2023	54	66
1/12/2023	53	66
2/12/2023	52	66
3/12/2023	51	66
4/12/2023	53	66
5/12/2023	54	66
6/12/2023	51	66
Overall	**53**	**66**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 8 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
29/11/2023 0:42			51	57	71	Not Clear	
29/11/2023 3:10			43	63	69		
29/11/2023 3:48			48	63	70		
29/11/2023 5:17			12	70	79	Not Clear	Rain
29/11/2023 6:10			42	66	76		
29/11/2023 8:49			120	66	74	Not Clear	
29/11/2023 8:24			125	67	81	Not Clear	
29/11/2023 17:59			109	68	78	Not Clear	
29/11/2023 18:32			69	66	75	Not Clear	
29/11/2023 19:14			63	67	77		
29/11/2023 21:11			60	68	74		
29/11/2023 23:11			46	67	73		
30/11/2023 3:43			110	63	72		
30/11/2023 4:01			99	64	78		
30/11/2023 6:03			29	66	74	Not Clear	
30/11/2023 8:43			64	69	76	Not Clear	
30/11/2023 8:21			73	65	77	Not Clear	
30/11/2023 8:43			66	69	76	Not Clear	
30/11/2023 9:33			74	66	76		
30/11/2023 11:59			48	66	75		
30/11/2023 12:12			67	65	72		
30/11/2023 13:59			74	64	75	Not Clear	
30/11/2023 14:47			87	66	75	Not Clear	
30/11/2023 21:36			118	66	75		
30/11/2023 22:37			55	65	75		
1/12/2023 3:12			83	67	78		
1/12/2023 3:52			64	64	73		
1/12/2023 4:11			76	63	73		
1/12/2023 6:16			55	66	76		
1/12/2023 9:07			100	66	78		
1/12/2023 14:41			48	69	80	Not Clear	Wind
1/12/2023 16:08			41	65	73		Wind
1/12/2023 17:13			75	65	75	Not Clear	Wind
1/12/2023 18:29			75	65	74	Not Clear	Wind
1/12/2023 23:58			113	64	76		
2/12/2023 4:36			60	62	70		
2/12/2023 4:53			91	62	72		
2/12/2023 8:33			89	66	75		
2/12/2023 11:40			45	72	82	Not Clear	
2/12/2023 17:45			91	64	74	Not Clear	Wind
2/12/2023 18:16			82	64	74	Not Clear	
2/12/2023 18:32			137	62	73	Not Clear	
2/12/2023 22:46			62	64	70	Not Clear	
2/12/2023 23:46			97	64	75		
3/12/2023 0:10			122	63	75	Not Clear	
3/12/2023 2:53			44	64	71		
3/12/2023 3:49			46	63	70		
3/12/2023 5:39			73	66	77		
3/12/2023 11:09			58	66	74		
3/12/2023 12:10			89	63	73		
3/12/2023 21:15			55	66	79		
3/12/2023 21:28			83	65	81	Not Clear	
3/12/2023 22:44			92	60	71		
4/12/2023 3:01			52	62	70		
4/12/2023 4:23			110	60	74	Not Clear	
4/12/2023 5:14			39	67	78		
4/12/2023 7:26			70	67	75	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
4/12/2023 14:51			48	67	77	Not Clear	Wind
4/12/2023 17:21			75	67	77	Not Clear	Wind
4/12/2023 18:17			123	64	74	Not Clear	
4/12/2023 17:33			42	64	73	Not Clear	Wind
4/12/2023 18:55			69	67	77		
4/12/2023 22:44			53	65	72		
5/12/2023 4:00			99	62	76		
5/12/2023 5:20			62	66	77		
5/12/2023 6:58			100	67	82	Not Clear	
5/12/2023 9:09			165	68	84	Not Clear	
5/12/2023 11:56			78	65	78	Not Clear	
5/12/2023 12:43			67	68	83	Not Clear	
5/12/2023 12:53			28	72	79	Not Clear	
5/12/2023 14:54			32	65	72	Not Clear	
5/12/2023 17:12			73	66	77	Not Clear	
5/12/2023 22:40			48	63	71		
6/12/2023 3:04			52	64	76		
6/12/2023 4:01			84	64	74		Wind
6/12/2023 5:24			61	65	75		
6/12/2023 8:42			33	70	76	Not Clear	
6/12/2023 9:34			88	66	77	Not Clear	
6/12/2023 14:36			73	65	74	Not Clear	Wind
6/12/2023 16:44			124	69	81	Not Clear	Wind
6/12/2023 17:01			69	72	82	Not Clear	Wind
6/12/2023 18:58			79	64	73	Not Clear	Wind
6/12/2023 20:44			52	64	73	Not Clear	
6/12/2023 21:49			90	61	76		
6/12/2023 22:46			59	65	71		
29/11/2023 7:49			66	67	78	Not Clear	
29/11/2023 9:55			45	65	71		
29/11/2023 12:38			67	63	76	Not Clear	
29/11/2023 13:24			91	59	69	Not Clear	
29/11/2023 13:41			116	62	72	Not Clear	
29/11/2023 14:42			32	67	75	Not Clear	Wind
29/11/2023 17:43			34	69	77	Not Clear	
29/11/2023 23:11			50	67	73		
30/11/2023 1:16			48	60	70	Not Clear	
30/11/2023 1:25			61	61	72	Not Clear	
30/11/2023 1:43			47	67	76		
30/11/2023 2:35			61	73	85		
30/11/2023 2:56			75	62	74		
30/11/2023 13:19			79	68	81	Not Clear	
30/11/2023 14:19			45	65	75	Not Clear	
30/11/2023 15:57			37	66	74	Not Clear	
30/11/2023 16:50			32	70	82	Not Clear	
30/11/2023 18:57			63	68	76		
30/11/2023 19:48			53	68	76		
30/11/2023 21:54			54	65	74		
1/12/2023 0:13			80	64	75		
1/12/2023 1:17			78	65	74		
1/12/2023 2:12			102	64	75		
1/12/2023 10:13			52	66	73	Not Clear	
1/12/2023 12:50			98	68	80	Not Clear	
1/12/2023 13:21			23	65	72	Not Clear	
1/12/2023 13:50			19	70	80	Not Clear	Wind
1/12/2023 17:41			38	78	90	Not Clear	Wind
1/12/2023 18:45			34	67	77	Not Clear	Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
1/12/2023 21:16			76	62	74	Not Clear	
2/12/2023 2:30			45	68	74		
2/12/2023 9:02			49	66	72		
2/12/2023 16:03			68	65	75	Not Clear	
2/12/2023 16:18			49	65	78	Not Clear	
2/12/2023 16:24			51	68	79	Not Clear	
2/12/2023 17:16			97	65	74	Not Clear	
2/12/2023 19:15			44	66	75	Not Clear	
2/12/2023 21:43			54	68	77		
3/12/2023 0:30			39	62	70		
3/12/2023 1:17			98	64	74		
3/12/2023 1:51			74	66	78		
3/12/2023 12:45			52	65	76		Wind
3/12/2023 13:00			52	64	74	Not Clear	Wind
3/12/2023 13:40			114	63	74	Not Clear	Wind
3/12/2023 19:47			44	65	73		Wind
3/12/2023 22:49			58	64	74		
4/12/2023 0:15			74	69	80		
4/12/2023 2:00			43	70	79		
4/12/2023 8:45			33	68	78	Not Clear	
4/12/2023 10:07			60	68	74		
4/12/2023 10:39			43	65	72		
4/12/2023 11:58			16	66	75	Not Clear	
4/12/2023 12:16			102	67	84	Not Clear	
4/12/2023 12:46			92	65	76	Not Clear	
4/12/2023 19:47			25	68	73	Not Clear	
5/12/2023 2:13			50	68	75		
5/12/2023 2:28			82	69	81		
5/12/2023 2:28			86	69	81	Not Clear	
5/12/2023 3:30			66	68	78		
5/12/2023 10:06			55	66	76		
5/12/2023 12:34			58	64	75	Not Clear	
5/12/2023 13:12			59	65	75	Not Clear	
5/12/2023 13:49			35	66	74	Not Clear	
5/12/2023 16:22			116	65	76	Not Clear	
5/12/2023 18:49			48	68	78	Not Clear	
5/12/2023 20:00			56	63	71	Not Clear	
5/12/2023 23:14			88	67	75		
6/12/2023 1:19			109	64	74		
6/12/2023 6:39			38	65	73	Not Clear	
6/12/2023 8:08			35	69	76	Not Clear	
6/12/2023 10:21			45	65	73		
6/12/2023 10:50			52	66	76		Wind
6/12/2023 13:32			28	64	74	Not Clear	Wind
6/12/2023 13:16			99	65	77	Not Clear	Wind
6/12/2023 17:46			80	66	75	Not Clear	
6/12/2023 18:52			117	63	77	Not Clear	Wind

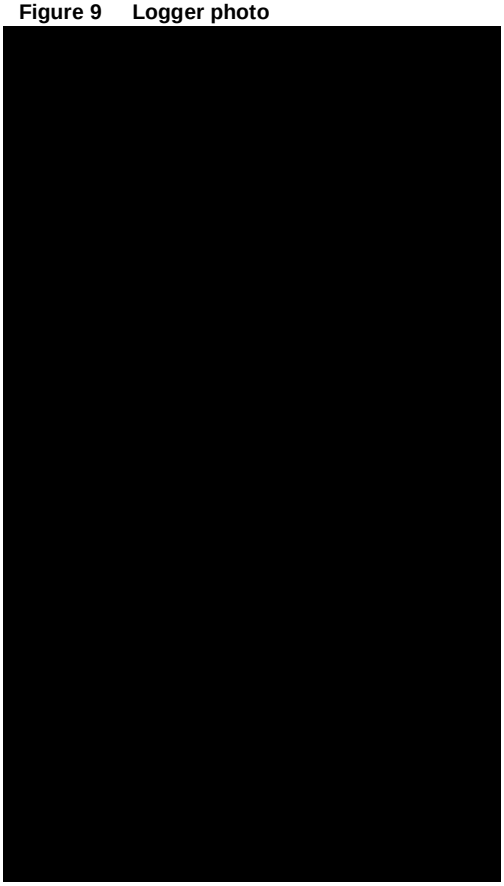
22 Kulgoa Street, Leumeah

Table 15 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
12/12/2023	56	69
13/12/2023	57	69
14/12/2023	57	69
15/12/2023	56	69
16/12/2023	54	69
17/12/2023	53	69
18/12/2023	55	69
19/12/2023	55	69
20/12/2023	56	69
Overall	**56**	**69**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 9 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
12/12/2023 1:05			30	72	76		
12/12/2023 1:45			50	80	90		
12/12/2023 1:55			38	79	83		
12/12/2023 2:20			41	72	82		
12/12/2023 2:46			58	74	85		
12/12/2023 3:21			44	78	87		
12/12/2023 4:11			55	71	79		
12/12/2023 4:18			19	73	76		
12/12/2023 5:13			30	73	77		Rain
12/12/2023 7:46			11	70	77	Not Clear	
12/12/2023 8:38			59	74	82		
12/12/2023 9:27			37	75	82		
12/12/2023 10:01			15	72	79	Not Clear	
12/12/2023 10:25			14	70	76		
12/12/2023 11:05			27	76	82		
12/12/2023 11:56			33	71	76		
12/12/2023 12:34			14	70	78		
12/12/2023 12:53			54	69	78		
12/12/2023 13:54			25	73	82		
12/12/2023 14:40			72	67	77		
12/12/2023 15:35			16	67	75		
12/12/2023 16:34			47	72	78		Wind
12/12/2023 16:44			17	72	77	Not Clear	Wind
12/12/2023 16:54			51	70	76		Wind
12/12/2023 17:22			73	69	76		Wind
12/12/2023 17:48			13	67	72	Not Clear	
12/12/2023 18:30			23	63	69		Wind
12/12/2023 18:36			32	73	80		Wind
12/12/2023 19:05			30	72	75		
12/12/2023 19:48			42	64	72		
12/12/2023 19:53			33	69	73	Passenger	
12/12/2023 20:36			71	69	75		
12/12/2023 20:43			19	70	78	Not Clear	
12/12/2023 21:49			59	74	82		
12/12/2023 22:33			38	72	78		
12/12/2023 23:34			55	68	75		
13/12/2023 0:33			25	75	80		
13/12/2023 1:12			44	72	80		
13/12/2023 1:31			45	80	89		
13/12/2023 1:38			53	74	85		
13/12/2023 3:21			31	73	78		
13/12/2023 3:47			43	76	86		
13/12/2023 4:00			24	77	84		
13/12/2023 6:13			31	72	76		
13/12/2023 6:33			42	76	82		
13/12/2023 7:44			12	72	79		
13/12/2023 8:43			53	75	83		
13/12/2023 8:47			10	64	76	Not Clear	
13/12/2023 9:44			33	71	76		
13/12/2023 10:01			12	70	76	Not Clear	
13/12/2023 10:17			61	71	80		
13/12/2023 10:32			12	68	74	Not Clear	
13/12/2023 10:37			25	77	80		
13/12/2023 12:59			35	66	71		
13/12/2023 13:08			47	68	78	Passenger	
13/12/2023 13:10			59	73	80		
13/12/2023 13:35			18	64	69	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
13/12/2023 13:41			65	73	79		
13/12/2023 14:15			14	48	59	Not Clear	
13/12/2023 14:35			15	66	70	Not Clear	
13/12/2023 14:51			48	75	88		
13/12/2023 14:53			17	62	70	Not Clear	
13/12/2023 15:38			19	64	70	Not Clear	Wind
13/12/2023 15:46			13	67	77		Wind
13/12/2023 16:41			20	63	69	Not Clear	Wind
13/12/2023 17:09			50	67	76		
13/12/2023 17:26			23	48	59	Not Clear	Wind
13/12/2023 17:47			29	49	56	Not Clear	Wind
13/12/2023 18:03			42	71	79		Wind
13/12/2023 18:14			35	75	85		Wind
13/12/2023 18:30			23	64	70	Not Clear	Wind
13/12/2023 18:43			45	69	73		Wind
13/12/2023 19:53			39	69	79		
13/12/2023 20:04			27	76	82		
13/12/2023 21:07			61	76	91		
13/12/2023 21:36			14	64	70	Not Clear	Rain
14/12/2023 0:27			37	73	81		
14/12/2023 0:39			42	73	81		
14/12/2023 1:31			41	70	75		
14/12/2023 1:33			48	80	91		
14/12/2023 2:12			53	75	86		
14/12/2023 3:29			44	79	89		
14/12/2023 3:40			41	72	78		
14/12/2023 3:43			65	73	81		
14/12/2023 4:05			51	70	78		
14/12/2023 5:11			36	72	77		
14/12/2023 7:46			18	67	75	Not Clear	
14/12/2023 9:25			29	73	79		
14/12/2023 9:43			58	74	79		
14/12/2023 9:51			19	69	77		
14/12/2023 10:25			16	67	75	Not Clear	
14/12/2023 10:42			28	76	83		
14/12/2023 12:10			77	70	79		
14/12/2023 12:40			12	72	78	Not Clear	
14/12/2023 12:58			38	70	76		
14/12/2023 13:08			34	74	85		
14/12/2023 13:20			20	70	80		Wind
14/12/2023 13:57			77	69	77		Wind
14/12/2023 14:10			43	71	77		Wind
14/12/2023 14:31			64	73	87		Wind
14/12/2023 14:55			85	70	77		Wind
14/12/2023 15:32			15	68	75	Not Clear	Wind
14/12/2023 16:42			18	69	74	Not Clear	Wind
14/12/2023 17:13			78	64	74		Wind
14/12/2023 17:38			46	71	81		Wind
14/12/2023 18:03			59	71	80		Wind
14/12/2023 18:35			37	52	54	Not Clear	Wind
14/12/2023 18:50			46	62	69	Not Clear	
14/12/2023 19:19			41	73	81		
14/12/2023 19:59			40	72	81		
14/12/2023 20:01			35	72	76		
14/12/2023 20:27			52	72	76		
14/12/2023 20:49			16	66	71		
14/12/2023 21:13			46	74	83		Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
14/12/2023 22:53			39	75	80		
14/12/2023 23:58			28	70	77		Wind
15/12/2023 0:42			50	74	81		Wind
15/12/2023 1:28			33	72	78		
15/12/2023 1:47			48	79	89		
15/12/2023 2:08			23	74	79		
15/12/2023 2:22			58	74	86		
15/12/2023 3:02			35	71	76		
15/12/2023 3:09			46	77	87		
15/12/2023 3:39			49	73	80		
15/12/2023 4:08			85	64	71		
15/12/2023 5:00			113	47	56	Not Clear	
15/12/2023 5:54			33	71	75		
15/12/2023 7:45			13	72	79		
15/12/2023 9:03			61	67	75		
15/12/2023 9:21			62	72	83		
15/12/2023 9:52			14	69	76		
15/12/2023 10:29			28	75	82		
15/12/2023 10:52			25	76	79		
15/12/2023 11:17			42	74	85		
15/12/2023 11:36			52	73	86		
15/12/2023 12:10			33	70	79		
15/12/2023 12:37			14	69	76		
15/12/2023 12:49			33	71	75		
15/12/2023 13:10			33	65	71		
15/12/2023 13:12			45	70	79		
15/12/2023 14:14			30	71	79		
15/12/2023 15:28			13	69	76	Not Clear	
15/12/2023 15:52			97	67	78		Wind
15/12/2023 16:43			17	65	70	Not Clear	Wind
15/12/2023 16:51			50	67	74		Wind
15/12/2023 17:31			159	49	58	Not Clear	Wind
15/12/2023 17:42			40	71	77		Wind
15/12/2023 17:52			83	55	76	Not Clear	Wind
15/12/2023 18:26			37	72	78		Wind
15/12/2023 18:43			14	68	73	Not Clear	Wind
15/12/2023 18:51			38	71	81		
15/12/2023 19:28			39	74	82		
15/12/2023 19:50			28	75	80		
15/12/2023 19:53			51	65	76		
15/12/2023 20:24			58	70	74		
15/12/2023 20:39			15	71	76	Not Clear	
15/12/2023 20:40			13	66	71	Not Clear	
15/12/2023 21:37			17	65	70	Not Clear	
15/12/2023 21:45			224	47	61	Not Clear	
15/12/2023 22:34			31	73	78		
15/12/2023 23:23			30	74	79		
16/12/2023 1:04			26	76	81		
16/12/2023 1:47			56	75	87		
16/12/2023 2:04			29	73	77		
16/12/2023 2:09			30	76	83		
16/12/2023 5:48			31	73	78		
16/12/2023 7:40			15	71	78	Not Clear	
16/12/2023 8:16			16	69	76	Not Clear	
16/12/2023 8:29			52	74	82		
16/12/2023 10:26			15	68	76	Not Clear	
16/12/2023 10:52			14	70	77		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
16/12/2023 11:11			58	72	79		
16/12/2023 16:11			31	72	80		
16/12/2023 16:33			46	73	80		
16/12/2023 16:47			18	65	71	Not Clear	
16/12/2023 17:49			60	73	80		Wind
16/12/2023 18:03			59	73	80		Wind
16/12/2023 18:10			11	72	78	Not Clear	Wind
16/12/2023 18:24			34	72	81		
16/12/2023 18:33			24	62	68		
16/12/2023 18:53			51	75	87		
16/12/2023 18:55			26	74	80		
16/12/2023 20:38			15	67	75	Not Clear	Wind
16/12/2023 20:55			40	73	83		Wind
16/12/2023 22:34			33	72	76		
17/12/2023 0:42			52	74	85		
17/12/2023 1:12			76	70	81		
17/12/2023 1:34			52	76	79		
17/12/2023 3:25			71	71	81		
17/12/2023 5:40			34	72	79		
17/12/2023 8:15			27	66	75	Not Clear	
17/12/2023 8:16			24	72	80		
17/12/2023 8:41			25	73	80		
17/12/2023 10:27			16	68	75	Not Clear	
17/12/2023 10:53			14	68	75	Not Clear	
17/12/2023 12:40			13	71	79	Not Clear	Wind
17/12/2023 14:34			59	70	79		Wind
17/12/2023 14:52			29	73	81		Wind
17/12/2023 15:08			61	72	79		Wind
17/12/2023 15:39			15	69	76		Wind
17/12/2023 16:18			54	75	83		
17/12/2023 16:47			19	64	69	Not Clear	Wind
17/12/2023 18:13			18	68	77	Not Clear	Wind
17/12/2023 18:41			14	70	78	Not Clear	
17/12/2023 20:38			28	74	77		
17/12/2023 22:58			38	71	77		
18/12/2023 1:30			54	79	90		
18/12/2023 1:47			33	74	81		
18/12/2023 2:00			44	76	85		
18/12/2023 2:36			33	73	77		
18/12/2023 3:05			61	75	82		
18/12/2023 3:39			46	75	82		
18/12/2023 3:41			25	77	83		
18/12/2023 5:58			36	72	76		
18/12/2023 7:48			15	69	76		
18/12/2023 9:33			33	70	75		
18/12/2023 9:58			16	68	76	Not Clear	
18/12/2023 10:25			29	75	79		
18/12/2023 10:40			19	68	73		
18/12/2023 11:02			29	74	81		
18/12/2023 11:13			65	74	79		
18/12/2023 11:24			18	68	74		
18/12/2023 12:28			60	69	76		
18/12/2023 12:50			15	68	75		
18/12/2023 13:37			27	70	73		
18/12/2023 15:27			17	67	75		Wind
18/12/2023 16:43			23	66	71		
18/12/2023 17:07			50	68	77		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
18/12/2023 17:29			24	67	72		
18/12/2023 17:48			18	66	71	Not Clear	
18/12/2023 18:33			23	69	79		
18/12/2023 18:42			36	71	77		
18/12/2023 19:11			40	72	83		
18/12/2023 19:41			33	72	75		
18/12/2023 19:53			28	73	83		
18/12/2023 20:23			70	68	75		
18/12/2023 22:25			32	72	76		
18/12/2023 23:15			31	73	79		
19/12/2023 0:24			86	60	69		
19/12/2023 1:04			120	68	79		
19/12/2023 1:15			47	72	82		
19/12/2023 1:54			41	70	75		
19/12/2023 2:22			47	68	77		
19/12/2023 2:48			52	75	87		
19/12/2023 3:46			140	69	79		
19/12/2023 3:50			46	75	79		
19/12/2023 5:29			76	67	76	Passenger	
19/12/2023 6:00			34	72	75		
19/12/2023 7:25			44	71	79		
19/12/2023 7:47			16	79	96		
19/12/2023 8:57			51	74	85		
19/12/2023 9:15			29	76	85		
19/12/2023 9:41			29	72	79		
19/12/2023 9:48			12	71	79	Not Clear	
19/12/2023 10:31			12	68	74	Not Clear	
19/12/2023 11:54			61	73	80		
19/12/2023 12:10			32	72	78		
19/12/2023 12:31			50	73	84		
19/12/2023 12:36			12	71	78	Not Clear	
19/12/2023 13:02			29	71	79		
19/12/2023 13:54			31	72	82		
19/12/2023 14:54			61	73	81		
19/12/2023 15:28			10	70	76	Not Clear	
19/12/2023 16:13			53	73	82		
19/12/2023 16:42			20	67	72		
19/12/2023 17:03			51	69	77		
19/12/2023 17:48			10	69	73	Not Clear	Wind
19/12/2023 18:32			14	67	73		
19/12/2023 19:03			27	74	77		Wind
19/12/2023 19:54			47	64	72		
19/12/2023 20:02			25	76	84		
19/12/2023 20:41			56	73	79		Wind
19/12/2023 21:56			39	67	78		Wind
19/12/2023 22:01			14	68	75		Rain
19/12/2023 23:04			17	72	79		Wind
19/12/2023 23:09			33	72	78		Wind
19/12/2023 23:17			16	68	75		
20/12/2023 0:58			54	77	87		
20/12/2023 1:12			29	74	82		
20/12/2023 1:41			52	74	86		Rain
20/12/2023 1:45			89	72	84		Rain
20/12/2023 1:53			34	73	78		Rain
20/12/2023 2:15			40	74	83		Rain
20/12/2023 3:19			34	70	74		Rain
20/12/2023 3:45			45	76	86		Rain

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
20/12/2023 4:01			58	72	80		Rain
20/12/2023 6:00			32	70	76		Rain
20/12/2023 8:45			71	72	79		
20/12/2023 9:32			33	71	77		Rain
20/12/2023 9:54			16	67	73		Rain
20/12/2023 10:26			64	70	80		Rain
20/12/2023 10:32			12	68	75	Not Clear	Rain
20/12/2023 10:46			30	74	79		Rain
20/12/2023 11:08			47	72	81		Rain
20/12/2023 11:59			29	72	83		Rain
20/12/2023 12:39			12	72	77	Not Clear	Rain
20/12/2023 12:58			61	75	90		Rain
20/12/2023 13:45			63	71	81		Rain
20/12/2023 14:00			28	69	77		Rain
20/12/2023 14:26			62	71	77		Rain
20/12/2023 14:55			14	67	76	Not Clear	Rain
20/12/2023 15:26			15	67	74	Not Clear	Rain
20/12/2023 16:42			20	63	69		Rain
20/12/2023 16:51			45	70	81		Rain
20/12/2023 17:37			16	67	75	Not Clear	
20/12/2023 17:50			34	51	66	Not Clear	
20/12/2023 18:28			35	71	76		
20/12/2023 18:32			33	66	73	Not Clear	
20/12/2023 18:54			40	70	75		
20/12/2023 20:23			58	72	81		
20/12/2023 20:39			14	70	74	Not Clear	
20/12/2023 23:43			37	73	81		

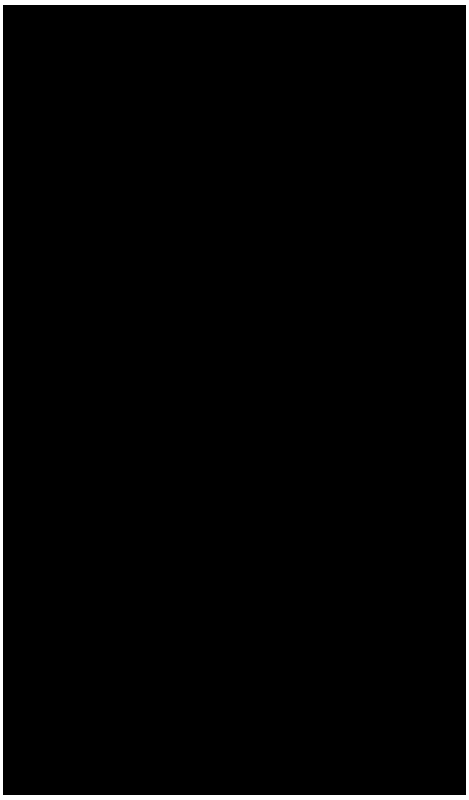
16 Somerset Street, Minto

Table 16 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
12/12/2023	49	62
13/12/2023	52	62
14/12/2023	49	62
15/12/2023	51	62
16/12/2023	49	62
17/12/2023	49	62
18/12/2023	50	62
19/12/2023	51	62
20/12/2023	51	62
Overall	**50**	**62**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 10 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
12/12/2023 1:01			30	61	64		
12/12/2023 1:34			130	50	59		
12/12/2023 1:41			80	67	76		
12/12/2023 1:47			111	53	63		
12/12/2023 1:51			45	66	69		
12/12/2023 2:23			39	69	79		
12/12/2023 2:42			60	65	75		
12/12/2023 3:18			48	68	76		
12/12/2023 4:14			58	63	69		
12/12/2023 5:16			39	64	71		
12/12/2023 7:44			20	61	65		
12/12/2023 8:40			56	68	73		
12/12/2023 9:30			33	69	73		
12/12/2023 10:03			16	61	67	Not Clear	
12/12/2023 10:27			22	55	61	Not Clear	
12/12/2023 11:02			25	73	82		
12/12/2023 11:55			54	59	76	Not Clear	
12/12/2023 11:59			34	67	74		
12/12/2023 12:13			138	53	62		
12/12/2023 12:32			20	56	63	Not Clear	
12/12/2023 12:50			47	63	69		
12/12/2023 13:57			25	64	71		
12/12/2023 14:36			60	67	78		
12/12/2023 15:37			36	79	83	Not Clear	
12/12/2023 16:32			48	70	81		Wind
12/12/2023 16:40			26	55	59	Not Clear	Wind
12/12/2023 16:58			57	63	67		Wind
12/12/2023 17:19			63	67	76		Wind
12/12/2023 18:25			12	62	69	Not Clear	Wind
12/12/2023 18:33			32	67	72		Wind
12/12/2023 19:02			33	67	71		
12/12/2023 19:45			37	65	75		
12/12/2023 19:56			21	65	71	Not Clear	
12/12/2023 20:40			51	65	69		
12/12/2023 20:45			16	58	64		
12/12/2023 20:56			105	56	65		
12/12/2023 21:42			68	56	61		
12/12/2023 21:47			62	70	78		
12/12/2023 22:36			34	70	79		
12/12/2023 23:31			27	67	71		
13/12/2023 0:30			31	68	78		
13/12/2023 1:03			80	54	63	Not Clear	
13/12/2023 1:15			47	70	80		
13/12/2023 1:28			50	69	77		
13/12/2023 1:35			59	63	72		
13/12/2023 3:24			35	66	73		
13/12/2023 3:44			43	75	86		
13/12/2023 3:57			33	62	67		
13/12/2023 4:04			11	57	61	Not Clear	
13/12/2023 6:16			37	65	69		
13/12/2023 6:35			50	68	73		
13/12/2023 7:42			70	55	61	Not Clear	
13/12/2023 8:45			59	67	71		
13/12/2023 9:16			118	55	64	Not Clear	
13/12/2023 9:47			34	69	77		
13/12/2023 10:03			25	58	65	Not Clear	
13/12/2023 10:19			62	65	69		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
13/12/2023 10:34			31	69	78		
13/12/2023 11:42			86	54	59	Not Clear	
13/12/2023 12:15			19	58	66	Not Clear	
13/12/2023 12:52			27	54	60	Not Clear	
13/12/2023 13:08			55	71	80		
13/12/2023 13:13			25	63	68		
13/12/2023 13:43			66	68	73		
13/12/2023 14:49			46	67	77		
13/12/2023 14:55			17	60	68	Not Clear	
13/12/2023 15:41			27	71	81		Wind
13/12/2023 15:43			21	61	70	Not Clear	Wind
13/12/2023 16:37			26	56	61	Not Clear	Wind
13/12/2023 17:12			46	65	74		
13/12/2023 18:01			45	67	72		Wind
13/12/2023 18:16			37	69	73		Wind
13/12/2023 18:26			27	56	65	Not Clear	Wind
13/12/2023 18:45			43	68	77		
13/12/2023 19:58			36	69	76		
13/12/2023 20:02			25	72	80		
13/12/2023 20:27			124	55	67		
13/12/2023 20:31			19	57	64	Not Clear	
13/12/2023 21:12			53	65	68		
13/12/2023 21:19			120	55	62		
13/12/2023 21:40			21	55	62		Rain
13/12/2023 22:26			93	72	78	Not Clear	
14/12/2023 0:24			39	67	75		
14/12/2023 0:32			40	59	63		
14/12/2023 1:13			100	54	61		
14/12/2023 1:28			48	64	69		
14/12/2023 1:30			52	70	79		
14/12/2023 2:08			58	65	76		
14/12/2023 3:05			121	54	62		
14/12/2023 3:25			58	60	63		
14/12/2023 3:35			35	60	64		
14/12/2023 3:45			63	66	70		
14/12/2023 4:08			75	61	69		
14/12/2023 5:14			32	65	69		
14/12/2023 7:44			23	57	63	Not Clear	
14/12/2023 9:28			31	65	71		
14/12/2023 9:46			52	68	71		
14/12/2023 9:53			28	56	62	Not Clear	
14/12/2023 10:27			18	62	69	Not Clear	
14/12/2023 10:39			27	69	77		
14/12/2023 12:12			117	62	71		
14/12/2023 12:30			74	55	67	Not Clear	
14/12/2023 12:38			29	56	64	Not Clear	
14/12/2023 13:01			40	65	73		
14/12/2023 13:11			89	61	74		
14/12/2023 13:14			29	63	74		
14/12/2023 13:15			31	63	74		
14/12/2023 13:18			21	62	70	Not Clear	Wind
14/12/2023 13:55			70	63	72		Wind
14/12/2023 14:13			39	64	68		Wind
14/12/2023 14:27			32	64	72	Not Clear	Wind
14/12/2023 14:58			88	62	68		Wind
14/12/2023 16:37			30	53	58	Not Clear	Wind
14/12/2023 17:18			80	63	75		Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
14/12/2023 17:41			47	63	69		Wind
14/12/2023 17:59			61	65	75		Wind
14/12/2023 18:31			41	54	59	Not Clear	Wind
14/12/2023 19:16			31	70	78		
14/12/2023 19:31			126	55	66	Not Clear	
14/12/2023 19:58			39	65	71		
14/12/2023 20:03			33	66	74		
14/12/2023 20:29			49	64	68		
14/12/2023 20:53			31	55	62	Not Clear	
14/12/2023 20:57			73	55	63	Not Clear	
14/12/2023 21:11			150	52	62	Not Clear	Wind
14/12/2023 21:16			53	65	72		Wind
14/12/2023 22:57			44	66	69		
15/12/2023 0:00			36	64	71		Wind
15/12/2023 0:39			49	71	79		Wind
15/12/2023 1:04			119	54	63	Not Clear	Wind
15/12/2023 1:25			33	67	74		
15/12/2023 1:44			51	71	81		
15/12/2023 2:03			35	59	64		
15/12/2023 2:19			62	64	75		
15/12/2023 3:05			101	66	73		
15/12/2023 3:41			49	65	70		
15/12/2023 4:04			28	64	70		
15/12/2023 5:57			32	64	68		
15/12/2023 7:43			17	60	66	Not Clear	
15/12/2023 9:07			57	69	79		
15/12/2023 9:24			58	66	69		
15/12/2023 9:54			29	57	65	Not Clear	
15/12/2023 10:14			134	55	66	Not Clear	
15/12/2023 10:27			27	70	77		
15/12/2023 10:31			15	59	65	Not Clear	
15/12/2023 10:50			37	68	74		
15/12/2023 11:19			56	67	72		
15/12/2023 11:33			52	66	71		
15/12/2023 12:13			34	72	84		
15/12/2023 12:22			33	59	65	Not Clear	
15/12/2023 12:33			21	54	60	Not Clear	
15/12/2023 12:52			34	67	74		
15/12/2023 13:09			54	64	72		
15/12/2023 13:14			26	62	70		
15/12/2023 14:11			33	66	75		
15/12/2023 15:30			17	60	69	Not Clear	
15/12/2023 15:49			76	67	76		Wind
15/12/2023 16:38			39	58	63	Not Clear	Wind
15/12/2023 16:54			54	65	71		Wind
15/12/2023 17:44			46	66	70		Wind
15/12/2023 18:28			34	70	78		Wind
15/12/2023 18:38			44	59	65	Not Clear	Wind
15/12/2023 18:48			40	70	81		
15/12/2023 19:25			39	70	78		
15/12/2023 19:47			28	73	82		
15/12/2023 19:58			41	58	64	Not Clear	
15/12/2023 20:29			55	65	68		
15/12/2023 20:42			21	57	64	Not Clear	
15/12/2023 21:29			95	58	70		
15/12/2023 22:37			36	67	73		
15/12/2023 23:21			33	67	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
16/12/2023 1:50			49	65	74		
16/12/2023 2:01			40	69	76		
16/12/2023 2:07			33	69	78		
16/12/2023 2:40			117	56	69		
16/12/2023 2:59			59	40	45	Not Clear	
16/12/2023 3:04			57	40	44	Not Clear	
16/12/2023 3:32			100	53	61		
16/12/2023 5:51			39	65	71		
16/12/2023 7:38			24	57	63	Not Clear	
16/12/2023 8:31			51	67	72		
16/12/2023 9:14			28	72	80		
16/12/2023 10:54			21	62	69		
16/12/2023 11:14			57	63	70		
16/12/2023 12:12			81	57	64		
16/12/2023 12:55			13	59	75	Not Clear	
16/12/2023 13:48			68	52	58	Not Clear	
16/12/2023 15:49			27	55	57		
16/12/2023 16:15			86	66	73	Not Clear	
16/12/2023 16:30			72	73	80	Not Clear	
16/12/2023 16:43			47	74	79	Not Clear	
16/12/2023 17:22			73	64	69		Wind
16/12/2023 17:27			43	57	64		Wind
16/12/2023 17:50			58	67	70		Wind
16/12/2023 18:04			61	67	71		Wind
16/12/2023 18:08			21	53	61	Not Clear	Wind
16/12/2023 18:27			42	61	67		
16/12/2023 18:30			21	59	64	Not Clear	
16/12/2023 18:52			27	75	83		
16/12/2023 18:58			74	63	67		
16/12/2023 19:47			101	60	70		Wind
16/12/2023 20:19			40	62	70		Wind
16/12/2023 20:40			18	59	65	Not Clear	Wind
16/12/2023 20:52			44	69	77		Wind
16/12/2023 22:39			52	64	70		
16/12/2023 23:45			75	67	71		
17/12/2023 0:39			53	68	78		
17/12/2023 1:09			63	65	74		
17/12/2023 1:21			98	53	66	Not Clear	
17/12/2023 1:30			61	64	67		
17/12/2023 3:22			67	66	73		
17/12/2023 5:43			35	64	71		
17/12/2023 7:37			16	57	63	Not Clear	
17/12/2023 8:18			17	62	70		
17/12/2023 8:38			25	68	75		
17/12/2023 9:27			123	58	67	Not Clear	
17/12/2023 10:29			22	59	68	Not Clear	
17/12/2023 10:55			20	59	66	Not Clear	
17/12/2023 11:44			78	63	72		
17/12/2023 12:15			54	56	62	Not Clear	
17/12/2023 12:38			28	57	65	Not Clear	Wind
17/12/2023 14:31			68	67	74		Wind
17/12/2023 14:50			28	72	81		Wind
17/12/2023 15:11			60	68	72		Wind
17/12/2023 15:42			16	61	67	Not Clear	Wind
17/12/2023 16:05			21	49	60	Not Clear	Wind
17/12/2023 16:20			57	70	75		
17/12/2023 16:42			34	56	63	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
17/12/2023 16:45			108	57	66		Wind
17/12/2023 18:09			23	68	82	Not Clear	Wind
17/12/2023 18:39			25	60	67		
17/12/2023 20:00			83	58	70	Not Clear	
17/12/2023 20:36			36	73	83		
17/12/2023 20:41			21	58	66	Not Clear	
17/12/2023 20:46			93	58	67		
17/12/2023 23:01			37	66	73		
17/12/2023 23:47			39	39	46	Not Clear	
18/12/2023 1:00			108	53	61		
18/12/2023 1:26			56	65	73		
18/12/2023 1:43			42	59	65		
18/12/2023 1:57			45	75	86		
18/12/2023 2:39			39	66	74		
18/12/2023 3:07			63	68	73		
18/12/2023 3:38			39	61	65		
18/12/2023 3:41			48	67	71		
18/12/2023 4:58			67	58	65	Not Clear	
18/12/2023 5:15			15	60	65	Not Clear	
18/12/2023 6:02			39	66	73		
18/12/2023 7:45			36	57	70	Not Clear	
18/12/2023 9:36			33	63	66		
18/12/2023 10:00			27	61	69		
18/12/2023 10:22			28	69	76		
18/12/2023 10:43			17	55	60	Not Clear	
18/12/2023 10:59			34	66	71		
18/12/2023 11:15			71	69	74		
18/12/2023 12:23			47	71	82		
18/12/2023 12:48			22	57	64	Not Clear	
18/12/2023 13:31			72	58	64	Not Clear	
18/12/2023 13:42			33	61	66		
18/12/2023 15:29			25	60	65	Not Clear	Wind
18/12/2023 16:39			24	56	63	Not Clear	
18/12/2023 17:10			50	65	71		
18/12/2023 17:56			18	56	62	Not Clear	
18/12/2023 18:29			24	52	58	Not Clear	
18/12/2023 18:45			44	64	69		
18/12/2023 19:08			44	69	85		
18/12/2023 19:38			30	70	76		
18/12/2023 19:57			52	57	62	Not Clear	
18/12/2023 20:25			63	59	65		
18/12/2023 20:27			50	65	69		
18/12/2023 20:45			18	58	65	Not Clear	
18/12/2023 21:15			103	57	69		
18/12/2023 22:28			34	64	67		
18/12/2023 23:11			34	67	73		
19/12/2023 0:20			28	68	75		
19/12/2023 1:01			49	72	80		
19/12/2023 1:18			46	72	84		
19/12/2023 1:49			69	62	68		
19/12/2023 2:26			44	61	70		
19/12/2023 2:45			58	62	71		
19/12/2023 3:25			116	58	65		
19/12/2023 3:39			75	67	76		
19/12/2023 3:52			47	68	76		
19/12/2023 5:24			45	60	66		
19/12/2023 6:03			30	66	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
19/12/2023 7:28			50	67	77	Not Clear	
19/12/2023 7:45			37	55	65	Not Clear	
19/12/2023 7:49			29	54	59	Not Clear	
19/12/2023 8:59			34	69	76		
19/12/2023 9:12			27	71	79		
19/12/2023 9:44			32	63	67		
19/12/2023 9:50			15	60	66	Not Clear	
19/12/2023 10:02			49	55	66	Not Clear	
19/12/2023 10:33			28	53	60	Not Clear	
19/12/2023 11:56			59	67	71		
19/12/2023 12:10			66	54	62		
19/12/2023 12:13			36	66	73		
19/12/2023 12:21			27	61	69	Not Clear	
19/12/2023 12:28			53	66	74		
19/12/2023 12:34			18	60	66		
19/12/2023 13:00			34	64	71		
19/12/2023 13:57			27	62	70		
19/12/2023 14:51			67	65	72		
19/12/2023 15:30			19	58	65		
19/12/2023 16:10			56	67	76		
19/12/2023 16:37			17	53	60	Not Clear	
19/12/2023 17:05			46	63	68		
19/12/2023 18:26			36	61	69	Not Clear	
19/12/2023 19:00			32	72	81		Wind
19/12/2023 19:59			58	72	84		
19/12/2023 20:14			81	66	86	Not Clear	
19/12/2023 20:45			59	66	71		Wind
19/12/2023 21:11			35	70	80	Not Clear	Wind
19/12/2023 21:54			36	63	72		Wind
19/12/2023 22:03			35	57	66		Rain
19/12/2023 22:59			23	62	68		Wind
19/12/2023 23:12			38	67	75		Wind
19/12/2023 23:19			18	65	70	Not Clear	
19/12/2023 23:56			37	69	71	Not Clear	Rain
20/12/2023 0:12			85	54	61		Rain
20/12/2023 0:56			62	73	84	Not Clear	
20/12/2023 1:09			31	70	78		
20/12/2023 1:37			58	67	78		Rain
20/12/2023 1:47			81	64	69	Not Clear	Rain
20/12/2023 2:21			189	66	69	Not Clear	Rain
20/12/2023 3:22			42	68	70	Not Clear	Rain
20/12/2023 3:42			38	70	79	Not Clear	Rain
20/12/2023 4:04			38	69	74	Not Clear	Rain
20/12/2023 6:03			35	63	68		Rain
20/12/2023 6:34			36	58	66	Not Clear	Rain
20/12/2023 7:50			25	59	65	Not Clear	Rain
20/12/2023 8:47			73	67	71		
20/12/2023 9:35			35	67	76		Rain
20/12/2023 9:57			33	62	65	Not Clear	Rain
20/12/2023 10:26			130	63	70	Not Clear	Rain
20/12/2023 10:28			63	67	72	Not Clear	Rain
20/12/2023 10:34			41	60	65	Not Clear	Rain
20/12/2023 10:43			32	69	74		Rain
20/12/2023 11:10			44	67	72		Rain
20/12/2023 11:55			60	63	69	Not Clear	Rain
20/12/2023 12:37			27	65	68	Not Clear	Rain
20/12/2023 12:55			57	58	65	Not Clear	Rain

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
20/12/2023 12:56			61	69	79		Rain
20/12/2023 13:42			59	69	78		Rain
20/12/2023 14:03			31	69	80	Not Clear	Rain
20/12/2023 14:21			38	59	67	Not Clear	Rain
20/12/2023 14:29			62	67	70		Rain
20/12/2023 14:58			28	63	70	Not Clear	Rain
20/12/2023 15:29			35	60	66	Not Clear	Rain
20/12/2023 16:37			29	56	66	Not Clear	Rain
20/12/2023 16:54			52	66	75		Rain
20/12/2023 18:27			30	58	67	Not Clear	
20/12/2023 18:31			49	66	74		
20/12/2023 18:51			34	67	74		
20/12/2023 19:54			191	50	57	Not Clear	
20/12/2023 20:14			180	53	63	Not Clear	
20/12/2023 20:18			40	45	47	Not Clear	
20/12/2023 20:27			51	64	68		
20/12/2023 20:41			21	54	62	Not Clear	
20/12/2023 22:01			26	62	68	Not Clear	
20/12/2023 22:26			102	54	66	Not Clear	
20/12/2023 23:39			35	69	78		

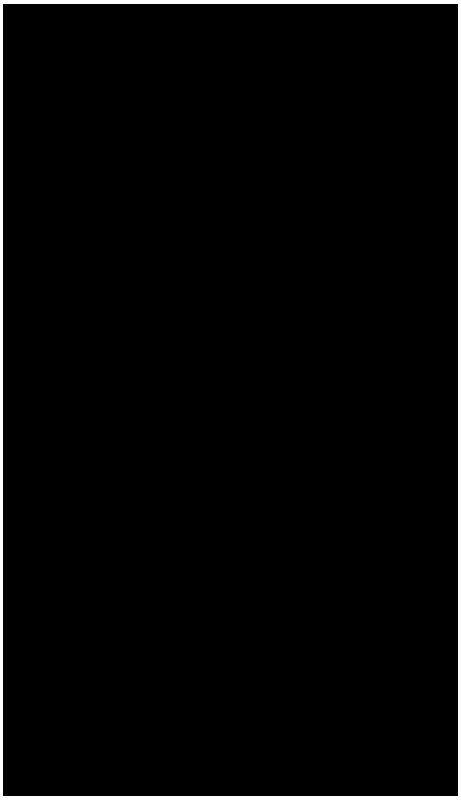
4 Lakewood Crescent, Casula

Table 17 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
2/11/2023	57	67
3/11/2023	59	67
4/11/2023	56	67
5/11/2023	57	67
6/11/2023	60	67
7/11/2023	58	67
8/11/2023	57	67
9/11/2023	60	67
Overall	**58**	**67**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 11 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
2/11/2023 0:39			56	67	76		
2/11/2023 0:45			34	75	82		
2/11/2023 0:50			101	65	74		
2/11/2023 1:18			42	69	74		
2/11/2023 1:46			36	67	76		
2/11/2023 2:51			48	68	79		
2/11/2023 3:49			70	69	79	Passenger	
2/11/2023 4:03			39	66	75		
2/11/2023 4:10			28	75	86		
2/11/2023 5:22			30	72	80		
2/11/2023 7:04			36	67	74		
2/11/2023 9:05			95	66	73		
2/11/2023 10:27			46	74	80		
2/11/2023 10:57			29	76	84		
2/11/2023 11:24			119	65	77		
2/11/2023 11:58			105	69	79		
2/11/2023 12:06			42	70	79		
2/11/2023 12:39			39	74	83		
2/11/2023 12:57			33	74	84		
2/11/2023 13:53			41	67	77	Not Clear	
2/11/2023 14:09			55	67	78		
2/11/2023 14:13			33	73	84	Passenger	
2/11/2023 14:43			101	67	76	Passenger	
2/11/2023 14:54			60	64	73	Not Clear	
2/11/2023 15:27			50	70	78		
2/11/2023 15:54			31	72	83		Wind
2/11/2023 17:02			54	76	100		
2/11/2023 17:08			53	70	78		
2/11/2023 18:30			53	70	80		Wind
2/11/2023 18:56			38	74	85	Not Clear	
2/11/2023 19:16			35	75	83		
2/11/2023 19:20			36	69	80		
2/11/2023 20:51			72	72	79		
2/11/2023 22:08			71	70	78		
2/11/2023 22:21			44	73	79		
2/11/2023 22:49			33	73	80		
2/11/2023 23:05			43	63	71		
2/11/2023 23:29			37	73	78		
3/11/2023 0:13			68	77	83		
3/11/2023 0:38			55	76	82		
3/11/2023 1:13			94	67	81		
3/11/2023 1:31			27	65	71		
3/11/2023 1:51			85	67	77		
3/11/2023 2:44			34	70	77		
3/11/2023 3:11			54	66	78		
3/11/2023 3:26			41	69	81		
3/11/2023 3:54			83	70	83	Passenger	
3/11/2023 4:10			40	78	83		
3/11/2023 4:45			27	79	86		
3/11/2023 4:53			35	80	86		
3/11/2023 5:41			42	70	78		
3/11/2023 6:12			47	72	81	Passenger	
3/11/2023 7:46			37	67	76		
3/11/2023 8:57			97	66	75		
3/11/2023 10:05			34	73	81		
3/11/2023 10:51			37	72	78		
3/11/2023 11:29			96	69	79		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
3/11/2023 12:06			58	66	75	Not Clear	
3/11/2023 12:31			31	77	84		
3/11/2023 12:42			27	70	80	Not Clear	
3/11/2023 12:49			42	72	85		
3/11/2023 13:08			48	69	81		
3/11/2023 13:44			54	74	89		
3/11/2023 14:09			27	78	83		
3/11/2023 14:51			107	70	83	Passenger	Wind
3/11/2023 15:14			95	68	84		Wind
3/11/2023 16:08			31	70	77		Wind
3/11/2023 17:32			62	67	76		Wind
3/11/2023 18:12			59	66	80		Wind
3/11/2023 18:53			38	73	80		
3/11/2023 19:16			34	74	81		
3/11/2023 19:16			52	73	82		
3/11/2023 20:13			31	71	78		
3/11/2023 20:32			44	79	84		
3/11/2023 20:46			56	75	84		
3/11/2023 21:19			22	53	61	Not Clear	
3/11/2023 21:36			105	69	80	Passenger	
3/11/2023 22:01			58	68	79		
3/11/2023 23:09			35	71	76		
4/11/2023 1:03			38	70	75		
4/11/2023 2:31			33	67	74		
4/11/2023 2:53			44	65	75		
4/11/2023 5:18			32	72	78		
4/11/2023 6:58			40	67	76		
4/11/2023 7:51			35	74	82		
4/11/2023 8:43			102	66	76		
4/11/2023 9:05			96	67	76		
4/11/2023 11:31			67	67	74		Rain
4/11/2023 11:38			76	68	81	Passenger	Rain
4/11/2023 11:43			46	78	84		Rain
4/11/2023 12:26			62	69	79		
4/11/2023 12:52			36	79	85		
4/11/2023 14:30			66	69	79		Wind
4/11/2023 15:41			42	67	79		Wind
4/11/2023 15:47			40	67	76	Not Clear	Wind
4/11/2023 16:28			49	75	88		Wind
4/11/2023 16:57			39	79	84		Wind
4/11/2023 17:12			31	82	92		Wind
4/11/2023 17:14			36	75	83		Wind
4/11/2023 18:26			45	78	84		
4/11/2023 18:48			133	64	79		
4/11/2023 19:00			147	66	77		
4/11/2023 19:16			39	68	75		
4/11/2023 19:58			72	68	78		
4/11/2023 20:06			51	67	76		
4/11/2023 20:44			67	69	80	Passenger	
4/11/2023 20:58			35	74	81		
4/11/2023 21:10			29	72	84		
4/11/2023 21:33			46	72	83		
4/11/2023 22:28			58	70	79		
4/11/2023 22:38			35	75	81		
5/11/2023 0:24			65	72	84	Passenger	
5/11/2023 0:32			105	68	80		
5/11/2023 1:31			91	71	86		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
5/11/2023 1:50			65	67	74		Rain
5/11/2023 2:18			42	71	80		Rain
5/11/2023 4:17			53	67	78		Rain
5/11/2023 5:23			36	68	82		Rain
5/11/2023 5:55			36	72	80		Wind
5/11/2023 6:09			66	73	85		Wind
5/11/2023 7:23			61	67	78		Rain
5/11/2023 7:27			44	72	79		Rain
5/11/2023 9:45			41	70	80		Rain
5/11/2023 9:57			65	70	79		Rain
5/11/2023 10:55			49	69	83		
5/11/2023 11:17			43	78	84		Wind
5/11/2023 12:15			38	79	86		Wind
5/11/2023 13:40			91	68	77		Wind
5/11/2023 13:47			37	68	76		Wind
5/11/2023 16:29			45	74	82		Wind
5/11/2023 17:27			41	74	85		Wind
5/11/2023 17:30			65	66	74		Wind
5/11/2023 20:13			15	77	85	Not Clear	
5/11/2023 20:29			50	78	85		
5/11/2023 20:54			31	74	81		
5/11/2023 21:00			36	66	73		
5/11/2023 22:09			75	69	80		
5/11/2023 22:35			39	67	75		
5/11/2023 22:58			39	71	78		
5/11/2023 23:05			35	71	77		
6/11/2023 0:39			69	69	82		
6/11/2023 2:12			29	68	76		
6/11/2023 2:33			42	82	93		
6/11/2023 2:44			25	78	82		
6/11/2023 3:08			55	78	87		
6/11/2023 3:26			59	77	83		
6/11/2023 4:22			42	74	84		
6/11/2023 4:25			72	67	78		
6/11/2023 4:39			22	80	84		
6/11/2023 4:40			96	68	79		
6/11/2023 4:58			38	72	83		
6/11/2023 6:18			31	72	77		
6/11/2023 7:07			36	67	76		
6/11/2023 10:05			39	70	76		
6/11/2023 10:12			40	71	80		
6/11/2023 10:13			41	74	83		
6/11/2023 10:38			30	77	85		
6/11/2023 11:28			29	81	90		
6/11/2023 11:43			81	70	82	Passenger	
6/11/2023 11:53			107	68	79	Passenger	
6/11/2023 12:30			57	71	81		
6/11/2023 12:37			43	77	83		
6/11/2023 12:39			41	65	72	Not Clear	
6/11/2023 13:27			28	75	86		
6/11/2023 17:07			56	69	80		
6/11/2023 19:02			45	71	79		
6/11/2023 19:19			36	75	84		
6/11/2023 19:58			32	75	82		
6/11/2023 20:28			54	76	84		
6/11/2023 20:45			53	83	95		
6/11/2023 21:27			41	76	88		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
6/11/2023 21:40			27	73	79		
6/11/2023 22:55			48	70	78		
6/11/2023 23:02			43	70	77		
7/11/2023 0:41			37	75	82		
7/11/2023 0:48			26	79	92		
7/11/2023 1:12			32	72	79		
7/11/2023 1:22			64	78	86		
7/11/2023 2:25			62	72	82		
7/11/2023 3:01			63	66	75		
7/11/2023 3:39			72	67	75		
7/11/2023 4:25			34	79	87		
7/11/2023 6:18			41	72	78		
7/11/2023 7:26			61	63	74		
7/11/2023 9:11			112	65	73		
7/11/2023 9:29			39	61	68	Not Clear	
7/11/2023 9:47			34	72	80		
7/11/2023 10:57			46	70	77		
7/11/2023 11:09			41	76	81		
7/11/2023 11:35			69	68	79		
7/11/2023 11:38			46	77	85		
7/11/2023 12:07			40	68	76		
7/11/2023 12:24			47	67	77		
7/11/2023 13:02			48	69	77		
7/11/2023 13:23			99	67	77	Not Clear	Wind
7/11/2023 13:28			22	74	83		Wind
7/11/2023 15:50			50	67	78		Wind
7/11/2023 16:16			52	67	75	Not Clear	Wind
7/11/2023 16:28			89	70	87		Wind
7/11/2023 17:34			75	67	74		Wind
7/11/2023 19:06			36	72	78		
7/11/2023 19:15			38	74	83		
7/11/2023 19:24			41	71	76		
7/11/2023 21:24			39	78	85		
7/11/2023 21:29			68	73	83		
7/11/2023 21:58			75	68	78		
7/11/2023 22:28			62	74	83		
8/11/2023 0:12			43	66	76		
8/11/2023 0:39			31	73	79		
8/11/2023 0:54			44	71	78		
8/11/2023 1:25			50	70	79		
8/11/2023 1:46			52	69	83		
8/11/2023 2:01			80	68	81		
8/11/2023 2:09			39	77	83		
8/11/2023 2:29			41	73	86		
8/11/2023 2:53			39	81	87		
8/11/2023 3:05			45	68	79		
8/11/2023 3:26			41	71	79		
8/11/2023 3:46			71	69	77	Passenger	
8/11/2023 4:14			24	69	77		
8/11/2023 5:54			46	65	73		
8/11/2023 6:10			43	71	77		
8/11/2023 8:55			79	65	74	Not Clear	
8/11/2023 9:16			67	68	80	Not Clear	
8/11/2023 9:32			26	62	74	Not Clear	
8/11/2023 9:43			41	72	81		
8/11/2023 10:12			35	73	81		
8/11/2023 11:19			89	67	79		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
8/11/2023 11:44			30	75	86		
8/11/2023 12:28			42	73	81		
8/11/2023 13:02			61	69	77		
8/11/2023 14:18			24	68	75	Not Clear	Wind
8/11/2023 14:38			27	69	75		Wind
8/11/2023 15:20			28	65	71	Not Clear	Wind
8/11/2023 15:51			99	68	76		Wind
8/11/2023 17:05			49	69	77		Wind
8/11/2023 17:27			46	71	82		
8/11/2023 19:06			31	71	80		
8/11/2023 19:47			44	72	79		
8/11/2023 19:59			31	76	86		
8/11/2023 20:19			28	72	80		
8/11/2023 20:44			60	72	78		
8/11/2023 21:02			53	67	78		
8/11/2023 21:43			43	67	78		
8/11/2023 22:18			14	73	84	Not Clear	
8/11/2023 23:03			37	72	83		
8/11/2023 23:15			39	66	74		
8/11/2023 23:52			36	75	82		
8/11/2023 23:58			12	77	83	Not Clear	
9/11/2023 0:00			33	49	60	Not Clear	
9/11/2023 0:16			35	75	81		
9/11/2023 1:05			44	70	75		
9/11/2023 1:11			91	67	78		
9/11/2023 1:31			52	82	93		
9/11/2023 1:41			38	81	87		
9/11/2023 2:37			35	80	92		
9/11/2023 2:47			43	81	87		
9/11/2023 3:00			16	62	74		
9/11/2023 3:51			73	70	83		
9/11/2023 5:08			64	71	82		
9/11/2023 6:12			38	72	80		
9/11/2023 8:16			75	67	78		
9/11/2023 9:36			38	72	78		
9/11/2023 10:14			46	71	84		
9/11/2023 10:24			40	68	83	Not Clear	
9/11/2023 10:28			50	76	87		
9/11/2023 10:58			49	74	83		
9/11/2023 11:37			47	76	87		
9/11/2023 12:07			61	66	75	Not Clear	
9/11/2023 12:16			47	69	78		
9/11/2023 12:25			32	80	89		
9/11/2023 13:29			31	71	81		
9/11/2023 13:57			58	69	81		Wind
9/11/2023 14:37			43	71	77		Wind
9/11/2023 14:55			24	67	77	Not Clear	
9/11/2023 15:07			55	68	79	Not Clear	
9/11/2023 17:08			67	67	75		
9/11/2023 18:08			86	66	78		
9/11/2023 18:16			51	71	83		
9/11/2023 19:27			33	72	79		
9/11/2023 19:41			45	70	75		
9/11/2023 20:18			42	73	80		
9/11/2023 21:15			57	68	78		
9/11/2023 21:17			38	79	85		
9/11/2023 21:28			40	65	73		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
9/11/2023 22:06			76	72	82		
9/11/2023 22:11			40	75	82		
9/11/2023 22:48			17	77	84		
9/11/2023 23:09			48	69	78		
9/11/2023 23:42			36	73	81		
9/11/2023 23:50			23	81	88		
9/11/2023 23:51			69	67	83		

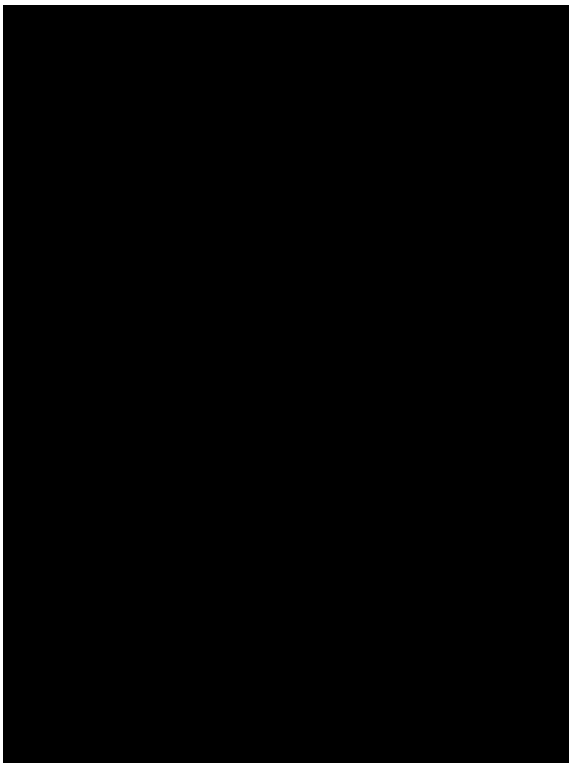
150 Broomfield Street, Cabramatta

Table 18 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
29/11/2023	49	58
30/11/2023	48	58
1/12/2023	49	58
2/12/2023	48	58
3/12/2023	48	58
4/12/2023	49	58
5/12/2023	48	58
6/12/2023	50	58
Overall	**49**	**58**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 12 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
29/11/2023 0:51			16	56	61	Not Clear	
29/11/2023 3:17			43	64	73		
29/11/2023 3:56			48	61	71		
29/11/2023 5:24			63	63	74		Rain
29/11/2023 6:17			62	65	73		
29/11/2023 8:58			79	60	69		
29/11/2023 8:33			74	62	77		
29/11/2023 18:07			93	63	73		
29/11/2023 18:40			54	62	68		
29/11/2023 19:21			58	64	70		
29/11/2023 21:21			82	59	64		
29/11/2023 23:19			80	56	64		
30/11/2023 3:51			92	60	70		
30/11/2023 4:09			78	61	70		
30/11/2023 6:12			46	62	69		
30/11/2023 8:50			60	61	68		
30/11/2023 8:30			42	62	73		
30/11/2023 8:50			58	61	68		
30/11/2023 9:40			111	61	76	Not Clear	
30/11/2023 12:07			44	60	65		
30/11/2023 12:20			43	61	71		
30/11/2023 14:15			41	67	76	Not Clear	
30/11/2023 15:10			75	61	76	Not Clear	
30/11/2023 21:43			56	64	73		
30/11/2023 22:45			46	62	71		
1/12/2023 3:18			36	61	67		
1/12/2023 4:00			62	61	72		
1/12/2023 4:20			77	59	69		
1/12/2023 6:24			41	62	67		
1/12/2023 9:15			90	60	67		
1/12/2023 14:39			35	59	70	Not Clear	Wind
1/12/2023 16:15			45	60	66	Not Clear	Wind
1/12/2023 17:21			50	62	69		Wind
1/12/2023 18:39			39	60	67		Wind
2/12/2023 0:05			96	62	70		
2/12/2023 4:44			57	62	71		
2/12/2023 4:59			42	59	69		
2/12/2023 8:41			75	61	68		
2/12/2023 11:44			63	63	77		
2/12/2023 17:53			96	60	68		Wind
2/12/2023 18:24			62	60	70		
2/12/2023 18:38			44	60	72	Not Clear	
2/12/2023 22:55			41	60	67		
2/12/2023 23:53			86	61	69		
3/12/2023 0:34			183	57	71	Not Clear	
3/12/2023 3:01			44	59	65		
3/12/2023 3:57			38	61	67		
3/12/2023 5:46			71	64	73		
3/12/2023 11:18			224	61	79	Not Clear	
3/12/2023 12:19			164	55	67	Not Clear	Wind
3/12/2023 21:25			71	61	69		
3/12/2023 21:24			79	61	69		
3/12/2023 22:57			68	59	66		
4/12/2023 3:11			76	63	74		
4/12/2023 4:26			75	58	71		
4/12/2023 5:23			78	63	73		
4/12/2023 7:35			34	67	75		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
4/12/2023 15:06			59	56	68	Not Clear	Wind
4/12/2023 17:31			73	60	70		Wind
4/12/2023 18:31			155	57	67		
4/12/2023 18:03			73	57	70	Not Clear	
4/12/2023 19:04			68	62	72		
4/12/2023 22:53			70	63	73		
5/12/2023 4:09			103	61	72		
5/12/2023 5:30			91	55	62		
5/12/2023 7:08			47	60	71	Not Clear	
5/12/2023 9:24			155	66	86	Not Clear	
5/12/2023 12:09			67	63	78		
5/12/2023 13:01			72	66	79	Not Clear	
5/12/2023 13:01			62	66	79		
5/12/2023 15:10			59	53	66	Not Clear	
5/12/2023 17:21			97	57	68		
5/12/2023 22:49			69	62	71		
6/12/2023 3:13			70	61	71		
6/12/2023 4:10			108	56	67		Wind
6/12/2023 5:35			71	63	72		
6/12/2023 8:51			120	58	67	Not Clear	
6/12/2023 9:48			104	67	81	Not Clear	Wind
6/12/2023 14:50			75	58	68	Not Clear	Wind
6/12/2023 16:53			29	58	64	Not Clear	Wind
6/12/2023 17:11			102	56	70	Not Clear	Wind
6/12/2023 19:09			58	61	73		Wind
6/12/2023 20:52			84	64	75		
6/12/2023 21:57			54	62	77	Not Clear	
6/12/2023 22:56			71	64	74		
29/11/2023 8:33			131	60	77	Not Clear	
29/11/2023 9:47			44	62	73		
29/11/2023 12:26			41	61	73		
29/11/2023 13:15			120	61	73		
29/11/2023 13:30			78	61	72		
29/11/2023 14:15			69	54	64	Not Clear	Wind
29/11/2023 17:41			37	61	74	Not Clear	
29/11/2023 23:03			65	62	74		
30/11/2023 1:06			90	60	73		
30/11/2023 1:29			59	61	70	Not Clear	
30/11/2023 1:35			55	46	55	Not Clear	
30/11/2023 2:34			51	62	72	Not Clear	
30/11/2023 2:47			91	57	66		
30/11/2023 13:11			71	61	68		
30/11/2023 14:15			90	65	76	Not Clear	
30/11/2023 15:50			49	56	66	Not Clear	
30/11/2023 16:43			79	62	72		
30/11/2023 18:49			92	61	70		
30/11/2023 19:40			43	63	70		
30/11/2023 21:43			82	63	73		
1/12/2023 0:06			62	63	69		
1/12/2023 1:08			67	60	70		
1/12/2023 2:04			314	58	73		
1/12/2023 10:05			54	62	70		
1/12/2023 12:42			83	64	79		
1/12/2023 13:12			80	60	69		
1/12/2023 13:41			94	61	69		
1/12/2023 17:21			70	60	69		Wind
1/12/2023 18:39			45	60	67	Not Clear	Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
1/12/2023 21:08			57	62	70		
2/12/2023 2:23			46	63	69		
2/12/2023 8:54			44	62	69		
2/12/2023 15:55			59	61	70		
2/12/2023 16:09			64	60	69		
2/12/2023 16:09			73	60	69		
2/12/2023 17:08			86	59	65		
2/12/2023 19:07			38	64	71		
2/12/2023 21:36			47	63	68		
3/12/2023 0:22			37	55	68	Not Clear	
3/12/2023 1:10			100	62	74		
3/12/2023 1:42			102	58	68		
3/12/2023 12:36			55	56	62		Wind
3/12/2023 12:50			34	62	68		Wind
3/12/2023 13:34			25	72	85	Not Clear	Wind
3/12/2023 19:37			59	59	67		
3/12/2023 22:38			53	61	68		
4/12/2023 0:05			79	63	75		
4/12/2023 1:51			54	54	64	Not Clear	
4/12/2023 8:03			72	56	63	Not Clear	
4/12/2023 9:57			64	62	76		
4/12/2023 10:30			58	62	74		
4/12/2023 11:43			52	54	64	Not Clear	
4/12/2023 12:07			99	58	78	Not Clear	
4/12/2023 12:29			92	63	78	Not Clear	
4/12/2023 19:29			38	64	76		
5/12/2023 2:04			62	58	67		
5/12/2023 1:45			137	53	64	Not Clear	
5/12/2023 2:19			88	57	67		
5/12/2023 3:20			67	60	69		
5/12/2023 9:57			41	62	68		
5/12/2023 12:30			111	57	69	Not Clear	
5/12/2023 13:01			79	65	79	Not Clear	
5/12/2023 13:42			54	63	72		
5/12/2023 16:12			178	56	66	Not Clear	
5/12/2023 18:40			44	60	67		
5/12/2023 19:51			80	57	69		
5/12/2023 23:04			98	60	67		
6/12/2023 1:11			63	61	70		
6/12/2023 6:45			83	58	65	Not Clear	
6/12/2023 7:30			70	59	68	Not Clear	
6/12/2023 10:17			107	69	81	Not Clear	
6/12/2023 10:43			149	69	77	Not Clear	
6/12/2023 13:15			100	56	71	Not Clear	Wind
6/12/2023 13:00			145	59	74	Not Clear	Wind
6/12/2023 17:37			52	59	65		Wind
6/12/2023 18:40			47	61	66		Wind

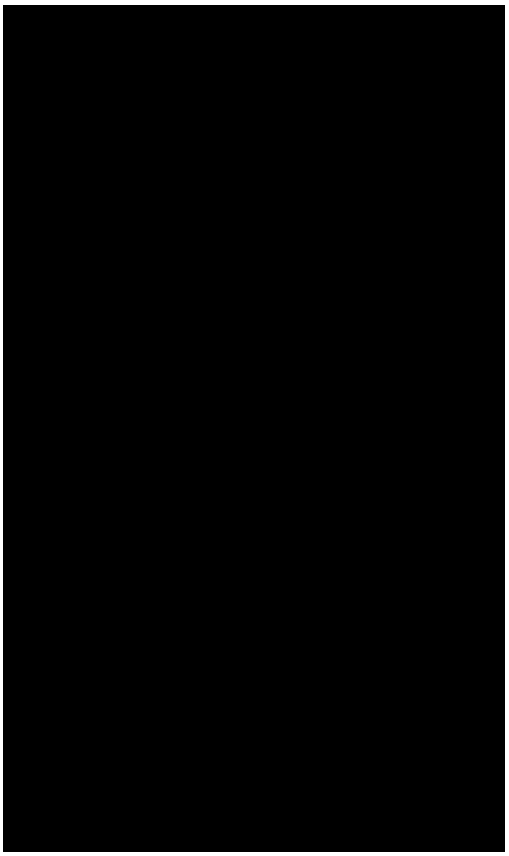
8 McGowen Crescent, Liverpool

Table 19 Measured $L_{Aeq\ 24hr}$ noise levels for each day for freight trains on the SSFL, dB(A)

Date	SSFL Contribution, $L_{Aeq,}$	2023 Criteria, $L_{Aeq,\ 24hr}$
12/12/2023	52	66
13/12/2023	52	66
14/12/2023	52	66
15/12/2023	51	66
16/12/2023	51	66
17/12/2023	51	66
18/12/2023	50	66
19/12/2023	52	66
20/12/2023	52	66
Overall	**51**	**66**

In the comments below “Passenger” indicates that there may have been a passenger train passing at the same time as the SSFL freight train was passing. ‘Not Clear’ indicates that the measured noise levels due to the freight train pass by may have been affected by extraneous noise.

Figure 13 Logger photo



Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
12/12/2023 0:48			28	69	73		
12/12/2023 1:16			73	64	67		
12/12/2023 1:24			63	70	76		
12/12/2023 1:37			41	73	79		
12/12/2023 2:02			44	66	72		
12/12/2023 2:19			105	66	75		
12/12/2023 2:36			72	61	68		
12/12/2023 3:06			52	74	81		
12/12/2023 3:14			43	65	72		
12/12/2023 4:02			21	67	70	Passenger	
12/12/2023 4:26			100	66	75	Passenger	
12/12/2023 5:28			34	70	78	Passenger	Rain
12/12/2023 5:53			39	67	75		Rain
12/12/2023 8:49			94	68	79	Passenger	
12/12/2023 9:39			48	69	74		
12/12/2023 10:52			34	71	78		
12/12/2023 11:01			58	62	70	Passenger	
12/12/2023 11:37			60	64	68		
12/12/2023 12:10			34	68	77		
12/12/2023 12:28			83	61	69		
12/12/2023 12:38			30	67	73		
12/12/2023 14:14			38	63	73		
12/12/2023 14:22			78	69	81		
12/12/2023 15:34			36	71	80		
12/12/2023 16:21			71	67	75		Wind
12/12/2023 17:00			106	68	78		Wind
12/12/2023 17:13			53	67	72		Wind
12/12/2023 18:22			45	71	79		Wind
12/12/2023 18:50			41	69	80	Passenger	
12/12/2023 19:32			68	60	71	Passenger	
12/12/2023 20:13			48	68	77		
12/12/2023 20:14			34	66	72		
12/12/2023 21:00			90	65	72		
12/12/2023 21:11			49	66	72		
12/12/2023 21:23			45	68	72		
12/12/2023 21:36			85	69	77		
12/12/2023 22:47			39	69	76		
12/12/2023 23:18			63	63	68		
13/12/2023 0:18			51	66	69		
13/12/2023 1:11			78	70	80		
13/12/2023 1:17			54	74	82		
13/12/2023 1:19			43	67	70		
13/12/2023 1:24			62	63	74		
13/12/2023 1:42			71	68	74	Passenger	
13/12/2023 3:29			59	70	79		
13/12/2023 3:31			38	74	75		
13/12/2023 3:39			39	66	73		
13/12/2023 3:44			34	69	74		
13/12/2023 6:26			39	67	75		
13/12/2023 6:44			66	71	80		
13/12/2023 8:37			51	62	72		
13/12/2023 8:54			56	66	76		
13/12/2023 9:30			50	66	69		
13/12/2023 10:06			32	69	76		
13/12/2023 10:14			59	64	70		
13/12/2023 10:31			80	64	72	Passenger	
13/12/2023 10:54			13	62	58	Not Clear	

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
13/12/2023 11:24			47	67	71		
13/12/2023 11:42			15	57	63	Not Clear	
13/12/2023 11:58			64	64	68		
13/12/2023 12:59			77	68	75		
13/12/2023 13:31			50	63	70	Passenger	
13/12/2023 13:52			77	66	72		
13/12/2023 14:39			58	70	82		
13/12/2023 14:50			41	65	73		
13/12/2023 15:33			17	58	65	Not Clear	Wind
13/12/2023 17:24			55	67	73		Wind
13/12/2023 17:51			49	69	77		Wind
13/12/2023 18:26			54	69	76		Wind
13/12/2023 19:06			42	67	73		
13/12/2023 19:52			35	70	75		
13/12/2023 20:19			54	66	73		
13/12/2023 20:50			69	65	73		
13/12/2023 21:29			82	64	71		Rain
13/12/2023 21:35			70	64	72		Rain
13/12/2023 22:07			73	65	70		Rain
14/12/2023 0:10			35	69	70		
14/12/2023 0:14			41	67	71		
14/12/2023 1:17			101	72	84		
14/12/2023 1:26			50	68	74		
14/12/2023 1:31			69	70	80		
14/12/2023 2:48			43	68	72		
14/12/2023 3:12			55	70	76		
14/12/2023 3:18			44	71	82		
14/12/2023 3:23			28	69	72		
14/12/2023 3:54			81	68	77		
14/12/2023 4:20			72	66	75		Rain
14/12/2023 5:26			36	70	77		
14/12/2023 9:39			51	66	71		
14/12/2023 9:57			74	58	67	Not Clear	
14/12/2023 10:29			32	71	80		
14/12/2023 12:06			63	64	70		
14/12/2023 12:25			88	61	69		
14/12/2023 12:29			76	60	67		
14/12/2023 12:53			48	70	81		
14/12/2023 13:14			72	58	67		
14/12/2023 13:31			38	68	77		Wind
14/12/2023 13:44			89	64	71		Wind
14/12/2023 14:03			77	70	83		Wind
14/12/2023 14:22			69	60	66		Wind
14/12/2023 15:09			104	59	71	Not Clear	Wind
14/12/2023 17:17			92	63	71		Wind
14/12/2023 17:35			75	63	70		Wind
14/12/2023 18:58			42	65	75		
14/12/2023 19:18			77	62	70	Passenger	
14/12/2023 19:45			45	69	77		
14/12/2023 20:17			42	62	66		
14/12/2023 20:35			58	65	72		
14/12/2023 20:48			62	66	73		
14/12/2023 21:27			52	72	79		Wind
14/12/2023 21:29			61	62	68		Wind
14/12/2023 21:42			48	65	72		Wind
14/12/2023 23:12			50	68	72		
15/12/2023 0:29			53	72	78		Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
15/12/2023 1:12			45	67	71		Wind
15/12/2023 1:17			103	66	72		
15/12/2023 1:46			35	64	69		
15/12/2023 1:55			64	67	74		
15/12/2023 2:54			58	69	73		
15/12/2023 2:58			39	69	77		
15/12/2023 3:17			38	68	74		
15/12/2023 3:51			68	67	74		
15/12/2023 3:53			31	69	72		
15/12/2023 6:02			56	65	72		
15/12/2023 6:14			53	65	75		
15/12/2023 8:46			38	68	77		
15/12/2023 9:20			59	61	67		
15/12/2023 9:41			105	63	70		
15/12/2023 10:17			32	71	75		
15/12/2023 10:29			58	63	71		
15/12/2023 10:40			29	72	80		
15/12/2023 11:00			62	68	76		
15/12/2023 11:29			86	63	71		
15/12/2023 11:49			45	58	64	Not Clear	
15/12/2023 12:06			52	67	71		
15/12/2023 12:25			43	61	68		
15/12/2023 12:55			52	68	74		
15/12/2023 13:06			49	68	79		
15/12/2023 13:30			46	61	66		
15/12/2023 14:00			34	68	72		
15/12/2023 15:39			109	65	71		
15/12/2023 15:49			62	60	67		Wind
15/12/2023 17:06			54	66	69		Wind
15/12/2023 17:55			87	62	68		Wind
15/12/2023 18:37			39	68	76		Wind
15/12/2023 18:44			35	68	78		Wind
15/12/2023 19:06			51	70	77		
15/12/2023 19:21			34	70	73		
15/12/2023 20:15			51	64	72		
15/12/2023 20:48			72	68	73		
15/12/2023 21:43			56	65	70		
15/12/2023 22:48			41	71	77		
15/12/2023 23:10			33	71	78		
16/12/2023 0:51			30	72	78		
16/12/2023 1:14			38	68	74		
16/12/2023 1:45			44	65	71		
16/12/2023 2:03			56	70	73		
16/12/2023 3:17			42	71	76		
16/12/2023 6:03			38	68	77		
16/12/2023 8:40			85	63	71		
16/12/2023 9:03			33	69	76		
16/12/2023 9:11			39	67	76		
16/12/2023 11:25			72	66	76		
16/12/2023 12:28			68	62	68		Wind
16/12/2023 13:19			69	66	73	Not Clear	
16/12/2023 13:28			68	65	71	Not Clear	
16/12/2023 13:58			37	66	75		
16/12/2023 15:55			75	62	70		
16/12/2023 16:18			61	68	71		
16/12/2023 17:12			90	64	74		
16/12/2023 17:43			78	62	74		Wind

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
16/12/2023 18:01			81	68	80		Wind
16/12/2023 18:15			98	67	75		
16/12/2023 18:43			33	70	75		
16/12/2023 18:46			33	78	82		
16/12/2023 19:15			74	64	75		Wind
16/12/2023 19:32			41	71	74		Wind
16/12/2023 20:14			73	63	70		Wind
16/12/2023 20:31			46	67	79		Wind
16/12/2023 21:20			35	68	74		Wind
16/12/2023 23:48			60	64	72		
17/12/2023 0:00			101	69	80		
17/12/2023 0:29			76	67	75	Passenger	
17/12/2023 0:57			79	70	79		
17/12/2023 1:12			56	70	73		
17/12/2023 1:38			69	64	70		
17/12/2023 3:11			73	70	79		
17/12/2023 3:29			40	68	76		
17/12/2023 5:54			40	71	79	Passenger	
17/12/2023 7:31			39	67	73		
17/12/2023 8:28			31	68	74		
17/12/2023 9:43			67	66	76		
17/12/2023 11:26			73	65	72		
17/12/2023 11:57			55	71	81		
17/12/2023 13:57			42	65	73		Wind
17/12/2023 14:21			84	68	78	Passenger	Wind
17/12/2023 14:40			32	71	74		Wind
17/12/2023 15:20			75	69	72		Wind
17/12/2023 16:29			72	71	80		
17/12/2023 17:00			56	66	76		Wind
17/12/2023 20:13			80	64	72		
17/12/2023 20:25			45	69	73		
17/12/2023 20:32			41	70	72		
17/12/2023 23:14			42	67	71		
17/12/2023 23:50			52	66	76		
18/12/2023 0:56			58	64	72		
18/12/2023 1:12			41	68	73		
18/12/2023 1:13			70	68	75		
18/12/2023 1:27			37	67	71		
18/12/2023 2:50			39	70	78		
18/12/2023 3:17			74	70	76		
18/12/2023 3:24			32	69	72		
18/12/2023 3:51			67	70	77		
18/12/2023 4:40			57	67	73		
18/12/2023 6:14			49	65	73		
18/12/2023 7:47			39	67	75		
18/12/2023 9:47			40	66	76		
18/12/2023 10:13			30	71	78		
18/12/2023 10:22			45	65	72		
18/12/2023 10:49			39	68	74		
18/12/2023 11:24			82	70	74		
18/12/2023 12:06			67	66	75		
18/12/2023 13:44			47	67	77		
18/12/2023 13:59			39	63	70		
18/12/2023 17:22			67	65	72		
18/12/2023 18:57			48	68	77		
18/12/2023 19:05			47	66	74		
18/12/2023 19:28			34	70	76		

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
18/12/2023 20:01			42	65	75		
18/12/2023 20:08			50	70	79		
18/12/2023 20:14			46	65	74		
18/12/2023 20:48			63	68	73		
18/12/2023 21:30			68	64	67		
18/12/2023 22:39			35	69	72		
18/12/2023 23:00			40	68	71		
19/12/2023 0:07			33	68	71		
19/12/2023 0:48			59	71	77		
19/12/2023 1:05			43	67	77		
19/12/2023 1:28			54	68	72		
19/12/2023 2:15			67	70	80		
19/12/2023 2:39			58	64	71		
19/12/2023 2:58			47	69	71		
19/12/2023 3:10			56	73	82		
19/12/2023 4:01			77	69	81	Passenger	
19/12/2023 5:11			28	72	81		
19/12/2023 6:14			42	67	75		
19/12/2023 7:39			51	71	81		
19/12/2023 8:25			39	70	78		
19/12/2023 8:58			34	71	80		
19/12/2023 9:08			51	68	73		
19/12/2023 10:10			41	68	73		
19/12/2023 10:21			70	65	75		
19/12/2023 11:42			60	70	80		
19/12/2023 11:55			46	68	72		
19/12/2023 12:06			106	65	76		
19/12/2023 12:24			42	66	75		
19/12/2023 12:48			30	69	74		
19/12/2023 13:49			47	64	72		
19/12/2023 14:13			37	63	73		
19/12/2023 14:42			83	66	76		
19/12/2023 16:01			76	66	76		
19/12/2023 17:17			57	66	70		Wind
19/12/2023 17:42			55	68	78		Wind
19/12/2023 18:49			44	67	75		Wind
19/12/2023 19:33			58	63	70	Not Clear	
19/12/2023 19:48			39	67	71		
19/12/2023 20:18			40	65	71		Wind
19/12/2023 20:29			83	66	74		Wind
19/12/2023 21:04			60	65	73	Not Clear	Wind
19/12/2023 21:24			101	65	76	Passenger	Wind
19/12/2023 21:29			80	61	68		
19/12/2023 22:49			24	66	73		Wind
19/12/2023 23:27			43	69	76		
19/12/2023 23:37			24	60	66		
20/12/2023 0:23			40	70	81		
20/12/2023 0:40			117	56	64		
20/12/2023 0:52			20	44	49	Not Clear	
20/12/2023 1:22			62	74	85		Rain
20/12/2023 1:30			35	67	70		Rain
20/12/2023 3:14			62	63	71		Rain
20/12/2023 3:32			58	64	73		Rain
20/12/2023 3:48			53	69	77		Rain
20/12/2023 4:11			55	62	69		Rain
20/12/2023 4:21			78	67	75		Rain
20/12/2023 6:14			37	69	73		Rain

Date and Time	Train	Loco	Passby Duration, sec	LAeq, dB(A)	LAmax, dB(A)	Comments	Met Conditions
20/12/2023 6:47			43	67	74		Rain
20/12/2023 7:59			42	67	75		Rain
20/12/2023 8:59			94	70	82		
20/12/2023 9:43			16	60	66		Rain
20/12/2023 9:45			39	68	73		Rain
20/12/2023 10:11			39	69	75		Rain
20/12/2023 10:39			93	69	79		Rain
20/12/2023 10:43			88	64	71	Not Clear	Rain
20/12/2023 11:32			59	67	73		Rain
20/12/2023 11:54			62	65	69		Rain
20/12/2023 12:37			60	68	76		Rain
20/12/2023 12:46			64	71	81	Passenger	Rain
20/12/2023 13:32			95	69	78		Rain
20/12/2023 14:15			34	64	72		Rain
20/12/2023 14:39			95	68	80		Rain
20/12/2023 15:21			19	61	67	Not Clear	Rain
20/12/2023 17:04			48	70	76		Rain
20/12/2023 17:29			51	66	72		
20/12/2023 18:23			42	70	78		
20/12/2023 18:41			42	68	73		
20/12/2023 20:29			68	64	74		
20/12/2023 20:50			62	68	72		
20/12/2023 21:42			56	67	74		
20/12/2023 22:45			74	64	73		
20/12/2023 23:28			46	68	74		

Appendix D

Source Control Plan

SOURCE CONTROL PLAN
SOUTHERN SYDNEY FREIGHT LINE

1 Introduction

This Source Control Plan is required under Condition 51 of Australian Rail Track Corporation's (ARTC) Southern Sydney Freight Line (SSFL) Approval. The Source Control Plan identifies strategies for source controls including:

- A program of condition monitoring for the purposes of minimising noise emissions from locomotives, freight rollingstock and maintenance activities;
- Targets, assessment, action and review processes for incorporation and implementation of best practices measures.

This Source Control Plan forms part of the SSFL Operational Noise and Vibration Management Plan (ONVMP) (Version J, Wilkinson Murray 2011) and replaces the current Source Control Plan (Chapter 9 ONVMP).

1.1 ARTC Background

ARTC is a company under the Corporations Act owned by the Commonwealth of Australia. ARTC is the rail infrastructure manager for Hunter Valley and Interstate rail networks, providing a one stop shop for freight rail transport across Australia.

In this role, ARTC delivers a range of rail infrastructure projects, manages the operation of rail infrastructure, operates network control and sells train paths to train operators. ARTC do not operate rolling stock.

1.1.1 Operator Access Agreements

ARTC hold Access Agreements with train operators sets out the terms by which ARTC grants access to the rail network. The Access Agreement are negotiated with the train operator but include requirements to prepare an Environmental Management Plan for their operation and comply with ARTC's Environment Protection Licence and any other applicable legislation.

1.2 Southern Sydney Freight Line

The Australian Rail Track Corporation (ARTC) is the rail infrastructure manager for the 36 km SSFL, a dedicated freight line between Birrong and Macarthur in southern Sydney.

The construction of the SSFL alleviated a major bottleneck in the rail freight network that existed in southern Sydney, where freight trains were required to share existing rail lines with the Sydney metropolitan passenger services and there was a period during morning and afternoon peak periods where freight services were not permitted to run. As a result, freight services could not arrive or depart Sydney at the optimum times.

The SSFL commenced operations in December 2012.

2 Noise Management

2.1 Hierarchy of Controls

Noise management measures should be considered in a hierarchical way:

1. Controlling noise at the source;
2. Controlling the transmission of noise; and
3. Controlling noise at the noise sensitive receiver.

2.1.1 Controlling Noise at the Source

Source controls are the most cost effective because they exert their influence everywhere, however they often take a lot of time to implement. Source controls are difficult for ARTC to implement as we do not operate rolling stock which is the main source of noise on the rail network.

However, keeping rail tracks, plant and equipment well maintained are examples of source controls within ARTC's influence.

2.1.2 Controlling the Transmission of Noise

Transmission controls (i.e. noise barriers) are considered the next most desirable control after source controls, as they provide immediate relief to many receivers. Not only first row receivers adjacent to the railway, but dwellings beyond the railway line. In terms of noise reduction, noise barriers provide the greatest benefit when located close to the noise source or receiver location and are least effective when located mid-way between.

2.1.3 Controlling Noise at the Receiver

Receiver controls involve providing acoustic treatment in the form of higher performance windows, door seals and mechanical ventilation to properties to reduce internal noise levels. An obvious disadvantage of building treatments is that they have no impact on external noise levels. Receiver controls for existing properties are the least preferred option because the result is highly dependent on the original construction quality of the dwelling and can often result in high cost for less benefit.

2.2 Maintenance Noise

To maintain a high standard of safety and reliability across the SSFL, ARTC undertakes maintenance often at nights or on weekends to avoid disruptions to rail services and ensure the safety of workers and operational assets.

ARTC complies with Environment Protection Licence (EPL) 3142 when undertaking maintenance activities on the SSFL. Where works are conducted outside of standard construction hours ARTC assess potential noise impacts and uses this information to identify feasible and reasonable noise management measures and undertakes community engagement and consultation.

ARTC has a robust assessment process for routine maintenance works that includes the following:

- Task-based Environmental Impact Assessments (TBEIA);
- Standard Environmental Management Measures for all routine maintenance activities;
- The Noise Prediction Tool, enabling a quantitative noise assessment in accordance with the Interim Construction Noise Guideline (NSW EPA, 2009); and
- Community engagement and notification requirements for all out of hours maintenance works.

2.3 Operational Noise

The SSFL is a single bi-directional line adjacent to two Sydney Trains lines. The SSFL exclusively accommodates freight trains, while the Sydney Trains lines are used by both freight and passenger services.

Operational noise sources include: locomotive noise, brake squeal, idling, curving noise and horn use.

As the track manager, ARTC has limited opportunities to implement source controls. This Section therefore focuses on opportunities to assist and influence the wider rail industry in noise management.

2.3.1 Condition Monitoring

ARTC has an extensive wayside monitoring system that assists operators to manage their rolling stock and reduce noise across our network. ARTC has a range of wayside monitoring systems (the closest station to the SSFL is at Menangle) that monitor wheel and bearing condition ensuring that operators have the required information to ensure that their fleet is in optimum condition.

2.3.2 Noise Abatement

The Director General's Requirements for the SSFL stated that the operation of the SSFL was not to increase existing rail noise levels at adjacent sensitive receivers. Where noise was expected to increase because of the SSFL project, noise abatement was required. As a result, ARTC constructed nearly 5.5km of noise wall along the SSFL, reducing operational rail noise levels for hundreds of sensitive receivers.

Further provision of noise abatement is required if compliance noise monitoring indicates exceedance of noise levels predicted in the SSFL ONVMP.

2.3.3 Noise Modelling

The SSFL noise model, initially prepared to inform the project's Environmental Assessment, has been updated to reflect 2023 train numbers. This is helping ARTC to identify areas of concern and predict future exceedances of the compliance monitoring noise criteria detailed in the ONVMP.

2.3.4 Operator Licencing

Previously in NSW only track managers held EPLs and were responsible for the environmental performance of the rolling stock operating on our network. ARTC has been working with the EPA and train operators over a number of years to develop a new regulatory framework that fairly distributes environmental obligations between track managers and train operators.

As a result the Amendment Regulation (The Protection of the Environment Operations Legislation Amendment (Scheduled Activities) Regulation 2019) created a new scheduled activity to regulate railway rolling stock operation. This means that rolling stock operators (RSO) now have direct responsibility for their environmental performance and are accountable to the EPA under the terms of their EPL.

EPL conditions for RSOs require:

- new train locomotives to comply with noise and air emission limits.
- monitoring and reporting on progress to reduce air and noise emissions.
- providing a way for community members to report noise and air impacts.
- pollution studies into wheel squeal, idling, braking, bunching and stretching and horn use.
- improvements in steering performance to reduce wheel squeal on priority class freight train wagons.

ARTC's EPL 3142 has been updated, in part to address the RSO's responsibilities. The updates are outlined below:

- The licensee must maintain the track to minimise noise impacts on noise sensitive receivers where safe and practicable to do so (Operating Condition O4).
- The licensee must minimise noise impacts on sensitive receivers from locomotives idling on the premises and horn usage on the premises (Operating Condition O5);
- The licensee must minimise noise impacts on sensitive receivers from braking, bunching, stretching of rolling stock on the premises (Operating Condition O6);
- The licensee must identify the Rolling Stock Operator (RSO) which is the subject of a complaint reported to the EPA or the licensee. Details of complaints received by the licensee must be provided to the RSO. The licensee must submit a report to the EPA, providing details of all noise and vibration complaints received, including any identified RSO. (Reporting Condition R4).

ARTC intends to continue to openly engage with the rail industry and EPA as we transition to the new

regulatory system to improve environmental and community outcomes.

2.3.5 Rail Noise Projects

Using complaint data and noise modelling, ARTC can identify aspects of operational rail noise that are causing significant community concern. To date, ARTC has undertaken the following studies that are applicable to the whole ARTC rail network:

- Noise and vibration review of sleeper replacement (2012)
- Rail grinding induced noise (2015)
- Horn noise study (2017, 2018).
- Pollution Study - Operation Report – Idling: Considers actions and practices undertaken by the licensee to prevent/minimise noise and air emissions and impacts on sensitive receivers from locomotive idling on the premises and examines matters related to network operation and control affecting rolling stock operating on the premises (August 2021)
- Pollution Study - Operation Report – Horn use: Considers actions and practices undertaken by the licensee to prevent/minimise noise impacts on sensitive receivers from locomotive horn use on the premises and examines matters related to network operation and control affecting rolling stock operating on the premises (August 2021)
- Pollution Study - Operation Report – Braking, bunching and stretching: Considers actions and practices undertaken by the licensee to prevent/minimise noise impacts on sensitive receivers from braking, bunching and stretching of freight wagons on the premises and examines matters related to network operation and control affecting rolling stock operating on the premises (August 2021)

ARTC will continue to identify opportunities to understand rail noise issues and collaborate with train operators, track managers and Transport for NSW.

3 Targets, Assessment, Action and Review

Condition of Approval 51 required that targets, assessment, actions and review processes are developed for incorporation and implementation of best practice measures. The table below summarises this information for the programmes and initiatives described in Section 2.

	TARGET	ASSESSMENT	ACTION	REVIEW
Rail Maintenance	Compliance with EPL 3142.	TBEIA, SEMMs and Noise Prediction Tool.	Ensure noise assessment and management process are embedded in project management processes.	Review assessment processes and EPL compliance.
Noise Abatement	No increase on pre-SSFL rail noise levels.	1, 2, 5 and 10 year compliance noise monitoring.	Monitor and report as per COAs.	Identify the need for further noise abatement as required.
Noise Modelling	Quality operational rail noise data to enable decision making.	Review model inputs as required.	Consider extending noise model to cover the Metropolitan Freight Network (MFN) to provide a more comprehensive data set.	Use model to identify potential exceedances of compliance criteria and areas of concern.
Operator Licencing	Comply with new regulatory framework that improves community and environmental outcomes.	Identify risks and opportunities for ARTC in the regulatory framework.	Engage with the rail industry and regulator to support and lead the implementation of the regulatory framework.	Monitor effectiveness of the Amendment Regulation. Provide any feedback to regulator during licensing reviews
Rail Noise Projects	Investigate aspects of rail noise that are determined to be of high community concern.	Engage with other track managers, TfNSW and train operators to understand and quantify noise sources.	Implement projects that enable ARTC to provide a better outcome to the community. Attend industry workshops/briefings to identify emerging research or areas for collaboration.	Review effectiveness of implemented projects. Promote the results of rail noise projects to the rail industry.

3.1 Plan Review

Condition 54 of ARTC's SSFL Approval requires that the Source Control Plan is reviewed at 1,2,5 and 10 years from commencement of Project operations. This review has been undertaken as part of the year 10 requirements.

This Plan will be integrated into ARTC's existing systems, and there will be no requirement to update this Plan in the future specifically for the SSFL.