Southwest Metro Station Upgrade Works Package 4:

Marrickville, Canterbury & Lakemba Stations

HSEJV Construction Monitoring Report: March – August 2021



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Revision History

REV	DATE	DESCRIPTION	REVIEW	APPROVED
A	17/11/2021	Original Content Development	Amy Taylor	
B	13/01/2022	Updated to Address Sydney Metro Comments	Ryan O'Leary	
C	01/02/2022	Updated to Address Sydney Metro Comments	Ryan O'Leary	
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Terms and Definitions

TERMS	EXPLANATION
AMM	Additional Mitigation Measures
AMMM	Additional Mitigation Measures Matrices
CEMP	Construction Environmental Management Plan
CoA	Condition of Approval
CNVS	Sydney Metro Construction Noise and Vibration Strategy (2016)
CNVMP	Construction Noise and Vibration Management Plan
CoCB	City of Canterbury Bankstown
CSSI	Critical State Significant Infrastructure
EIS	Environmental Impact Statement
DPE (formerly DPIE)	Department of Planning and Environment
EPA	NSW Environment Protection Authority
ER	Environmental Representative
HSEJV	Haslin Construction & Stephen Edwards Joint Venture
IWC	Inner West Council
M	Monitoring
NATA	National Association of Testing Authorities
NML	Noise Management Level
NVMP	Noise and Vibration Management Plan
REMM	Revised Environmental Mitigation Measure
SWMP	Soil and Water Management Plan
VML	Vibration Management Level

1. Introduction

1.1. Project Summary

The Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney. Sydney Metro City & Southwest comprises two core components – the Chatswood to Sydenham project, and the Sydenham to Bankstown upgrade. This document refers to the Sydenham to Bankstown Section, Southwest Metro Station Upgrade Works Package 4. In particular to the Station Upgrades at Marrickville, Canterbury, and Lakemba, refer to Figure 1 below.

Figure 1: Location of the Project

1.2. Planning Approval Requirements

The Sydney Metro Authority received planning approval to construct the project from the Department of Planning and Environment (DPE). The Conditions of Approval (CoA) Critical State Significant Infrastructure (CSSI) 8256 granted 12 December 2018 cover the works from Marrickville to Bankstown.

A Construction Environmental Management Plan (CEMP) and sub-plans were developed for the project to address all environmental aspects, including construction monitoring. Approval of the plans enabled commencement of Construction on 20 March 2021. Construction monitoring requirements are detailed in the Soil and Water Management Sub-Plan (SWMP) (CoA C3(b) and the Construction Noise and Vibration Management Plan (CNVMP) (CoA C3(a). These plans can be accessed at the HSE JV website: https://hsejv.com.au/home.

Environmental monitoring was undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of the CEMP, and to address approval requirements.

The objectives for this report are to provide construction monitoring results for the 6 months of work on the HSE JV Project as required in the Construction Monitoring Program, from the start of March 2021 to the end of August 2021. This report is provided for information to DPE. It is intended to address the requirements of condition C14 of CSSI 8256.

1.3. Submission Requirements

It is a requirement that this Construction Monitoring Report be submitted to the Planning Secretary (DPE), and relevant regulatory agencies, for information in accordance with Condition C14 of CSSI 8256 every six months as outlined in the Construction Monitoring Program.

1.4. Role of the ER in Reviewing the Report

Sydney Metro engaged, and received DPE approval, for an Independent ER for the Project. The role of the ER, in this instance, is to review documents identified in Condition A26 (d) and in this case reviewing this Construction Monitoring Report (CMR) prior to submission to DPE. The Independent Environmental Representative (ER) has reviewed this CMR prior to submission to the DPE, Inner West Council (IWC) and City of Canterbury Bankstown (CoCB).

2. Records/Details of Pre-Construction Monitoring

Works commenced in February 2021 with non-intrusive survey works, dilapidation reports and site familiarisation.

The Southwest Metro Early Works (SMEW) project conducted water quality monitoring at the Cooks River, adjacent to the rail corridor for the purpose of establishing baseline water quality data from May 2019 to September 2020 at quarterly intervals and also during a number of rainfall events. These monitoring locations (on Broughton Street, Canterbury) are located approximately 150m from the nearest works at Canterbury Station. It is noted that the data captured as part of the monitoring indicates that the water quality within the Cooks River at the monitoring location exceeds several of the ANZECC/ANZG criteria regularly including pH and turbidity. Due to fluctuating results, they offer little in terms of interpretation or predictable trends. Pre-construction baseline water quality data from the Cooks River, if available, will be sourced from the SMEW contractor. No further baseline water quality monitoring is proposed by the Project. HSE JV did not conduct any baseline water quality monitoring further to what was provided by the SMEW project.

The NSW Water Quality and River Flow Objectives (refer Tables below) provide water quality objectives for the Cooks River and Georges River catchments, for the protection of the following within waterways affected by urban development, or estuaries:

- Aquatic ecosystems
- Visual amenity.

As per the Sydney Metro – Water Discharge or Reuse Procedure and HSE JV Soil and Water Management Plan, pH, total suspended solids (TSS)/ turbidity (NTU) and oil and grease are considered the main potential contamination for surface water.

There has been a change in land use from industrial to urban that has taken place at Canterbury. There is a lot of upstream land users that impact on the water quality of the Cooks River. The erosion and sediment control measures are being implemented at Canterbury Station upgrade to ensure that any controlled discharge that does occur will not affect the water quality of the Cooks River. The rain event which occurred at the commencement of construction (WE34) and at Lakemba an uncontrolled discharge due to heavy rain. Note this rain event had started prior to HSE JV occupying the sites and was the first-time access to rail corridors. Water quality was observed to be clear with no oil and grease visible. Note that water passed over hardstand and through existing installed erosion and sediment controls.

Table 1-2NSW water quality objectives

Water quality objective	Indicators	Associated trigger values or criteria	Catchments to which it applies
Aquatic ecosystems			
Maintaining or improving the ecological condition of waterbodies and their riparian zones over the long term	Total phosphorus	Lowland rivers: 0.025 mg/L for rivers flowing to the coast Estuaries: 0.03 mg/L	Cooks River Georges River (Salt Pan Creek)
	Total nitrogen	Lowland rivers: 0.350 mg/L for rivers flowing to the coast Estuaries: 0.300 mg/L	
	Chlorophyll-a	Lowland rivers: 0.005 mg/L. Estuaries: 0.004 mg/L.	
	Turbidity	Lowland rivers: 6–50 NTU Estuaries: 0.5–10 NTU	
	Salinity (electrical conductivity)	Lowland rivers: 125–2200 µS/cm	
	Dissolved oxygen	Lowland rivers: 85–110 % Estuaries: 80–110 %	
	pH	Lowland rivers: 6.5–8.5 Estuaries: 7.0–8.5	
Visual amenity			
Maintain aesthetic qualities of waters	Visual clarity and colour	Natural visual clarity should not be reduced by more than 20 % Natural hue of water should not be changed by more than 10 points on the Munsell Scale Natural reflectance of water should not be changed by more than 50 %	Cooks River Georges River (Salt Pan Creek)
	Surface film and debris	Oils and petrochemicals should not be noticeable as a visible form on the water, nor should they be detectable by odour Waters should be free from floating debris and litter	
	Nuisance organisms	Macrophytes, phytoplankton scums, filamentous algal mats, blue-green algae, sewage fungus and leeches should not be present in unsightly amounts	

Discharge occurred via stabilised controls into the urban stormwater catchment at Lakemba, Canterbury and Marrickville – no discharge as water pooled and filtered through the rail corridor and MSB.

3. Water Quality Monitoring

The Sydney Metro - Water Discharge or Reuse Procedure regulates both onsite reuse and offsite point source discharge. Prior to any discharge off the premises, or reuse within the premises, HSE JV's Environment Manager or Coordinator (or delegate authorised by the Environment Manager/Coordinator) is to sign off that the water is suitable for reuse or discharge.

3.1. Reuse on site

Where practicable, any water collected in excavations / work sites will be reused for the project (e.g. dust suppression, watering retained vegetation). For onsite reuse, the following criteria is utilised:

Table 1 – Criteria for Onsite Reuse

Parameter	Criterion	Method	Time prior to discharge
Oil and grease	None visible	Visual inspection	< 1 hour
pH	6.5 – 8.5	Probe/Meter	< 1 hour

There were no instances of water reuse onsite for the reporting period March through to August 2021. Potable water was used for dust suppression at all stations, where required.

3.2. Water discharge off site

The SWMP includes the Water Quality Monitoring Program which requires water quality monitoring to be undertaken for controlled discharges offsite to ensure compliance with the discharge criteria defined in Section 5.2.2 (refer Table 1 below). of the SWMP. The Water Quality Monitoring Program requires a 6-monthly report from the results of monitoring undertaken prior to controlled discharge offsite. There was one instance of uncontrolled water discharge offsite at Lakemba Station for the reporting period March through to August 2021. Refer to Section 3.6 for details.

Table 2 – Criteria for Offsite Discharge

Parameter	Criterion	Method	Time prior to discharge
Oil and grease	None visible	Visual inspection	< 1 hour
pH	6.5 – 8.5	Probe/Meter	< 1 hour
Total Suspended Solids (TSS)	<50 mg/L	Meter/grab sample	< 1 hour/ <24 hours

3.3. Permit to Dewater

HSE JV have an internal Permit to Dewater system, which ensures compliance with discharge criteria at all times. Monitoring is done prior to each dewatering event and must be in compliance with Section 5.2.2 of the SWMP.

During the reporting period, the residual groundwater collected within the sewer trench at Marrickville was disposed of as liquid waste. pH was checked to confirm that no ASS impacts to the groundwater. Note that the pH was within acceptable criterion.

3.4. Environmental Condition Surveys

No works are within, near/ the immediate vicinity of watercourses including the Cooks River.

The ancillary facility at 6 Charles Street (approved under A17) is located close to the Cooks River at a distance of approximately 20 m.

The Marrickville MSB area is located along a drainage channel that is connected with the Cooks River.

Erosion and sediment controls are in place to prevent discharge offsite to the Cooks River. Refer to Appendix G for Inspections.

3.5. Monitoring following a Rain Event (>20mm) in 24 hours

Regular and ongoing maintenance of erosion and sediment controls, inspections of rumble grids and wheel wash facilities were implemented by the Site Teams. The HSE JV Environment team conducted inspections pre and post rainfall events (>20mm) in 24 hours. Refer to examples in Appendix G.

3.6. Uncontrolled Discharge from Site (Lakemba Station)

On 20 March 2021 during weekend 38 (WE38) possession, significant rainfall was received at Lakemba Station which resulted in water flows off site. This was the first rail possession that allowed access to the cess and existing controls were inundated at the commencement of the Possession. This was observed by Sydney Metro and the ER.

The water followed the cess drainage lines and erosion and sediment controls were overtopped due to the volume of runoff. It is noted that approximately 26.4mm of rain was received at the site between 07:30 and 09:00 on 20 March 2021 and the site had experienced significant rainfall in preceding days saturating soil storage capacity. Refer to the Bureau of Meteorology (BoM) rainfall records table provided in Appendix G.

The water from the cess area had been flowing over ground from the northern section of the site and entered the site. During this period there was minimal disturbance from HSEJV works and access due to the wet conditions from the Railway Parade access gate was difficult. It was noted that water was flowing out of the corridor at multiple points throughout the possession.

Construction works ceased and all available resources committed to rectification and mitigation actions. Additional controls were immediately implemented on the site including placement of traffic mats on exposed areas, sandbag checks, drainage checks, silt fencing and ballast. Additional materials such as coir logs and stabilised sand were used.

This was identified as Incident 1 (INC-001).

4. Noise and Vibration

The CNVMP includes the Construction Noise and Vibration Monitoring Program. This program requires a 6-monthly report from the results of construction noise and vibration monitoring. The results for the March to August 2021 monitoring period are included in this report.

Below are details regarding noise and vibration modelling and monitoring:

- VMS Australia Pty Ltd were engaged to conduct noise and vibration modelling as well as part of the noise monitoring and all of the vibration monitoring. This was for the period of 20 March to 11 July 2021.
- Renzo Tonin and Associates were engaged on 3 June 2021 to conduct noise and vibration modelling as well as part of the noise monitoring and all of the vibration monitoring. A web-based Construction noise modelling tool (Gatewave) has been used for this project.

4.1. Noise Monitoring

In accordance with CoA C13, the Noise and Vibration Monitoring Program is to be carried out for the duration of construction.

As per Section 7.2 of the CNVMP, noise monitoring is required:

- In response to noise complaints
- If requested by Sydney Metro, the Environmental Representative (ER), Department of Planning and Environment (DPE) or NSW Environment Protection Authority (EPA)
- To augment baseline noise levels, if the noise environment at a receiver is considered to be different from the noise logger locations used for the Environmental Impact Statement (EIS)
- To verify predictions
- As part of a plant noise audit
- If predicted noise levels exceed the trigger levels requiring “M” (Monitoring) in accordance with the additional mitigation measures matrices (AMMM) provided in Section 6.18 of the CNVMP.

Noise monitoring is required if the predicted airborne noise level is above the applicable additional mitigation measures (AMM) trigger level, which is set relative to the noise management level (NML).

Ground borne noise measurements were reviewed and it was agreed with VMS, Sydney Metro and the ER that air borne noise would be dominant from the surface works. Therefore, ground borne noise does not require further assessment in accordance with the Sydney Metro Construction Noise and Vibration Strategy (2016) (CNVS) (refer Section 6.5 of the CNVMP).

Generally, noise monitoring which is triggered by the CNVS AMMM are to be carried out in a location representing the receiver. HSE JV has determined the most appropriate monitoring locations, based on construction activities, noise modelling undertaken and community feedback. Gatewave provides NMLs for monitoring locations to directly compare the measured NMLs against predicted provided in the CNVIS.

Noise monitoring locations are provided in Appendix A. Summary results of attended noise monitoring conducted by HSE JV in the reporting period are provided in Appendix B, demonstrating compliance with project requirements, including the above extract from the management plan.

Noise monitoring equipment details for the Class 1 sound level meter and calibrator, including make, model, serial number, last calibration date and The National Association of Testing Authorities (NATA) testing facility, are provided in Appendix C.

Further details are collected for each field reading, including time, duration, description of works and extraneous noise sources during reading. Samples of Noise Monitoring Record Sheets are provided in Appendix D. Where exceedances have occurred above predicted noise levels, these have been explained/justified with a response. Others are available on request.

4.2. Vibration Monitoring

In accordance with CoA C13, the Noise and Vibration Monitoring Program is to be carried out for the duration of construction.

As per section 8.2 of the CNVMP, vibration monitoring is required:

- In response to vibration complaints;
- If requested by Sydney Metro, the ER, DPE or EPA;
- To confirm baseline vibration levels currently experienced at heritage-listed structures and at any vibration-sensitive equipment;
- To verify predictions, particularly at the commencement of vibration-generating works;
- Where vibration levels are predicted to exceed the vibration screening level, attended vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure, in accordance with the revised environmental mitigation measure (REMM) NVC12;
- If predicted vibration levels exceed the trigger levels requiring “M” (Monitoring) in accordance with the AMMM matrices provided in Section 7.12 of the CNVMP.

Vibration monitoring is required if vibration-generating works are carried out within the safe working distances provided in Section 6.4 in the CNVMP.

Generally, vibration monitoring which is triggered by the CNVS AMMM are to be carried out in a location representing the receiver. HSE JV has determined the most appropriate monitoring locations,

based on construction activities and vibration modelling undertaken. The measurements include a method to derive or directly compare the measured levels with the applicable vibration management level (VML).

During the reporting period, there were numerous locations and work campaigns where vibration monitoring was done. Gatewave modelling predicted cosmetic damage of heritage structure/s within the platforms. Monitoring was conducted by the vibration consultant to verify any exceedences of vibration limits. Summary results demonstrating compliance with vibration criteria are included in Appendix E (HSE JV Vibration Monitoring Register).

Samples of Vibration Monitoring Reports are provided in Appendix F. Where exceedances have occurred above predicted noise levels, these have been explained/justified with a response. Others are available on request.

5. Conclusion

During the 6-month reporting period of 1 March to 30 August 2021, no water was reused onsite and there was one instance of uncontrolled water discharge offsite at Lakemba Station. Refer to Section 3.6 for details of the uncontrolled discharge. Note that no water quality monitoring was conducted.

Noise and vibration monitoring was undertaken for the project with results provided in Appendices C and E. Where exceedances have occurred, these have been explained/justified.

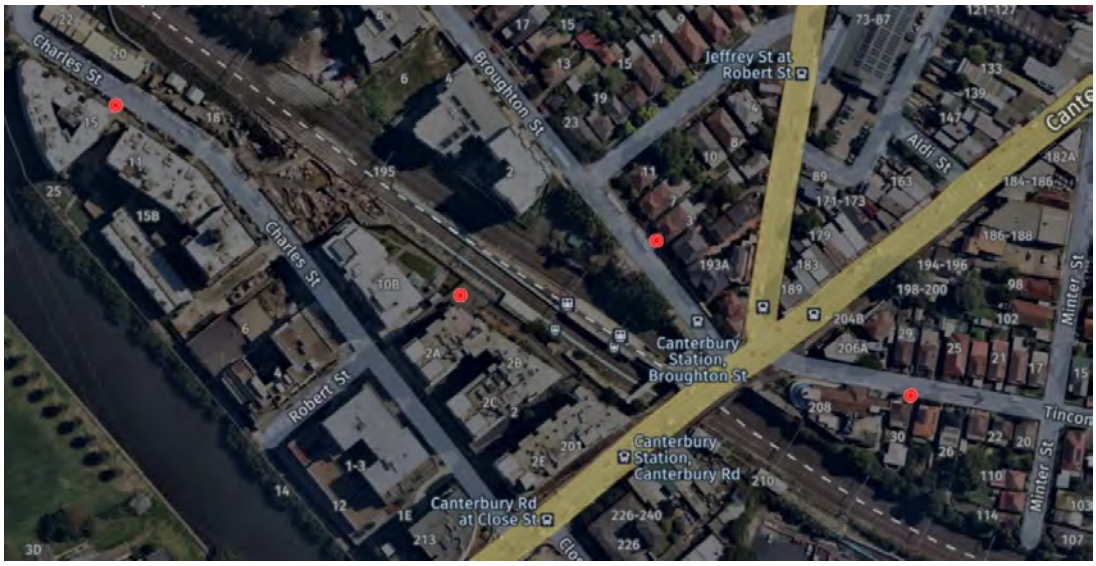
Appendix A: Noise Monitoring Locations

Lakemba:

- 15-19 Croydon Street, Lakemba
- 64 The Boulevarde, Lakemba
- 17 Railway Parade, Lakemba (near Quigg St North)

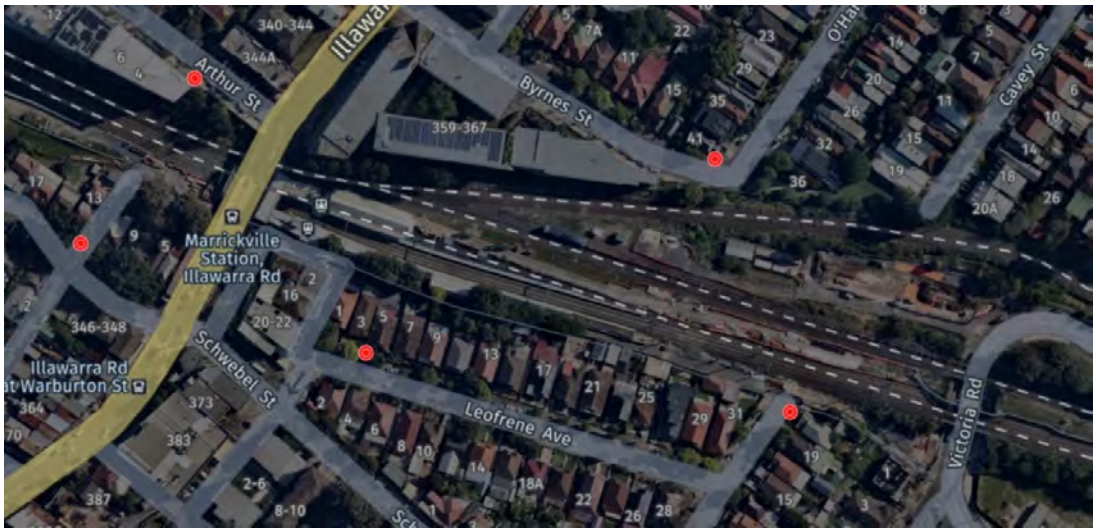
Canterbury:

- 3 Broughton Street, Canterbury
- 30 Tincombe Street, Canterbury
- 2 Charles Street, Canterbury
- 15 Charles Street Canterbury



Marrickville

- 13 Warburton Street, Marrickville
- 5 Leofrene Avenue, Marrickville
- 21 Riverdale Avenue, Marrickville
- 2 Arthur Street, Marrickville
- 41 O'Hara Street, Marrickville



Appendix B: HSEJV Noise Monitoring Register

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
OOHW WE38 Marrickville	Noise	20/03/2021	9:00:00 PM	9:07:00 PM	Marrickville	Generator Station work (piling)	Bridge - East (NCA1) representative of overlooking receivers (359 Illawarra Road)	86	83		N/A	Y	Y - 1938	
	Noise	20/03/2021	9:10:00 PM		Marrickville	Generator Station work (piling)	Bridge - West (NCA1) representative of overlooking receivers (359 Illawarra Road)	86	80		N/A	Y	Y - 2035	
	Noise	20/03/2021	9:15:00 PM	9:22:00 PM	Marrickville	Generator	344 Illawarra Road (NCA1)	86	80		N/A	Y	Y - 2036	
	Vibration	20/03/2021	4:56:00 PM		Marrickville	Bored Piling within 1m of platform edge	On Platform	N/A	N/A		1.8	Y	N	
Monitoring Field Sheet WE41	Noise	13/04/2021	10:16:00 PM	10:31:00 PM	Canterbury		214 Cantebury Rd	72.28	71.6	86.7	N/A	Y		Mostly traffic, peak was a motorbike
	Noise	13/04/2021	9:50:00 PM	10:05:00 PM	Canterbury		193a Cantebury Rd	72.28	73.4	80.3	N/A	Y		Vac truck dominated, while in operation idling between 75-78dB
	Noise	12/04/2021	10:14:00 PM	10:29:00 PM	Canterbury	Road investigations on Canterbury Rd, sucker truck and lighting tower	214 Cantebury Rd	72.28	69.5	87.4	N/A	Y		
	Noise	12/04/2021	12:17:00 AM		Canterbury		193a Cantebury Rd	72.28	78.6	84.2	N/A	N		Vac truck dominated, while in operation idling between 80-81dB in full works, traffic still audible with vat truck. motorbike 84.2,
	Noise	12/04/2021	11:42:00 PM		Canterbury		193a Cantebury Rd	72.28	70.3	81.4	N/A	Y		Peak was hammering on footpath with electric tools
Monitoring Field Sheet WE42	Noise	20/04/2021	1:58:00 AM	2:13:00 AM	Canterbury		1 Charles St	63.9	54	70.1	N/A	Y		
	Noise	21/04/2021	1:06:00 AM	1:21:00 AM	Canterbury		1 Charles St	63.9	45.5	54.4	N/A	Y		no traffic
	Noise	20/04/2021	1:09:00 AM	1:24:00 AM	Marrickville		1 Leofrene Ave	47.49	59.7	85.2	N/A	N		85.2 was a passing train, peak of the works was 49.3
	Noise	21/04/2021	2:01:00 AM	2:16:00 AM	Marrickville		1 Leofrene Ave	47.49	56.5	80.6	N/A	N		80.6 was a passing train, peak of the works was 41.6
	Noise	20/04/2021	2:19:00 AM	2:34:00 AM	Canterbury		11 Charles St	75.15	58.1	73.6	N/A	Y		
	Noise	21/04/2021	12:43:00 AM	12:58:00 AM	Canterbury		11 Charles St	75.15	63.2	79.2	N/A	Y		max working noise 69.4, passing train was 79.2
	Noise	20/04/2021	12:34:00 AM	12:49:00 AM	Lakemba		17 Croydon Rd	76.95	56.22	85.6	N/A	Y		max 85.6 was a loud car
	Noise	20/04/2021	11:50:00 PM	12:05:00 AM	Lakemba		17 Croydon Rd	63.31	54.7	75.5	N/A	Y		site noise was between 56-60, peak was loud car driving past, parked car played music with max 67.4
	Noise	20/04/2021	1:31:00 AM	1:46:00 AM	Marrickville		21 Riverdale Ave	63.31	52.4	73.5	N/A	Y		
	Noise	21/04/2021	1:41:00 AM	1:56:00 AM	Marrickville		21 Riverdale Ave	63.31	58.3	76.8	N/A	Y		max working noise was excavator 76.8
	Noise	20/04/2021	12:11:00 AM		Lakemba		63 the Boulevarde	76.95	65.1	87.1	N/A	Y		peak 87.1 was a car, hand tools peaked at 58 with no traffic
	Noise	20/04/2021	11:27:00 PM	11:42:00 PM	Lakemba		63 the Boulevarde	76.95	65.9	82.9	N/A	Y		works did not exceed 62, max of 82.9 loud noise was a passing car. Low to mid traffic
Vibration Monitoring WE46	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 General activity	On Station building Platform 1	N/A	N/A	N/A	Between 2.8 mm/s and 5.5 mm/s	Y	N	
	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 Nearest point to monitor	On Station building Platform 1	N/A	N/A	N/A	Between 11.4 mm/s and 15.0 mm/s	Y	N	
	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 Localised vibration	On Station building Platform 1	N/A	N/A	N/A	Up to 21.8 mm/s	Y	N	
Monitoring Field Sheet WE48	Noise	29/05/2021	10:08:00 PM	10:23:00 PM	Lakemba		63 the Boulevarde	67.9	79	97.1	N/A	N	Y - 1532	Max loud was a bus driving past, average working noise was 75-79
	Noise	29/05/2021			Lakemba		15 Croydon St	72.5	78	88	N/A	N	Y -1532	max of 88 was a passing car, low traffic and reflects construction noise
	Noise	29/05/2021	11:52:00 PM	12:07:00 AM	Marrickville		17 Leofrene St	65.7	65	83.2	N/A	Y		low traffic with good representation of construction noise, max of 83.2 was a passing truck.
	Noise	29/05/2021	12:15:00 AM	12:30:00 AM	Marrickville		2 Authur St	68.9	73.5	81.2	N/A	N		representitive of construction noise, excluding the max of 81.2 which was a passing car
	Noise	29/05/2021	11:25:00 PM	11:40:00 PM	Marrickville		41 O'Hara St	65.1	66.8	85.9	N/A	Y		refects construction noise acurately, max of 85.9 was a passing car
OOHW WE49 Canterbury	Noise	5/06/2021	11:23:00 PM	11:38:00 PM	Canterbury	High Rail Franna Quacker, Hiab + Generator, Franna, Banging, Train Engine, Train Wagons, Generator, Talking and Shovelling	2A Charles Street	75	63 Overall/ 60 Contribution		N/A	Y		
	Noise	5/06/2021	11:45:00 PM	00:00: (6 June)	Canterbury	Lighting Tower, UHF Radio, Hiab on Track, Franna Quacker, Dumpy Reverse, Dumpy Dumping, Dumpy up Ramp, Franna Quacker, Concrete Pump Quacker, Concrete Pump, Banging, Concrete Pump Idle and Mini Dump Truck	11-15 Charles Street	69	60 Overall/ 69 Contribution		N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	6/06/2021	12:15:00 AM	12:30:00 AM	Canterbury	Concrete Pump, Thrown Tiber, Shovel scraping, Thrown Bucket, Talking, Dumping, LV parking, Spoiling under platform by hand and Hammering.	2 Broughton Street	82 (4 Broughton Street)	52		N/A	Y	Y - 446	
	Noise	6/06/2021	12:39:00 AM	12:54:00 AM	Canterbury	Hammering	30 Tincombe Street	60	57 Overall/ 45 Contribution		N/A	Y	Y - 446	
	Noise	5/06/2021	10:15:00 PM		Marrickville	15T Excavator (West platform), dump truck, lighting tower	41 O'Hara Street	65	50	59	N/A	Y		
	Noise	5/06/2021	10:54:00 PM		Marrickville	15T Excavator (West platform), dump truck, lighting tower	27 Leofrene Ave	64	66	82	N/A	N		The measured LAeq, 15min is within 2dB(A) of the predicted noise level. The measured LAmax is above 65 dB(A). This was triggered by a dump truck pass-by at a distance of approx. 2m from the measurement location. The building facade is approx. 10 m away from the measurement location. LAmax noise levels would be approx. 15 dB lower at the building facade, which would be within 2 dB of LAmax 65 dB.
OOHW WE49 Lakemba and Marrickville	Noise	29/05/2021	12:46:00 PM		Marrickville	Concrete truck, dump truck and 15T excavator	31 Leofrene Ave	63	69	80	N/A	N	Y - 1758	The measured LAeq, 15min is higher than the predicted noise level. The works were very short duration. The exceedance only occurred during concrete delivery. When the exceedance was identified, works were stopped until temporary noise barriers were placed around the concrete delivery area to reduce noise from the works. The measured LAmax is above 65 dB(A) at the measurement location. This was triggered by materials being loaded onto a work truck approx. 2 m from the measurement location. The building facade is approx. 7 m away from the measurement location. LAmax noise levels would be approx. 13 dB lower at the building facade, which would be within 2 dB of LAmax 65 dB.
	Noise	28/05/2021	11:13:00 PM		Marrickville	Concrete truck (with noise blanket), dump trucks with excavator	31 Leofrene Ave	63	64	73	N/A	Y	Y - 1758	
	Noise	28/05/2021	11:29:00 PM		Marrickville	Two 13T excavator with bucket, lighting tower, dump truck	2 Arthur Street	69	60	78	N/A	Y		
	Noise	29/05/2021	2:17:00 AM		Lakemba	Three 13T excavators, piling rig	10-15 Croydon Street	66	62	85	N/A	Y		
	Noise	29/05/2021	9:54:00 AM		Lakemba	Three 13T excavators, piling rig and Wacker plate	10-15 Croydon Street	67	63	82	N/A	Y		
	Noise	28/06/2021	4:15:00 PM	4:40:00 PM	Lakemba	Excavators (2 visible), Saw, Dumper	63 The Boulevarde	64/63	64		N/A	Y		Measurement affected by traffic noise inc. commuter buses (from The Boulevarde)
	Noise	28/06/2021	4:47:00 AM	5:03:00 PM	Lakemba	Excavators (4), Saw, Dumpers (2)	15-17 Croydon Street	68	64		N/A	Y		
	Noise	28/06/2021	10:40:00 PM	10:55:00 PM	Lakemba	Excavator (1 visible), Dumper(2), Generator	63 The Boulevarde	64/63	65		N/A	Y		
	Noise	28/06/2021	11:05:00 PM	11:20:00 PM	Lakemba	Excavator (1 visible), Dumper(2), Generator	15-17 Croydon Street	68	62		N/A	Y		
	Noise	28/06/2021	11:30:00 PM	11:46:00 PM	Lakemba	Dumper, a truck idling outside the corridor (used for transporting small excavators and buckets)	17 Railway Parade	64/70	54		N/A	Y		
	Noise	28/06/2021	2:30:00 PM	2:45:00 PM	Canterbury	Excavators (4), Saw, Dumpers (2)	10 Charles Street	89	67		N/A	Y		
	Noise	28/06/2021	3:22:00 PM	3:40:00 PM	Canterbury	Excavators (2 visible), Saw, Dumper, Multi Crane	4 Broughton Street	86	69		N/A	Y		
	Noise	28/06/2021	9:36:00 PM	9:51:00 PM	Canterbury	Excavators (3), Dumpers (2)	4 Broughton Street	86	62		N/A	Y		
	Noise	28/06/2021	9:58:00 PM	10:13:00 PM	Canterbury	Excavators (3), Dumpers (2)	10 Charles Street	89	67		N/A	Y		
	Noise	29/06/2021	2:45:00 AM	3:00:00 AM	Canterbury	Excavator (2), Hammer (1), Dumper (2)	10 Charles Street	89	65		N/A	Y		
	Noise	29/06/2021	3:05:00 AM	3:20:00 AM	Canterbury	Excavator (2), Hammer (1), Dumper (1)	4 Broughton Street	86	60		N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	28/06/2021	5:42:00 PM	5:58:00 PM	Marrickville	Excavator (1 visible), Saw	41 O'Hara Street	74	57		N/A	Y		
	Noise	28/06/2021	10:56:00 PM	11:11:00 PM	Marrickville	Excavator	2 Arthur street	74	55.6	70.6	N/A	Y	Y - 1757	all noise was construction, noise motintor near building
	Noise	28/06/2021	9:43:00 PM	12:58:00 AM	Marrickville	Excavator	41 O'Hara Street	74	55	71.5	N/A	Y		
	Noise	28/06/2021	10:14:00 PM	10:29:00 PM	Marrickville	non evasive digging, excavator	1 Leofrene Ave	87	73.3	77.7	N/A	Y		
	Noise	28/06/2021	10:35:00 PM	10:50:00 PM	Marrickville	excavator	41 O'Hara Street	74	63.8	81.8	N/A	Y		
	Noise	28/06/2021	11:15:00 PM	11:30:00 PM	Marrickville	excavator	17 Leofrene Avenue	90	56	68.6	N/A	Y		monitoring close to building near front of house
	Noise	28/06/2021	11:37:00 PM	11:52:00 PM	Marrickville	digger, excavator	21 Riverdale Avenue	72	65.1	76.8	N/A	Y		
	Noise	29/06/2021	11:38:00 PM	23:53 PM	Canterbury	Platform 2 - Jack hammer, 2x 13T excavators Platform 1 - Excavators	2 Charles St	83	75.6		N/A	Y	Y, there was 3 complaint from 2 charles st in response to these works. Complaints 433, 434 and 447. Noise levels were compliant with CNVIS.	
	Noise	30/06/2021	9:38:00 PM	9:53:00 PM	Lakemba	Excavators (3), Dumpers (4), Saw	17 Railway Parade	64/70	54		N/A	Y		
	Noise	30/06/2021	10:08:00 PM	10:23:00 PM	Lakemba	Excavators (3), Dumpers (4), Saw	15-17 Croydon Street	68	61		N/A	Y		
	Noise	30/06/2021	10:38:00 PM	10:53:00 PM	Lakemba	Excavators (3), Dumpers (4), Saw	63 The Boulevarde	64	64		N/A	Y		Measurement affected by traffic noise (inc. commuter buses) on The Boulevarde
	Noise	30/06/2021	9:22:00 PM	9:41:00 PM	Canterbury	Excavators (2), Hammers (2), Dumpers (2)	4 Broughton Street	86	67		N/A	Y		
	Noise	30/06/2021	10:15:00 PM	10:30:00 PM	Canterbury	Excavators (2), Hammers (2), Dumpers (2)	2 Charles Street	83	70		N/A	Y		Measurement affected by sewage works on Canterbury Road, not part of station upgrade
	Noise	30/06/2021	10:46:00 PM	11:01:00 PM	Canterbury	Excavators (2), Hammers (2), Dumpers (2)	10 Charles Street	89	67		N/A	Y		Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection.
	Noise	30/06/2021	11:22:00 PM	11:39:00 PM	Canterbury	Excavators (2), Hammers (2), Dumpers (2)	4 Broughton Street	86	65		N/A	Y		
	Noise	1/07/2021	12:23:00 AM	12:38:00 AM	Marrickville	Excavators (3), Dumpers (3)	41 O'Hara Street	63	47		N/A	Y		
	Noise	1/07/2021	1:27:00 AM	1:43:00 AM	Marrickville	Excavators (3), Dumpers (3)	17 Leofrene Avenue	65	68*, however estimated noise level at building façade was 63^^ (see notes)		N/A	Y (see notes)	Y - 428 and 1768.	*Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection. ^^Measurement location is approx 4-5 m from work area, compared to 13-14 m between predicted noise level location and work area. This would result in approx 5 dB reduction in measured noise level if measurement was at predicted noise level location.
	Noise	1/07/2021	2:01:00 AM	2:18:00 AM	Marrickville	Excavators (3), Dumpers (3)	2 Arthur Street (on kerb)	65	58		N/A	Y		Measurement taken on kerb and not on the worst affected façade as no access to this façade. Location partly shielded from works.
	Noise	2/07/2021	2:30:00 AM	2:45:00 AM	Marrickville	3x excavators and 3x dumpers	17 Leofrene Avenue	65	43.1	66.8	N/A	Y	Y - 1759	
	Noise	2/07/2021	2:55:00 AM	3:10:00 AM	Marrickville	3x excavators and 3x dumpers	2 Arthur Street	65	49.8	79.1	N/A	Y	Y - 1759	Corrective Actions •Noise mats around all stationary plant (lighting towers and generators) to be installed correctly to ensure maximum noise attenuation. •Dump trucks to be turned off when being loaded. •Minimise banging of plant. •Mitigation measures to be prioritised as part of subsequent pre-starts (for both day and night shifts). •Confirm predicted noise levels with noise consultant (VMS) and assess the potential use of plant that was not modelled. •Renzo Tonin to undertake further noise monitoring during Saturday evening and night periods, as well as Sunday day period.

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
Shutdown 1 WE52	Noise	3/07/2021	1:10:00 AM	1:25:00 AM	Marrickville	Excavator and dump truck	21 Riverdale Ave	61 (19 Riverdale), 64 at 21 Riverdale	71.3	83.2	N/A	N		Dominant noise was from excavator and dump truck. Corrective Actions: •Noise mats around all stationary plant (lighting towers and generators) to be installed correctly to ensure maximum noise attenuation. •Dump trucks to be turned off when being loaded. •Minimise banging of plant. •Mitigation measures to be prioritised as part of subsequent pre-starts (for both day and night shifts). •Confirm predicted noise levels with noise consultant (VMS) and assess the potential use of plant that was not modelled. •Renzo Tonin to undertake further noise monitoring during Saturday evening and night periods, as well as Sunday day period.
	Noise	3/07/2021	8:40:00 PM	8:55:00 PM	Lakemba	Excavator, Lighting tower	17 Railway Parade	64/70	48	71.1	N/A	Y		
	Noise	3/07/2021	9:05:00 PM	9:20:00 PM	Lakemba	Excavators, Saw, Generator	15-17 Croydon Street	68	68		N/A	Y		
	Noise	3/07/2021	9:25:00 PM	9:40:00 PM	Lakemba	Excavator, Lighting tower, generator	63 The Boulevarde	64/63	63	78.4	N/A	Y		Measurement affected by traffic noise (inc. commuter buses) on The Boulevarde
	Noise	3/07/2021	10:05:00 PM	10:20:00 PM	Lakemba	Excavator, Dumper	15-17 Croydon Street	68	70	96.5	N/A	Within 2dB(A)		
	Noise	3/07/2021	10:58:00 PM	11:13:00 PM	Lakemba	Excavator, Dumper, Lighting tower	17 Railway Parade	64/70	53	71.1	N/A	Y		Traffic is dominate source
	Noise	3/07/2021	11:22:00 PM	11:37:00 PM	Lakemba	Excavators, Saw, Drill	63 The Boulevarde	64/63	63	82.7	N/A	Y		
	Noise	3/07/2021	8:06:00 PM	8:22:00 PM	Canterbury	Excavators (3), Hammer, Dumpers (4), Saw	4 Broughton Street	86	53		N/A	Y	Y - 427	
	Noise	3/07/2021	8:41:00 PM	8:56:00 PM	Canterbury	Excavators (3), Hammer, Dumpers (4), Saw	2 Charles Street	83	60		N/A	Y	Y - 427	
	Noise	3/07/2021	8:58:00 PM	9:13:00 PM	Canterbury	Excavators (3), Hammer, Dumpers (4), Saw	10 Charles Street	89	64		N/A	Y	Y - 427	
	Noise	4/07/2021	12:14:00 AM	12:30:00 AM	Canterbury	Excavators (3), Hammers (2), Dumpers (4), Saw	4 Broughton Street	86	67		N/A	Y		
	Noise	4/07/2021	12:41:00 AM	12:56:00 AM	Canterbury	Excavators (3), Hammers (2), Dumpers (4), Saw	2 Charles Street	83	74		N/A	Y		Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection.
	Noise	4/07/2021	1:01:00 AM	1:16:00 AM	Canterbury	Excavators (3), Hammers (2), Dumpers (4), Saw	10 Charles Street	89	61		N/A	Y		
	Noise	4/07/2021	1:17:00 AM	1:32:00 AM	Canterbury	Excavators (3), Hammers (2), Dumpers (4), Saw	10 Charles Street	89	65		N/A	Y		
	Noise	03/07/202	10:04:00 PM	10:21:00 PM	Marrickville	Excavator (2), Dumper (2), Frontloader, Generator	41 O'Hara Street	63	47		N/A	Y		
	Noise	03/07/202	11:01:00 PM	11:16:00 PM	Marrickville	Excavator (2), Dumper (2), Frontloader, Generator	17 Leofrene Avenue	65	65*, however estimated noise level at building façade was 60^^ (see notes)		N/A	Y		*Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection. ^^Measurement location is approx 4-5 m from work area, compared to 13-14 m between predicted noise level location and work area. This would result in approx 5 dB reduction in measured noise level if measurement was at predicted noise level location.
	Noise	04/07/203	1:55:00 AM	2:10:00 AM	Marrickville	Concrete pump truck (1), Mixer truck (1)	21 Riverdale Avenue	64	71		N/A	N	Y - 1765	predictions based on 13T excavator and dump truck. Confirm predicted noise level.
	Noise	4/07/2021	11:30:00 AM	11:46:00 AM	Lakemba	Excavator (1), Small Excavator (1), Dumper (1), Hand Held Grinding (1)	63 The Boulevarde	63	65		N/A	Y		Measurement affected by traffic noise inc. commuter buses (from The Boulevarde, O'Hara Street, and Illawara Road)
	Noise	4/07/2021	11:51:00 AM	12:06:00 PM	Lakemba	Excavator (1), Small Excavator (2), Dumper (1), Saw	15-17 Croyden Street	68	71		N/A	N		Works stopped and mitigation measures applied, see below for reading with mitigation measures in place
	Noise	4/07/2021	12:45:00 PM	13:00:00 PM	Lakemba	Excavator (1), Small Excavator (2), Dumper (1), Hand Held Grinding (1)	15-17 Croyden Street	68	59		N/A	Y		Measurement after mitigation measures were applied
	Noise	4/07/2021	9:12:00 AM	9:27:00 AM	Canterbury	Excavators (1), Hand Held Hammer, Dumpers (1)	4 Broughton Street	86	60		N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	4/07/2021	9:37:00 AM	9:53:00 AM	Canterbury	Hammer, Pump(pumping water while hammering) (1), Saw (1)	2 Charles Street	83	77		N/A	Y		
	Noise	4/07/2021	9:55:00 AM	10:10:00 AM	Canterbury	Hammer, Pump(pumping water while hammering) (1), Saw (1), Excavators (1), Dumpers (1)	10 Charles Street	89	61		N/A	Y		
	Noise	4/07/2021	10:48:00 AM	11:04:00 AM	Marrickville	Excavator (1), Dumper (1), Hand Held Hammer (1)	41 O'Hara Street	63	60		N/A	Y		Measurement affected by traffic noise inc. commuter buses from O'Hara Street
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 1 (see report)	N/A	N/A		0.6	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 1 (see report)	N/A	N/A		4.3	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		20.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		8.8	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		1.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		1.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 2 (see report)	N/A	N/A		0.6	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 2 (see report)	N/A	N/A		4.3	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		20.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		8.8	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		1.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		1.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 3 (see report)	N/A	N/A		0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 3 (see report)	N/A	N/A		5.2	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		10.8	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		16.1	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		4.3	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		4	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 4 (see report)	N/A	N/A		0.3	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 4 (see report)	N/A	N/A		5.6	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		20.3	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		31.0 (6mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings before VSM suggested switching to smaller excavator
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		4.9	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		17.9	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		8.1	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 5 (see report)	N/A	N/A		0.3	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 5 (see report)	N/A	N/A		7.6	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		19.5	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		31.0 (6mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings before VSM suggested switching to smaller excavator. Site organised Cardno to assess structure on 2 july
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		31.0 (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		31.0 (22.7mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings. Various contact between site and VMS from 5:03am.
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		8.1	N, see notes	N	Work paused for reassessment and restart w
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 6 (see report)	N/A	N/A		0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 6 (see report)	N/A	N/A		31.0 (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		1.3	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		0.9	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		1.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		0.8	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		4.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 7 (see report)	N/A	N/A		0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 7 (see report)	N/A	N/A		19.2	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		10.9	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		31.0 (26.7 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		7.8	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		0.5	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		0.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 8 (see report)	N/A	N/A		0.7	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 8 (see report)	N/A	N/A		6.4	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		0.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		9.2	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		1.8	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		19.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		4.7	Y	N	

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	5/07/2021	12:57:00 PM	1:13:00 PM	Lakemba	Excavator (1), Small Excavator (2), Dumper (1)	63 The Boulevarde	63	66		N/A	N		Measurement affected by traffic noise (inc. commuter buses) on The Boulevarde
	Noise	5/07/2021	11:51:00 AM	12:06:00 PM	Lakemba	Excavator (1), Small Excavator (2), Truck (1 - This was unloading metal mesh with its own crane at the back, hence it was idling) 70	15-17 Croydon Street	68	70		N/A	N, within 2 dB		The truck left after unloading and the LAF noise levels came down to 60 dB(A) which is 8 dB(A) below the predicted level.
	Noise	5/07/2021	9:32:00 PM	9:47:00 PM	Lakemba	Generator, Lighting Tower, Saw, Drill	15-17 Croydon Street	68	66		N/A	Y		
	Noise	5/07/2021	10:13:00 PM	10:28:00 PM	Lakemba	Generator, Lighting Tower, Saw	63 The Boulevarde	64	62		N/A	Y		Measurement affected by traffic noise inc. commuter buses (from The Boulevarde, O'Hara Street, and Illawara Road)
	Noise	5/07/2021	9:58:00 PM	10:13:00 PM	Lakemba	Generator, Lighting Tower, Saw, Excavator 3T	63 The Boulevarde	64	62		N/A	Y		Measurement affected by traffic noise inc. commuter buses (from The Boulevarde, O'Hara Street, and Illawara Road)
	Noise	5/07/2021	10:00:00 AM	10:16:00 AM	Canterbury	Excavators (1), Hand Held Hammer (1), Small Generator	4 Broughton Street	73	66		N/A	Y		
	Noise	5/07/2021	10:21:00 AM	10:37:00 AM	Canterbury	Excavators (1), Hand Held Hammer, Drill and Grinder (1), Small Generator	2 Charles Street	70	66		N/A	Y		
	Noise	5/07/2021	9:46:00 PM	10:01:00 PM	Canterbury	Concrete pump, hand tools	4 Broughton Street	83	56		N/A	Y		
	Noise	5/07/2021	10:10:00 PM	10:25:00 PM	Canterbury	Concrete pump, hand tools, vehicles on site	4 Broughton Street	73	59		N/A	Y		
	Noise	5/07/2021	10:31:00 PM	10:46:00 PM	Canterbury	Concrete pump, hand tools, saw, vehicles	10 Charles Street	76	61		N/A	Y		
	Noise	5/07/2021	11:00:00 AM	11:16:00 AM	Marrickville	Excavators (1 - Not visible but can be heard faintly)Front Loader (1), Hand Held Hammer and Grinder (1)	41 O'Hara Street	74	58		N/A	Y		
	Noise	5/07/2021	11:55:00 AM	12:10:00 PM	Marrickville	Excavators (1), Truck (1 - unloading sand/gravel)	17 Riverdale Ave	61	63		N/A	N, within 2 dB		The excavator was running back and forth to make the surface flat for trucks/dumpers to use
	Noise	5/07/2021	11:25 PM	11:40:00 PM	Marrickville	Excavator 15T, Moxy Truck, Saw	41 O'Hara Street	63	50			Y		
	Noise	6/07/2021	12:06:00 AM	12:28:00 AM	Marrickville	Excavator 15T, Excavator 15T w hammer (≤ 1 min), Moxy Truck, Hand Saw, Hand Drill	17 Leofrene Avenue	65	66 (61)			Y, Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection. Measurement distance corrected to receiver location. Estimated noise level at receiver below predicted level.		
	Noise	6/07/2021	12:252 AM	1:07:00 AM	Marrickville	Loader with forklift attachment, reverse alarm	2 Arthur Street	65	53			Y		
	Noise	6/07/2021	8:39:00 PM	8:54:00 PM	Marrickville	Excavator and hammer	359 Illawara Rd (near bridge)	76	68, with 5dB penalty for high noise 73		N/A	Y		LAF 93dBA measured due to high traffic near monitoring location
	Noise	6/07/2021	9:24:00 PM	9:39:00 PM	Marrickville	Vack truck (mostly picking up generator and power tools) + hammering on platform 0	5 Leofrene Ave	74	67.9, with 5dB penalty for high noise 73		N/A	Y		
	Noise	6/07/2021	9:00:00 PM	9:15:00 PM	Marrickville	Excavator + hammer	41 O'Hara St	72	56.9, with 5dB penalty for high noise 62		N/A	Y		
	Noise	6/07/2021	9:48:00 PM	10:03:00 PM	Marrickville	Excavator (less than 5m away) + truck loading - consider 5 dbA less due to proximity	31 Leofrene Ave	68	71.8, if using 5dB reduction due to proximity 67		N/A	N, but after proximity reduction Y		consider 5 dbA less due to proximity
	Noise	7/07/2021	8:20:00 PM	8:40:00 PM	Marrickville	Excavators (3), Dumpers (1)	41 O'Hara Street	65	52		N/A	Y		
	Noise	7/07/2021	8:50:00 PM	9:06:00 PM	Marrickville	Excavators (3), Hammer, Dumpers (1), Generator	359 Illawarra Road	76	74		N/A	Y, (Includes 5 dB penalty for high impact noise)		Measurement affected by traffic noise (inc. commuter buses), Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection.
	Noise	7/07/2021	9:36:00 PM	9:54:00 PM	Marrickville	Excavators (3), Dumpers (1)	41 O'Hara Street	65	52		N/A	Y		
	Noise	7/07/2021	8:30:00 PM	8:45:00 PM	Marrickville	Vac truck	5 Leofrene Street	74	61		N/A	Y		
	Noise	7/07/2021	8:48:00 PM	9:03:00 PM	Marrickville	Vac truck, forklift, generator	31 Leofrene Street	68	72, however estimated noise level at building façade was 67 (see notes)		N/A	Y		Measurement location is approx 3-4 m from work area, compared to approx 14 m between predicted noise level location and work area. This would result in approx 5 dB reduction in measured noise level if measurement was at predicted noise level location.
	Noise	8/07/2021	12:10:00 AM	12:27:00 AM	Marrickville	Excavators (2), Dumpers (2)	41 O'Hara Street	63	49		N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	8/07/2021	12:32:00 AM	12:47:00 AM	Marrickville	Excavators (3), Hammer, Dumpers (1), Generator	359 Illawarra Road	74	61		N/A	Y		Measurement affected by traffic noise (inc. commuter buses). Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection.
	Noise	8/07/2021	3:39:00 AM	3:54:00 AM	Marrickville	Dump truck, generator	5 Leofrene Street	59	67, however estimated noise level at building façade was 62 (see notes)		N/A	N		Measurement location is approx 3-4 m from work area, compared to approx 14 m between predicted noise level location and work area. This would result in approx 5 dB reduction in measured noise level if measurement was at predicted noise level location.
	Noise	8/07/2021	after mitigation		Marrickville	Generator, saw, hammering	5 Leofrene Street	59	61, however estimated noise level at building façade was 56 (see notes)		N/A	Yes, measurement distance corrected to receiver location		Measurement location is approx 3-4 m from work area, compared to approx 14 m between predicted noise level location and work area. This would result in approx 5 dB reduction in measured noise level if measurement was at predicted noise level location.
	Noise	7/07/2021	10:50:00 PM	11:10:00 PM	Canterbury	Excavator (2), Dumper (1), Concrete agitator, Hand tools	4 Broughton Street	73	55		N/A	Y		
	Noise	7/07/2021	11:25:00 PM	11:40:00 PM	Canterbury	Excavator (2), Dumper (1), Concrete agitator, Hand tools	10 Charles Street	76	57**		N/A	Y		** Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection.
	Noise	8/07/2021	12:10:00 AM	12:25:00 AM	Lakemba	Excavators (2), handheld power tools (drill)	63 The Boulevarde	64	63		N/A	Y		Measurement affected by traffic noise (inc. commuter buses)
	Noise	8/07/2021	12:34:00 AM	12:49:00 AM	Lakemba	Excavator 5T, Excavator 14T	15-17 Croyden Street	64	65		N/A	N, within 2 dB		
	Noise	8/07/2021	9:16:00 PM	9:31:00 PM	Marrickville	5T excavator	31 Leofrene Ave	68	62		N/A	Y		
	Noise	8/07/2021	9:37:00 PM	9:52:00 PM	Marrickville	5T excavator	5 Leofrene Ave	74	65.5		N/A	Y		
	Noise	8/07/2021	9:57:00 PM	10:12:00 PM	Marrickville	5T excavator	359 Illawarra Rd	76	52.6		N/A	Y		
	Noise	9/07/2021	9:38:00 PM	9:54:00 PM	Marrickville	Excavating andspoi moving, excavator, dump truck	31 Leofrene Street	76	68.8	97.8	N/A	Y		
	Noise	9/07/2021	10:06:00 PM	10:21:00 PM	Marrickville	Excavating and installing tiles: hand tools, excavator, lighting tower	5 Leofrene Street	59	67.5	103.4	N/A	N		Most works were around the 60dB, higher noise levels recored with use of hand saw. Measurement was taken close to fence.
	Noise	9/07/2021	11:04:00 PM	11:19:00 PM	Marrickville	Excavating and installing tiles: hand tools, excavator, dump truck	41 O'Hara Street	63	53.6	90	N/A	Y		
	Noise	10/07/2021	1:45:00 AM	2:00:00 AM	Lakemba	installing chairs and lghts, site clean up. Hand tools and Excavators	15-17 Croydon Street	64	63.2	97.6	N/A	Y		
	Noise	10/07/2021	2:10:00 AM	2:24:00 AM	Lakemba	installing chairs and lghts, site clean up. Hand tools, dump truck and Excavators	63 The Boulevarde	64	59.8	78.6	N/A	Y		
Shutdown 1 WE01	Noise	10/07/2021	10:01:00 PM	10:17:00 PM	Marrickville	Excavators, Dumpers, Handtools, Grinder (tiling)	359 Illawarra Road	74	67		N/A	Y		Measurement at 1 m from façade as free field location unavailable. No correction for façade reflection. Measurement affected by traffic noise (inc. commuter buses)
	Noise	10/07/2021	10:31:00 PM	10:50:00 PM	Marrickville	Excavators, Dumpers, Handtools, Grinder (tiling)	41 O'Hara Street	63	54		N/A	Y		
	Noise	10/07/2021	11:14:00 PM	11:29:00 PM	Marrickville	Lighting tower, Excavators, Dumpers	31 Leofrene Avenue	66	59		N/A	Y		Measurement was taken in line with rear façade.- 10m away from lighting tower which was dominating the measurement. Subtract 1dB from measured amount Measurement affected by traffic noise (inc. commuter buses)
	Noise	10/07/2021	10:33:00 PM		Marrickville	Excavator, Handtools, lighting tower, generator, grinder	5 Leofrene Avenue	59	68, however estimated noise level at building façade was 63 (see notes)		N/A	N, Measurement distance corrected to receiver location and Additional noise barriers added around lighting tower		Measurement was taken <1m from fence due to limited space. 3-4m away from work area. Rear façade of residence approx 9m from work area. Measurement affected by traffic noise (inc. commuter buses)
	Noise	10/07/2021	11:17:00 PM	11:32:00 PM	Marrickville	Excavator, Handtools, lighting tower, generator, grinder	5 Leofrene Avenue	59	65, however estimated noise level at building façade was 60 (see notes)		N/A	N, within 1 dB		Measurement was taken <1m from fence due to limited space. 3-4m away from work area. Rear façade of residence approx 9m from work area. Measurement affected by traffic noise (inc. commuter buses)
	Noise	10/07/2021	9:30:00 PM		Canterbury						N/A			Heavy rain, not suitable for noise measurement
	Noise	11/07/2021	12:00:00 AM		Canterbury						N/A			Heavy rain, not suitable for noise measurement
	Noise	11/07/2021	1:25:00 AM	1:40:00 AM	Lakemba	Hand tools, lighting tower	15-17 Croydon Street	64	61		N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	11/07/2021	9:06:00 AM	9:21:00 AM	Marrickville	Tamping, generator	19 Riverdale Ave (in place of 21 Riverdale, as this area was free from interfering surfaces – i.e., cars)	85	61.6	92.3	N/A	Y		LAmax: 92.3dB (noise from phone – not works), Tamping machine idling siting at ~58dB consistently and Freight train at 09:08: ~61dB (screeches at 68dB)
	Noise	11/07/2021	9:29:00 AM	9:44:00 AM	Marrickville	Tamping, generator	19 Riverdale Ave (in place of 21 Riverdale, as this area was free from interfering surfaces – i.e., cars)	85	61.5		N/A	Y		•Tamping machine engine much quieter (53-55dB) •Excavator and dump truck in area – removing lighting towers from rail corridor down to Victoria Rd •Freight train at 09:37 •Traffic controllers talking nearby •Resident hosing down pathway
	Noise	11/07/2021	10:09:00 AM	10:24:00 AM	Marrickville	Tamping, generator and regulator	11 Leofrene Ave (taken from footpath next to corridor – this location enabled most representative sample)	85	72.4		N/A	Y		•Regulator plus small generator 80-82dB max as the cleaner passed the monitor (was ~69dB further up the line) •Just generator: 68-69dB •Workers talking: 70-72dB •Some showers – short lived
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	N/A	N/A		31, (23.2 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		0.9	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		0.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		0.6	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		31, (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		28.8, (21.2 mm/s above	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	N/A	N/A		31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	N/A	N/A		31	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		0.9	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		0.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		0.6	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		31	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		28.8	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	N/A	N/A		31	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	N/A	N/A		3.2	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		8.2 (2.4 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		5.8	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		18 (0.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		0.7	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		31 (19.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	N/A	N/A		2.9	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	N/A	N/A		0.6	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		4.2	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		0.7	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		7.8	y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		1.5	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		31 (13.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	N/A	N/A		11.5 (6.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	N/A	N/A		7.4	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		20.1	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		0.9	y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		31, (21.4 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	N/A	N/A		1.1	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	N/A	N/A		1.9	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		0.3	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		1.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		9.3	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		0.8	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		5.7	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	N/A	N/A		0.3	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	N/A	N/A		31.0 (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		0.3	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		31.0 (26.8 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		0.2	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		0.4	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		0.2	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	N/A	N/A		0.1	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	N/A	N/A		7.9	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		1	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		12.1	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		1.8	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		2	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		10.2	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	N/A	N/A		0.5	Y	N	
WE07 Marrickville	Noise	14/08/2021	8:30:00 PM	8:46:00 PM	Marrickville	excavator, water blaster, generator, minimum work on site whilst measuring	13 Warburton Street	89	56		N/A	Y		
	Noise	14/08/2021	8:02:00 PM	8:17:00 PM	Marrickville	Generator	5 Leofrene Ave	81	78		N/A	Y		
	Noise	14/08/2021	7:39:00 PM	7:53:00 PM	Marrickville	3x excavators (1 with hammer)	41 O'Hara Street	73	51, 56 including penalty for annoyance		N/A	Y		
	Noise	14/08/2021	9:07:00 PM	9:32:00 PM	Marrickville	Audible Generator and water jetting truck (not operating) NB: minimal work on site whilst at this location	2 Arthur Street	84	58	70.2	N/A	Y		
	Noise	14/08/2021	10:00:00 PM	10:15:00 PM	Marrickville	Lighting tower NB: no work on site whilst at this location	5 Leofrene Ave	81	61		N/A	Y		
	Noise	14/08/2021	8:54:00 PM	9:05:00 PM	Marrickville	Audible Generator and water jetting truck (not operating) NB: minimal work on site whilst at this location	21 Riverdale Avenue	92	56		N/A	Y		
	Noise	15/08/2021	10:20:00 AM	10:35:00 AM	Marrickville	1. Metal clanging from Wooley Lane laydown area. Can hear crane and plant working under the bridget. 2. EWP used tonal signal when moved from Warburton St to the site via Woolet Lane. Tonal signal was used when surface is uneven. 3. Two aircrafts flew close to the ground in sequence	13 Warburton Street	89	56.5	75.3	N/A	Y		
	Noise	15/08/2021	12:10:00 PM	12:26:00 PM	Marrickville	1.Metal clanging, saw cutting, plants operations 2. Doors slammed loudly of the house at 5 Leofrene 3. Garden works at the property opposite 4. Motorbike acceleration	5 Leofrene Ave	81	54	60.6	N/A	Y		
	Noise	15/08/2021	11:40:00 AM	11:55:00 AM	Marrickville	1. Works audible (plant operation, materials movements, quaker beeper alarms) 2. Measurement heavily influenced by road traffic	41 O'Hara Street	76	68.8	75	N/A	Y		
	Noise	15/08/2021	11:08:00 AM	11:23:00 AM	Marrickville	1.Screwing bolts into metal structure under the bridge 2.Compressor Working and periodic air release 3. Measurement heavily influenced by road traffic.	2 Arthur Street	84	68.7	76.4	N/A	Y		

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Predicted L_{Aeq}	Measured L_{Aeq}	Max L_{amax}	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Noise	15/08/2021	1:38:00 PM	1:53:00 PM	Marrickville	1. Works audible (small excavator operation time to time, materials movements) 2. Doors slammed loudly of the house at 21 Riverdale 3. Music played loudly at property opposite to the house at 21 Riverdale 4. Birds were loud near the monitor.	21 Riverdale Avenue	103	50.2	67	N/A	Y		

Appendix C: Noise Monitoring Equipment Details

Owner	Instrument	Make	Model	Serial Number	Date of Calibration	Place of Calibration
HSE JV	Sound Level Meter	Svantek	Svan-958	92326	13/10/2020	Acu-Vib Electronics
HSE JV	Sound Level Meter	Svantek	Svan-971	107409	29/04/2021	Acu-Vib Electronics
HSE JV	Sound Level Calibrator	Svantek	SV-33B	109918	04/05/2021	Acu-Vib Electronics
Renzo Tonin & Associates	Sound Level Meter	NTi	XL2	A2A-16217-E0	26/09/2019	NATacoustic
Renzo Tonin & Associates	Sound Level Meter	NTi	XL2	A2A-12693-E0	16/04/2021	NATacoustic
Renzo Tonin & Associates	Sound Level Meter	NTi	XL2	A2A-05213-E0	12/03/2020	NATacoustic
Renzo Tonin & Associates	Sound Level Meter	NTi	XL2	A2A-10578-E0	03/03/2021	NATacoustic
Renzo Tonin & Associates	Sound Level Calibrator	Bruel & Kjaer	Type 4231	3009707	02/12/2020	NATacoustic
Renzo Tonin & Associates	Sound Level Calibrator	Bruel & Kjaer	Type 4231	2619453	09/03/2021	NATacoustic
Renzo Tonin & Associates	Sound Level Calibrator	Bruel & Kjaer	Type 4231	2677710	03/12/2020	NATacoustic
VMS	Sound Level Meter	Bruel & Kjaer	Type 2250	3023954	Not provided	Not provided
VMS	Sound Level Calibrator	Bruel & Kjaer	Type 4231	2574227	Not provided	Not provided

Appendix D: Noise Monitoring Record Sheet Samples

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	~~Excavation~~ Station Upgrade	
CONDUCTED BY:	Ivy Ou	LOCATION OF WORKS:	Marrickville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C)	RH (%) / Pressure (hPa)
	8km/h		10	1032.5mb
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / ~~SLOW~~	FREQUENCY WEIGHTING:		A / C / ~~FLAT~~
FIELD CALIBRATION CHECK:	114	POST CALIBRATION CHECK:		

MONITORING DETAILS				
LOCATION No:	1	ADDRESS:	41 O'Hara St	
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):			MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	Excavator		DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:	7m		MEASUREMENT NEAR BUILDING?	Y / (N)
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):	(Y) N		IN RESPONSE TO COMPLAINT?	Y / (N)
START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	RBL / NML (dBA)	PREDICTED LEVEL (dBA)
21:43	21:58	E	45 / 50	74
MEASUREMENT RESULTS (15 MIN PERIOD) from activity				
L_{aeq} 55	L_{max} 71.5	L_{min} 46.9	L_{A10}	L_{A90}
LAE 84.6	Ltm3 57.5	Ltm5 58	L01 65.2	

MONITORING OBSERVATIONS:

XL2 file number:				
Time	Source noise	Extraneous noise	LAF	Other comments
XX:01 ~~66.7~~		Train Passing	66.7	
XX:02				
XX:03				low activity at
XX:04				construction site
XX:05		Car driving Pass	58.4	
XX:06				
XX:07				
XX:08				
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				
Further actions required to reduce noise?				

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	Station Upgrade	
CONDUCTED BY:	Ivy Ou	LOCATION OF WORKS:	Marrickville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C)	RH (%) / Pressure (hPa)
8	8Km/h		10	1032.5mb
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / SLOW	FREQUENCY WEIGHTING:		A / C / FLAT
FIELD CALIBRATION CHECK:	114.2	POST CALIBRATION CHECK:		

MONITORING DETAILS			
LOCATION No:	2	ADDRESS:	~~12 Station St~~ 1 Leofrane St
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):	non evasive digging	MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	excavator	DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:		MEASUREMENT NEAR BUILDING?	Y (N)
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):	(Y) N	IN RESPONSE TO COMPLAINT?	Y (N)

START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	RBL / NML (dBA)	PREDICTED LEVEL (dBA)
22:14	22:29	N	45	~~40~~ 37

MEASUREMENT RESULTS (15 MIN PERIOD) from activity

L_{aeq}	L_{max}	L_{min}	L_{A10}	L_{A90}
73.3	77.7	60.5		
LAE 102.8	L+m3	L+m5	Lo1 76.9	

MONITORING OBSERVATIONS:

XL2 file number:

Time	Source noise	Extraneous noise	LAF	Other comments
XX:01			76.4	Truck left running begin
XX:02				duration of noise
XX:03				monitoring
XX:04			73.4	Truck turned off
XX:05				
XX:06			74.7	Truck turned back on
XX:07				
XX:08				
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				
Further actions required to reduce noise?				

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	Station Upgrade	
CONDUCTED BY:	Ivy Ou	LOCATION OF WORKS:	Marrickville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C)	RH (%) / Pressure (hPa)
	8km/hr		10	1032.5mb
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / ~~SLOW~~	FREQUENCY WEIGHTING:		A / C / ~~FLAT~~
FIELD CALIBRATION CHECK:	114	POST CALIBRATION CHECK:		

MONITORING DETAILS				
LOCATION No:	1	ADDRESS:	41 O'Hara St	
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):			MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	Excavator		DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:			MEASUREMENT NEAR BUILDING?	Y (N)
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):		(Y) / N	IN RESPONSE TO COMPLAINT?	Y (N)
START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	NML (dBA)	PREDICTED LEVEL (dBA)
22:35	22:50	N	40/45	74

MEASUREMENT RESULTS (15 MIN PERIOD) from activity				
L_{aeq} 63.8	L_{max} 81.8	L_{min} 50	L_{A10}	L_{A90}
LAE 93.4	Lmax 67	Lmin 67.9	L01 78.2	

MONITORING OBSERVATIONS:

XL2 file number:

Time	Source noise	Extraneous noise	LAF	Other comments
XX:01				All noise from
XX:02				construction
XX:03				
XX:04				
XX:05				
XX:06				
XX:07				
XX:08		Freight Train	80	Train passing by
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				
Further actions required to reduce noise?				

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	Station Upgrade	
CONDUCTED BY:	Ivy Ou	LOCATION OF WORKS:	Marrickville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C) 10	RH (%) / Pressure (hPa) 1052.5mb
	8/km/h			
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / SLOW	FREQUENCY WEIGHTING:		A / C / FLAT
FIELD CALIBRATION CHECK:	114	POST CALIBRATION CHECK:		

MONITORING DETAILS				
LOCATION No:	4	ADDRESS:	17 Leofrene St	
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):			MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	Excavator		DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:	1m		MEASUREMENT NEAR BUILDING?	(Y) N
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):	(Y) N		IN RESPONSE TO COMPLAINT?	Y (N)
START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	RBL / NML (dBA)	PREDICTED LEVEL (dBA)
23:15	23:30	N	40/45	90
MEASUREMENT RESULTS (15 MIN PERIOD) from activity				
L_{aeq} 56	L_{max} 78.6	L_{min} 51	L_{A10}	L_{A90}
LAG 85.5	Lms 57.7	Lms 58.2	201 60.7	

MONITORING OBSERVATIONS:

XL2 file number:				
Time	Source noise	Extraneous noise	LAF	Other comments
XX:01				
XX:02				Monitoring Taken
XX:03				from front of house
XX:04				sidewalk
XX:05				
XX:06				
XX:07				
XX:08				
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				
Further actions required to reduce noise?				

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	Station upgrade	
CONDUCTED BY:	Iyou	LOCATION OF WORKS:	Manicaville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C)	RH (%) / Pressure (hPa)
	8KM/h		16	1032.5mb
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / ~~SLOW~~	FREQUENCY WEIGHTING:		A / C / ~~FLAT~~
FIELD CALIBRATION CHECK:		POST CALIBRATION CHECK:		

MONITORING DETAILS				
LOCATION No:	45	ADDRESS:	21 Riverdale Ave	
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):			MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	Digger, Excavator		DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:			MEASUREMENT NEAR BUILDING?	Y / (N)
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):		(Y) / N	IN RESPONSE TO COMPLAINT?	Y / (N)

START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	NML (dBA)	PREDICTED LEVEL (dBA)
23:37	23:52	N		72

MEASUREMENT RESULTS (15 MIN PERIOD) from activity				
L_{aeq} 65.1	L_{max} 76.8	L_{min} 59.5	L_{A10}	L_{A90}
LAE 94.1	Lm3 66.7	Lm5 67.2	L01 71.7	

MONITORING OBSERVATIONS:

XL2 file number:	

Time	Source noise	Extraneous noise	LAF	Other comments
XX:01				
XX:02				Slight noise from
XX:03				engine of light
XX:04				lamp.
XX:05				
XX:06				
XX:07				
XX:08				
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				

Further actions required to reduce noise?	

Noise Monitoring Record Sheet

DATE:	28/6/2021	MAIN ACTIVITY	Station Upgrade	
CONDUCTED BY:	Ivy Ou	LOCATION OF WORKS:	Marrickville	
METEROLOGICAL CONDITIONS:				
Cloud cover (x/8)	Wind speed (m/s) / Wind direction	Precipitation (mm)	Temp (°C)	RH (%) / Pressure (hPa)
	8km/h		10	1032.5mb
INSTRUMENTATION				
SLM MAKE / MODEL:	SVAN971	SERIAL NUMBER:	107409	
TIME WEIGHTING:	FAST / ~~SLOW~~	FREQUENCY WEIGHTING:		A / ~~C / FLAT~~
FIELD CALIBRATION CHECK:	114.1	POST CALIBRATION CHECK:		

MONITORING DETAILS				
LOCATION No:	3	ADDRESS:	2 Arthur St	
ACTIVITIES ON SITE (if applicable, Gatewave scenario ID):			MITIGATION MEASURES INSTALLED:	
PLANT OPERATION:	Excavator		DISTANCE FROM PLANT (m):	
DISTANCE FROM OBSTACLES OR REFLECTING SURFACES:	2m from fence		MEASUREMENT NEAR BUILDING?	Y / N
PHOTOGRAPH TAKEN (MONITORING LOC, WORKS and CLOSEST RECEIVERS):		Y / N	IN RESPONSE TO COMPLAINT?	Y / N
START TIME	END TIME	MEASUREMENT PERIOD (DS, DO, E, N)	NML (dBA)	PREDICTED LEVEL (dBA)
22:56	23:11	N		74
MEASUREMENT RESULTS (15 MIN PERIOD) from activity				
L_{aeq} 59.6	L_{max} 70.6	L_{min} 52.6	L_{A10}	L_{A90}
LAE 85.2	Lmx 87.3	Lmc 88	L01 61.3	
MONITORING OBSERVATIONS:				
XL2 file number:				

Time	Source noise	Extraneous noise	LAF	Other comments
XX:01				All noise from
XX:02				construction site
XX:03				
XX:04				
XX:05				
XX:06				
XX:07				
XX:08				
XX:09				
XX:10				
XX:11				
XX:12				
XX:13				
XX:14				
XX:15				
Further actions required to reduce noise?				

Appendix E: HSE JV Vibration Monitoring Register

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
OOHW WE38 Marrickville	Vibration	20/03/2021	4:56:00 PM		Marrickville	Bored Piling within 1m of platform edge	On Platform	1.8	Y	N	
Vibration Monitoring WE46	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 General activity	On Station building Platform 1	Between 2.8 mm/s and 5.5 mm/s	Y	N	
	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 Nearest point to monitor	On Station building Platform 1	Between 11.4 mm/s and 15.0 mm/s	Y	N	
	Vibration	20/05/2021	10:20:00 AM	11:02:00 AM	Marrickville	Jackhammer x2 Localised vibration	On Station building Platform 1	Up to 21.8 mm/s	Y	N	
Shutdown 1 WE52	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 1 (see report)	0.6	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 1 (see report)	4.3	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	20.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	8.8	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	1.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	1.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 2 (see report)	0.6	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 2 (see report)	4.3	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	20.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	8.8	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	1.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	1.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 3 (see report)	0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 3 (see report)	5.2	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	10.8	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	16.1	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	2.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	4.3	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	4	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 4 (see report)	0.3	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 4 (see report)	5.6	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	20.3	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	31.0 (6mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings before VSM suggested switching to smaller excavator
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	4.9	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	17.9	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	8.1	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 5 (see report)	0.3	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 5 (see report)	7.6	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	19.5	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	31.0 (6mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings before VSM suggested switching to smaller excavator. Site organised Cardno to assess structure on 2 july
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	31.0 (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	31.0 (22.7mm/s above)	N, see notes	N	Work paused for reassessment and restart with different settings. Various contact between site and VMS from 5:03am.
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	8.1	N, see notes	N	Work paused for reassessment and restart with
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 6 (see report)	0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 6 (see report)	31.0 (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	1.3	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	0.9	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	1.7	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	0.8	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	4.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 7 (see report)	0.4	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 7 (see report)	19.2	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	10.9	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	31.0 (26.7 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	7.8	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	0.5	Y	N	

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	0.2	Y	N	
	Vibration	28/06/2021	Daily for duration of works - unattended		Canterbury	Demolition	Location 8 (see report)	0.7	Y	N	
	Vibration	29/06/2021	Daily for duration of works - unattended		Canterbury	Demolition / Excavation	Location 8 (see report)	6.4	Y	N	
	Vibration	30/06/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	0.4	Y	N	
	Vibration	1/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	9.2	Y	N	
	Vibration	2/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	1.8	Y	N	
	Vibration	3/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	19.1	Y	N	
	Vibration	4/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	4.7	Y	N	
Shutdown 1 WE01	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 1 (see report)	31, (23.2 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	0.9	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	0.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	0.6	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	31, (6mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	28.8, (21.2 mm/s above	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 1 (see report)	31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 2 (see report)	31	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	0.9	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	0.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	0.6	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	31	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	28.8	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 2 (see report)	31	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 3 (see report)	3.2	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	8.2 (2.4 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	5.8	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	18 (0.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	0.7	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	31 (19.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 3 (see report)	2.9	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 4 (see report)	0.6	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	4.2	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	0.7	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	7.8	y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	1.5	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	31 (13.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 4 (see report)	11.5 (6.3 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 5 (see report)	7.4	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	20.1	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	0.9	y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	31, (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	31, (21.4 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 5 (see report)	1.1	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 6 (see report)	1.9	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	0.3	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	1.2	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	9.3	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	0.8	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	5.7	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 6 (see report)	0.3	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 7 (see report)	31.0 (6 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	0.3	Y	N	

Reporting Period	Type (Noise or Vibration)	Date	Time Started	Time Finished	Station	Description of Works	Monitorining Address	Measured Vibration PPV (mm/s)	Below Predicted Level Y/N	Was monitoring in response to a complaint?	Notes
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	31.0 (26.8 mm/s above)	Isolated local events likely to be a knock of the transducer or impact right next to it.	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	0.2	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	0.4	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	0.2	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 7 (see report)	0.1	Y	N	
	Vibration	5/07/2021	Daily for duration of works - unattended		Canterbury	Excavation	Location 8 (see report)	7.9	Y	N	
	Vibration	6/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	1	Y	N	
	Vibration	7/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	12.1	Y	N	
	Vibration	8/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	1.8	Y	N	
	Vibration	9/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	2	Y	N	
	Vibration	10/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	10.2	Y	N	
	Vibration	11/07/2021	Daily for duration of works - unattended		Canterbury	Construction	Location 8 (see report)	0.5	Y	N	

Appendix F: Vibration Monitoring Report Sample

20 May 2021

21048 SMSW Canterbury WK46 Monitoring 20210520.docx

Smart Infrastructure Consulting
Level 1,1301 Pacific Highway
TURRAMURRA NSW 2074

Attention: **Mr Bradley Cole**

Dear Brad

Sydney Metro South West Station Upgrade - Vibration Monitoring
Marrickville Station
Wednesday 19 May and 20 May 2021 (WK46)

1 Introduction

VMS Australia Pty Ltd (VMS) was engaged by Smart Infrastructure Consulting to conduct vibration monitoring in relation to the construction works being undertaken at the Marrickville Station (the Project Site). This report presents the vibration monitoring results for the Standard Hours works conducted on Wednesday 19 May and 20 May 2021 (WK46).

Works are being undertaken via a Joint Venture between Haslin Constructions Pty Limited and Stephen Edwards Constructions Pty Ltd (HSE JV).

In undertaking these measurements, reference is made to:

- The Sydney Metro Marrickville, Canterbury and Lakemba Station Upgrades Construction Noise and Vibration Impact Statement (CNVIS, Rev 1 (Draft), dated 17 February 2020).
- Southwest Metro – Marrickville, Canterbury and Lakemba Station Upgrades Noise and Vibration Management Plan (CNVMP, Rev 3, dated 25 January 2021).

2 Monitoring Methodology

Vibration impacts were monitored and assessed as described below. Vibration monitoring was undertaken by VMS senior consultant, Ms Monica Saralertsophon (MAAS) who is suitably qualified in accordance with the NVMP.

Vibration measurements were specifically to consider the impacts to heritage structures and so were undertaken in accordance with the procedures documented in *AS 2107.2 2006 Explosives – Storage and Use* and *DIN 4150:Part 3-1999 Structural Vibration - Effects of Vibration on Structures*.

All vibration monitoring was recorded over contiguous 1 second sample intervals. For every sample, the data was processed and stored in memory. The minimum vibration metrics were stored in memory and where relevant the following vibration levels were reported: Vibration Dose Value VDV, RMS, Peak Particle Velocity (PPV) and Frequency (Hz). **Table 1** presents details of the vibration monitoring instrumentation used during the survey.

Table 1 Vibration Monitoring Equipment

Manufacturer	Type	Serial Number	Survey Use
Technical Instruments	TiVL	TiL0256	Attended Survey

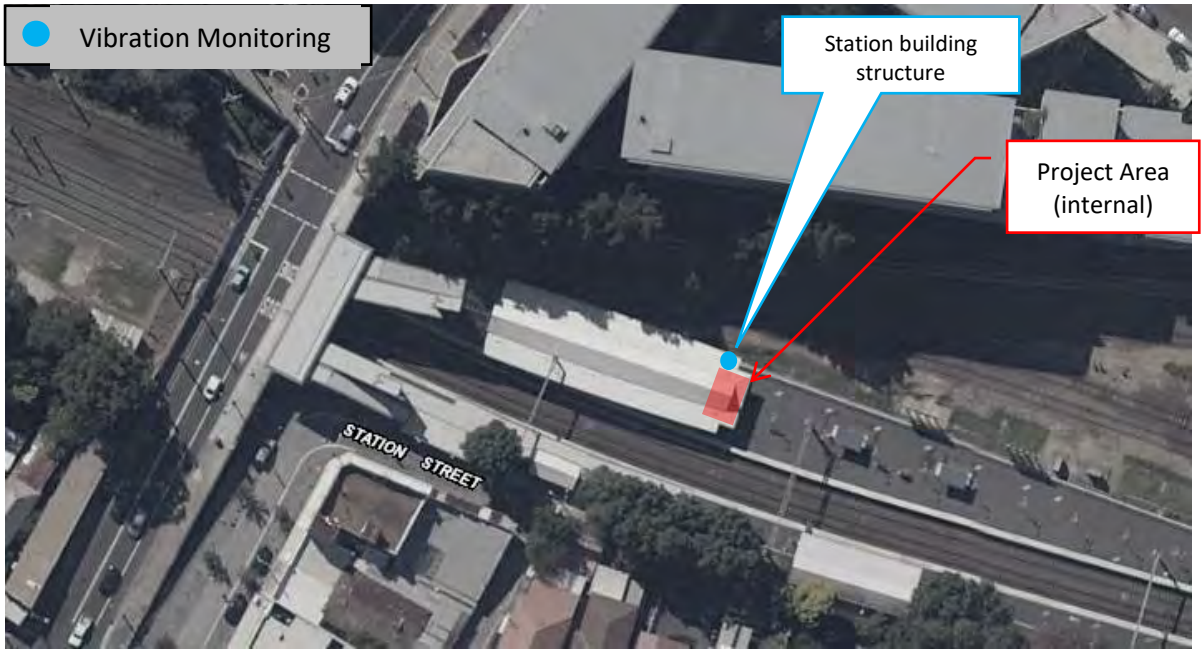
2.1 Monitoring Locations

The attended monitoring location is listed in **Table 2** and shown in **Figure 1**. Following a review of works whilst on-site, the monitoring location was selected as being representative of the vibration emissions levels received at the potentially most affected vibration structure.

Table 2 Vibration Monitoring Location

Task	Period	Receiver Type	Location	Monitoring Type
Vibration Monitoring	Daytime	Infrastructure (Heritage)	Station Building (Platform 1)	Operator-Attended

Figure 1 Attended Vibration Monitoring Location



2.2 Construction Vibration Management Levels

Site specific vibration management levels (VMLs) were nominated with consideration of the CNVMP to ensure that vibration induced damage does not occur to structures close to the Project Site with a focus on heritage items as requested by the HSE JV (refer **Table 3**).

Table 3 Nominated Site Vibration Management Levels

Building Type	Building Condition	Site Specific Vibration Management Levels	
		Operator Warning Level	Operator Halt Level
Heritage Structures[1]	Structurally Sound	6 mm/s PPV	7.5 mm/s PPV[2]
	Structurally Unsound	2 mm/s PPV	2.5 mm/s PPV

Note 1: All heritage structures on or near the platforms have been confirmed as structurally sound by the HSE JV.

Note 2: Conservative approach as this level is considered a screening level in the first instance.

Australian Standard AS2187.2-2006 provides vibration criteria for various structure types, below which damage has not been credibly demonstrated. Based on this information, relevant frequency dependant site vibration damage control criteria have been identified and are reproduced in **Table 4** and considered applicable for the structurally sound heritage structures on and near the platform. In the first instance continuous vibration has been conservatively assumed.

Table 4 Vibration Damage Control Criteria

Building Type	Minimal Risk of Structural Damage Frequency Dependant Vibration Criteria
Structurally Sound Heritage Structures	**AS2187.2-2006 - Continuous** 7.5 mm/s to 10 mm/s (4 Hz to 15 Hz) 10 mm/s to 25 mm/s (15 Hz to 40 Hz and above)

3 Site Observation and Monitoring Results

A preliminary measurement and assessments of the internal demolition works within the Station Building (Heritage Building) was carried out on Wednesday 19 May 2021. During the survey, the following works were observed:

- Demolition works:
    - Removal of fittings and lose furniture;
    - Jackhammering (HILTI TE1000-AV6 x 2 units) were employed to break up the bathroom floor (tiles and bedding); and
    - Site clearing.

The vibration levels were measured during the operation of jackhammer and found that the measured levels were between 4.0 mm/s (13 Hz) and 10.5 mm/s (13 Hz). This is in exceedance of the nominated Building Damage Vibration Goals (Section 5.7, CNVMP) for Heritage building (Structurally Sound) of 7.5 mm/s.

Subsequently, all work was stopped at approximately 9:19 am pending clarification on directions from the project team.

The project heritage consultant (Ms Pamela Kottaras) was notified immediately and requested to attend the site. Ms Kottaras was advised of the vibration levels measured as part of the demolition works. Further discussion between Pamela and the project Environment Manager (Mr Bradley Cole) concluded that a more detailed assessment of the structure was required to determine the appropriate vibration limits specific to the structure.

The specific extract from the CNVMP Section 8.2.3 which applies upon exceedance of the nominated Building Damage Vibration Goals are presented below:

> *The Project REMMs specifically require:*
>
> - *NVC3 – Where vibration levels are predicted to exceed the vibration screening level, a more detailed assessment of the structure would be carried out to determine the appropriate vibration limits for that structure; and*
> - *NVC4 – For heritage items where vibration screening levels are predicted to be exceeded, the more detailed assessment would include condition assessment and specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.*

During this time, alternative construction methodologies were also discussed between VMS and the contractor.

Further review of the condition reports (see list below) carried out by the project team resulted in adjustment to the vibration screening level from 7.5mm/s to 25 mm/s.

- *Southwest Metro Design Services (SMDS) Sydney Metro* - Structures Marrickville to Punchbowl Station Concourse & Building Condition Report, prepared by Metron T2M, dated 11 June 2019.
- *South West Metro Upgrade Package 4 - Marrickville Station Condition Assessment*, prepared by Cardno, dated 15 March 2021 (report ref 80021068).

3.1 Vibration Monitoring Results

Upon receipt of the approval to continue from the project team, demolition works resumed on Thursday 20 May 2021. The results of the attended vibration monitoring surveys are presented in **Table 5**.

Table 5 Attended Vibration Monitoring Results Thursday 20 May 2021

Location	Date/Start Time	Plant	Description of Vibration activity	Measured PPV (mm/s)	Assessment
On Station Building (Platform 1)	20/5/2021 10:20 am – 11:02 am	Jackhammer x 2	General activity	Between 2.8 mm/s and 5.5 mm/s	**Pass**
			Nearest point to the monitor	Between 11.4 mm/s and 15.0 mm/s	**Pass**
			Localised vibration (isolated events, non-modal)	Up to 21.8 mm/s	**Pass**

Note 1: "Pass" indicates that the measured vibration is compliant with the VMLs (refer to **Table 3**) or below the vibration damage criteria (refer to **Table 4**).

The measured vibration levels during general activity were noted to be semi-continuous whereby the activity occurred most of the time during the observation and can be considered as typical.

The measured vibration levels at the nearest point to the vibration monitor represent a worst-case operation where the jackhammer was working on the footing of the wall where the accelerometer is attached. This vibration levels can be experienced by the structure occasionally.

The measured high vibration level events were observed to be isolated and does not a regular occurrence. The vibration levels are likely due to direct impact immediately on the wall behind the accelerometer.

The measured vibration emissions from the Project were within the adjusted vibration goals (25 mm/s).

4 Discussion and Conclusion

VMS have carried out vibration monitoring in accordance with the *Noise and Vibration Monitoring Plan* (NVMP) for the demolition works undertaken as part of the Marrickville Station (the Project) on Wednesday 19 May and 20 May 2021 (WK46).

The vibration levels generated by the works were below the adjusted screening level criterion for site specific heritage structure.

It was agreed between all parties (VMS, the contractor, and the project team) that all feasible and reasonable measures are to be adopted in order to minimise the vibration impacts as much as practicable. This includes vibration monitoring and modifying work technique (e.g. angle of jackhammer chisel, etc.).

Additionally, VMS recommends that a post construction condition survey is carried out to capture condition of the structure.

I trust the above meets your current requirements. If you have any questions or wish to discuss, please contact us on 1800 867 000.

Regards,

MONICA SARALERTSOPHON
Senior Consultant - Acoustics & Vibration

Appendix G: Daily Rainfall Data and Inspections

Weekly Site Environmental & Sustainability Inspection

SEQ-CL-005 (1)

To be completed by Site Manager, Environmental/ Sustainability Manager or delegated person at least once a week. Possible more than one inspection per week may be required for high-risk sites.

Project / Site Inspected: Marrickville

Inspection undertaken by: Elena Ivanova (HSE Enviro advisor), Brett McLenna (ER)

Date: 25/08/2021 Time: 10:30-11:30am Signature: EIvanova

Complete Relevant sections only:

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
23.	General / Community (Applicable to works site and compound)				
**	Have the previous week's actions been addressed and actioned?	☒	☐	☐	
23a	Is the site clean and free of waste and debris?	☒	☐	☐	Site well maintained
23b	Is the site secured appropriately (e.g. fencing) with appropriate signage?	☒	☐	☐	ATF fencing in place
23c	Has appropriate provision been made for passage of pedestrians around the work site (including footpath protection)?	☒	☐	☐	Footpath closed and signage in place
23d	Does the equipment on site appear to be in appropriate working order (noise, exhaust fumes, leakage)?	☒	☐	☐	
23e	Are construction vehicles parked in designated areas?	☒	☐	☐	
23f	Have parking changes been communicated?	☐	☐	☒	No changes to parking.
23g	Are all environmental no-go zones well delineated and protected?	☒	☐	☐	Fencing and access gates in place.
23h	Are hoardings clean of graffiti and bill posters?	☒	☐	☐	No graffiti sighted
23i	Is the community signage up to date?	☒	☐	☐	
23j	Is the shade cloth up with legible contact details?	☒	☐	☐	
23k	Has the latest community notification been sent out on time?	☒	☐	☐	August Notification issued as planned
23l	Has the next OOHW been communicated to relevant sensitive receivers?	☒	☐	☐	OOHW planning have been communicated to the monthly notification.
23m	Are night works planned to ensure light spill is minimised? Is this reflected in ECM and/or OOHW application?	☒	☐	☐	Night works on WE 07
23n	Is site lighting directed away from sensitive receivers and direct views minimised?	☒	☐	☐	Night works on WE 07
24.	Flora and Fauna (Applicable to works site and compound)				
24a	Are exclusion areas appropriately marked and isolated (e.g. heritage sites, flora/ fauna, environment sensitive areas, wetlands, water courses)?	☒	☐	☐	
24b	Do the trees have adequate protection around the TPZ (bunting, fencing or other delineating signs)? (No storage allowed under the TPZ)	☐	☒	☐	Tree protection zone to be established in accordance with the arborist recommendations at Wooley Ln.
24c	Has landscaping/offset commenced on site to stabilise exposed areas? Strive to minimise clearance of vegetation	☒	☐	☐	Landscaping not yet required. Vegetation clearing kept to a minimum.
24d	Are the works area free of weeds? Are the controls adequate to prevent weeds?	☒	☐	☐	

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
24e	Is there any tree trimming or vegetation removal planned? Are the required Pre-Clearing Checklist, Permit to Clear and approvals in place as per Flora and Fauna Management Procedure (SEQ-PR-035)?	☐	☐	☒	No trimming or removal planned.
24f	Local Wires numbers on emergency plan?	☒	☐	☐	
25.	Surface Water Quality/Soil Conservation (Applicable to works site and compound)				
25a	Sediment transport to stormwater drains and nearby water courses controlled by silt traps/ barriers? (check adequacy of controls after rain event)	☒	☐	☐	Drains protected
25b	Silt traps/barriers effective and maintained? Are they compostable and/or reusable?	☒	☐	☐	
25c	Are erosion and sediment controls in place in accordance with ECMS and/or ESCPs?	☒	☐	☐	Erosion and sediment controls were in place and good conditions. No discharged off site observed after heavy rain.
25d	Is water discharged in accordance with conditions of approval / EPL? (Water Discharge Permit may be required) No construction water can leave site premises without being tested.	☐	☐	☒	No water being discharged.
25e	No harmful discharges to nearby water course?	☒	☐	☐	No discharges off site
25f	Any Dewatering of trenches, water storage, or dams, discharged into local water ways? If so has SEQ-CL-44 been used? Or local authority's approvals been met?	☐	☐	☒	As above
25g	Where necessary, wheel wash facility in place and effective?	☐	☐	☒	Not used on this site
25h	Stock piles adequately segregated & protected with sediment controls (refer to CEMP)	☒	☐	☐	
25i	Vegetation maintained where possible	☒	☐	☐	
25j	Public Roads Clean with Entry/exit points stabilised / wheel cleaning available? Haul road integrity maintained?	☒	☐	☐	Roads were maintained.
25k	Is the Erosion and Sediment Control Plan being implemented and effective?	☒	☐	☐	ESCP in place and controls generally implemented
26.	Waste & Spoil (Applicable to works site and compound)				
26a	Have adequate bins for waste and reusable/recyclable materials been provided?	☒	☐	☐	In compound area
26b	Concrete Waste Area provided and disposed of at regular intervals	☒	☐	☐	No concrete waste sighted on site during inspection
26c	No waste stored or left in unauthorised areas?	☒	☐	☐	Site is tidy
26d	Recyclable and reusable waste are segregated and stored in separate bins?	☒	☐	☐	
26e	Waste dockets kept for records?	☒	☐	☐	
26f	Waste removed from site at required intervals and disposed of in authorised manner?	☒	☐	☐	Waste adequately collected.
26g	Is topsoil correctly segregated & stored for reuse or recycling?	☒	☐	☐	No topsoil impacted.
26h	Is spoil (uncontaminated excavated material) correctly stored for reuse or recycling?	☒	☐	☐	
26i	Is green waste mulched, composted and stockpiled for reuse on site?	☐	☐	☒	NIL green waste on site.
26j	Is office waste being segregated and recycled?	☒	☐	☐	

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
27.	Traffic Management (Applicable to works site and compound)				
27a	Where required, a Traffic Management Plan is in place and effectively implemented?	☒	☐	☐	TMP implemented
27b	Speed restriction and warning signs are in place?	☒	☐	☐	Managed by TC
27c	Where required, trained Traffic Controllers engaged for ensuring safe pedestrian movements?	☒	☐	☐	
27d	Vehicle parking facility for employees, sub-contractors and visitors established and adequate?	☒	☐	☐	No vehicle parking specifically set up for staff. Public parking being used.
27e	Material loading and unloading areas have no interface with pedestrian and vehicular movement?	☒	☐	☐	
28.	Contamination and Spills (Applicable to works site and compound)				
28a	No spillage of hydrocarbons or chemicals on site? Or potential for contamination (i.e. Asbestos Containing Materials (ACM) adequately managed)	☒	☐	☐	No visible spills
28b	Spill kits provided and where? Are personal trained in using it?	☒	☐	☐	Spill kits kept on site, near to chemical storage area
28c	No harmful discharges to nearby water course?	☒	☐	☐	No discharges to water courses
28d	Has a concrete washout facility been established and maintained?	☒	☐	☐	Concrete washout areas on site
28e	Are materials, product and equipment appropriately stored on site?(e.g. hazardous chemical storage, bunding)	☒	☐	☐	
28f	Is there an appropriate refuelling area?	☐	☐	☒	None taking place
29.	Heritage (Applicable to works site and compound)				
29a	Heritage buildings or artefacts identified and delineated	☒	☐	☐	Signposted and part of plans
29b	Are all current works covered by appropriate heritage approvals?	☒	☐	☐	Current and approved
29c	Does the site induction cover heritage topic and on the ECM?	☒	☐	☐	In induction and toolbox
29d	Are heritage items being managed, fenced & signposted as per CEMP and is the unexpected finds protocol being implemented?	☒	☐	☐	Delineated and protected
29e	Are temporary works on heritage fully reversible with no impacts to fabric?	☒	☐	☐	
30	Noise and Vibration (Applicable to works site and compound)				
30a	Construction activities kept within working hours and high noise and vibrating generating activities adhere to defined requirements	☒	☐	☐	Standards hours works only. High noise activities taking place at Platform 0, noise mats were in place and respite periods being adhered to.
30b	Are standard noise and vibration mitigation measures working effectively and adequately maintained? (Any Non-tonal reversing alarm installed?)	☒	☐	☐	Alarms observed compliant
30c	Dilapidation reports done for possible vibration close to other buildings	☒	☐	☐	
30d	Are out of hours works planned? Are the noise or vibration controls suitable?	☐	☐	☒	No OOHW scheduled
30e	Is noise and vibration monitoring taking place as defined in the Project Monitoring Plan or as required for OOHW?	☐	☐	☒	No OOHW scheduled
31.	Materials (Applicable to works site and compound)				

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
31a	Are deliveries of materials being tracked and recorded?	☒	☐	☐	
31b	Are internal spoil / topsoil movements being tracked (for tracking onsite re-use)?	☒	☐	☐	
32.	Air Quality (Applicable to works site and compound)				
32a	Dust suppression practices implemented as required in the Air Quality Procedure (SEQ-PR-033)? Minimal to no dust leaving site?	☒	☐	☐	
32b	Trucks are leaving site with loads adequately covered?	☐	☐	☒	NIL loaded trucks were observed leaving site during inspection
32c	No excessive fumes or smoke from plants / vehicles?	☒	☐	☐	Plant operating adequately.
33.	Sustainability Reporting (Applicable to works site and compound)				
33a	Is water usage being monitored (e.g. water trucks) and recorded on at least a monthly basis?	☒	☐	☐	
33b	Is potable water use being minimised?	☒	☐	☐	
33c	Are rainwater tanks in place/to be set up on site?	☒	☐	☐	
33d	Is rain/recycled water being used for washdown/dust suppression/irrigation etc?	☒	☐	☐	
33e	Is energy usage being monitored and recorded on a monthly basis (e.g. office compound electricity, fuel use)?	☒	☐	☐	
33f	Do vehicles, plant and equipment meet the following requirements? - Operated for optimum energy efficiency. - Are not left idling when not in use. - fitted with catalytic converters, diesel particulate filters or equivalent devices. - Well maintained and serviced?	☒	☐	☐	
33g	Is waste and recycling being monitoring for both office and construction waste and recorded on at least a monthly basis?	☒	☐	☐	
33h	Is the TfNSW non-road diesel plant workbook being completed as required by the contract?	☒	☐	☐	
33i	Does the works and compound site have energy and water efficient fixtures, fittings and controls?	☒	☐	☐	
33j	Does all plug-in electrical equipment at the site compound has at least a five-star Energy Rating Label?	☒	☐	☐	
33k	Has the selection of materials used on site been undertaken to meet the SMP Materials Management Sub-Plan?	☒	☐	☐	
33l	Are there any construction and demolition waste/materials being reused or recycled on site? (provide details)	☐	☐	☒	No current opportunities to reuse on site.
33m	Have any additional fuel/energy/water/material use reduction opportunities been identified?	☒	☐	☐	
34.	Document Checklist				
34a	Last revision of CEMP, CEMP sub-plans, SMP, and correspondent procedures	☒	☐	☐	Current version being reviewed
34b	Environment Control Map and Erosion and Sediment Control Plans	☒	☐	☐	Being implemented
34c	Community Liaison Management Plan	☒	☐	☐	Community and communications strategy implemented
	OTHER:				
		☐	☐	☐	

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template				
Question	Y	N	N/A	Details
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

Inspection Criteria Ref:	Items of observation needing correction:	Actioned by:	Signature:	Date closed out:
24b	Tree protection zone to be established in accordance with the arborist recommendations at Wooley Ln.	JBlanch		

Signature: ..... Date: .....

Subcontractor Sign-Off

A representative from a Sub Contractor company on site to sign off that they have completed and gone through the Weekly Inspection with Haslin Staff.

Name	Company	Position/Role	Signature	Date

Weekly Site Environmental & Sustainability Inspection

SEQ-CL-005 (1)

To be completed by Site Manager, Environmental/ Sustainability Manager or delegated person at least once a week. Possible more than one inspection per week may be required for high-risk sites.

Project / Site Inspected: Canterbury site

Inspection undertaken by: Elena Ivanova

Date: 25.08.2021 Time: 09:30-10:30 Signature: Elena Ivanova

Complete Relevant sections only:

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
23.	General / Community (Applicable to works site and compound)				
23a	Is the site clean and free of waste and debris?	☒	☐	☐	
23b	Is the site secured appropriately (e.g. fencing) with appropriate signage?	☒	☐	☐	
23c	Has appropriate provision been made for passage of pedestrians around the work site (including footpath protection)?	☒	☐	☐	Traffic controller was in operation
23d	Does the equipment on site appear to be in appropriate working order (noise, exhaust fumes, leakage)?	☒	☐	☐	No excessive noise was detected
23e	Are construction vehicles parked in designated areas?	☒	☐	☐	
23f	Have parking changes been communicated?	☐	☐	☒	No changes this week
23g	Are all environmental no-go zones well delineated and protected?	☐	☐	☒	
23h	Are hoardings clean of graffiti and bill posters?	☒	☐	☐	
23i	Is the community signage up to date?	☒	☐	☐	
23j	Is the shade cloth up with legible contact details?	☒	☐	☐	
23k	Has the latest community notification been sent out on time?	☒	☐	☐	
23l	Has the next OOHW been communicated to relevant sensitive receivers?	☐	☐	☒	
23m	Are night works planned to ensure light spill is minimised? Is this reflected in ECM and/or OOHW application?	☐	☐	☒	
23n	Is site lighting directed away from sensitive receivers and direct views minimised?	☐	☐	☒	Day time inspection
24.	Flora and Fauna (Applicable to works site and compound)				
24a	Are exclusion areas appropriately marked and isolated (e.g. heritage sites, flora/ fauna, environment sensitive areas, wetlands, water courses)?	☒	☐	☐	
24b	Do the trees have adequate protection around the TPZ (bunting, fencing or other delineating signs)? (No storage allowed under the TPZ)	☐	☐	☒	
24c	Has landscaping/offset commenced on site to stabilise exposed areas? Strive to minimise clearance of vegetation	☐	☐	☒	
24d	Are the works area free of weeds? Are the controls adequate to prevent weeds?	☒	☐	☐	
24e	Is there any tree trimming or vegetation removal planned? Are the required Pre-Clearing Checklist,	☐	☐	☒	It was not check during the inspection

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
	Permit to Clear and approvals in place as per Flora and Fauna Management Procedure (SEQ-PR-035)?				
24f	Local Wires numbers on emergency plan?	☒	☐	☐	
25.	Surface Water Quality/Soil Conservation (Applicable to works site and compound)				
25a	Sediment transport to stormwater drains and nearby water courses controlled by silt traps/ barriers? (check adequacy of controls after rain event)	☒	☐	☐	
25b	Silt traps/barriers effective and maintained? Are they compostable and/or reusable?	☒	☐	☐	
25c	Are erosion and sediment controls in place in accordance with ECMS and/or ESCPs?	☒	☐	☐	
25d	Is water discharged in accordance with conditions of approval / EPL? (Water Discharge Permit may be required) No construction water can leave site premises without being tested.	☐	☐	☒	No discharges after a heavy rain event, past 24hrs
25e	No harmful discharges to nearby water course?	☒	☐	☐	
25f	Any Dewatering of trenches, water storage, or dams, discharged into local water ways? If so has SEQ-CL-44 been used? Or local authority's approvals been met?	☐	☐	☒	No offsite discharge
25g	Where necessary, wheel wash facility in place and effective?	☐	☐	☒	
25h	Stock piles adequately segregated & protected with sediment controls (refer to CEMP)	☒	☐	☐	
25i	Vegetation maintained where possible	☒	☐	☐	
25j	Public Roads Clean with Entry/exit points stabilised / wheel cleaning available? Haul road integrity maintained?	☒	☐	☐	
25k	Is the Erosion and Sediment Control Plan being implemented and effective?	☒	☐	☐	The ESCP were implemented and very well maintained.
26.	Waste & Spoil (Applicable to works site and compound)				
26a	Have adequate bins for waste and reusable/recyclable materials been provided?	☒	☐	☐	
26b	Concrete Waste Area provided and disposed of at regular intervals	☐	☐	☒	It was not check during the inspection
26c	No waste stored or left in unauthorised areas?	☒	☐	☐	
26d	Recyclable and reusable waste are segregated and stored in separate bins?	☒	☐	☐	
26e	Waste dockets kept for records?	☒	☐	☐	Reports received from Grasshopper
26f	Waste removed from site at required intervals and disposed of in authorised manner?	☒	☐	☐	
26g	Is topsoil correctly segregated & stored for reuse or recycling?	☐	☐	☒	
26h	Is spoil (uncontaminated excavated material) correctly stored for reuse or recycling?	☐	☐	☒	Excavated materials were removed from site, no stockpiles were observed
26i	Is green waste mulched, composted and stockpiled for reuse on site?	☐	☐	☒	
26j	Is office waste being segregated and recycled?	☒	☐	☐	

27.	Traffic Management (Applicable to works site and compound)				
27a	Where required, a Traffic Management Plan is in place and effectively implemented?	☒	☐	☐	
27b	Speed restriction and warning signs are in place?	☒	☐	☐	
27c	Where required, trained Traffic Controllers engaged for ensuring safe pedestrian movements?	☒	☐	☐	Traffic controller was in operation
27d	Vehicle parking facility for employees, sub-contractors and visitors established and adequate?	☒	☐	☐	
27e	Material loading and unloading areas have no interface with pedestrian and vehicular movement?	☒	☐	☐	Compound areas well segregated from public
28.	Contamination and Spills (Applicable to works site and compound)				
28a	No spillage of hydrocarbons or chemicals on site? Or potential for contamination (i.e. Asbestos Containing Materials (ACM) adequately managed)	☒	☐	☐	No spills observed
28b	Spill kits provided and where? Are personal trained in using it?	☒	☐	☐	
28c	No harmful discharges to nearby water course?	☒	☐	☐	No discharges observed
28d	Has a concrete washout facility been established and maintained?	☐	☐	☒	
28e	Are materials, product and equipment appropriately stored on site?(e.g. hazardous chemical storage, bunding)	☒	☐	☐	Locked chemical storage on hard surface, coir logs in spill area
28f	Is there an appropriate refuelling area?	☐	☒	☐	
29.	Heritage (Applicable to works site and compound)				
29a	Heritage buildings or artefacts identified and delineated	☒	☐	☐	
29b	Are all current works covered by appropriate heritage approvals?	☒	☐	☐	
29c	Does the site induction cover heritage topic and on the ECM?	☒	☐	☐	
29d	Are heritage items being managed, fenced & signposted as per CEMP and is the unexpected finds protocol being implemented?	☒	☐	☐	
29e	Are temporary works on heritage fully reversible with no impacts to fabric?	☒	☐	☐	
30	Noise and Vibration (Applicable to works site and compound)				
30a	Construction activities kept within working hours and high noise and vibrating generating activities adhere to defined requirements	☒	☐	☐	
30b	Are standard noise and vibration mitigation measures working effectively and adequately maintained? (Any Non-tonal reversing alarm installed?)	☒	☐	☐	
30c	Dilapidation reports done for possible vibration close to other buildings	☐	☐	☒	
30d	Are out of hours works planned? Are the noise or vibration controls suitable?	☒	☐	☐	
30e	Is noise and vibration monitoring taking place as defined in the Project Monitoring Plan or as required for OOHW?	☐	☐	☒	
31.	Materials (Applicable to works site and compound)				
31a	Are deliveries of materials being tracked and recorded?	☒	☐	☐	
31b	Are internal spoil / topsoil movements being tracked (for tracking onsite re-use)?	☒	☐	☐	

32.	Air Quality (Applicable to works site and compound)				
32a	Dust suppression practices implemented as required in the Air Quality Procedure (SEQ-PR-033)? Minimal to no dust leaving site?	☐	☐	☒	Wet conditions, heavy rain past 24 hrs
32b	Trucks are leaving site with loads adequately covered?	☒	☐	☐	
32c	No excessive fumes or smoke from plants / vehicles?	☒	☐	☐	
33.	Sustainability Reporting (Applicable to works site and compound)				
33a	Is water usage being monitored (e.g. water trucks) and recorded on at least a monthly basis?	☒	☐	☐	
33b	Is potable water use being minimised?	☒	☐	☐	
33c	Are rainwater tanks in place/to be set up on site?	☒	☐	☐	
33d	Is rain/recycled water being used for washdown/dust suppression/irrigation etc?	☐	☐	☒	Dust suppression not required due to rain
33e	Is energy usage being monitored and recorded on a monthly basis (e.g. office compound electricity, fuel use)?	☒	☐	☐	
33f	Do vehicles, plant and equipment meet the following requirements? - Operated for optimum energy efficiency. - Are not left idling when not in use. - fitted with catalytic converters, diesel particulate filters or equivalent devices. - Well maintained and serviced?	☒	☐	☐	
33g	Is waste and recycling being monitoring for both office and construction waste and recorded on at least a monthly basis?	☐	☐	☒	It was not checked during the inspection
33h	Is the TfNSW non-road diesel plant workbook being completed as required by the contract?	☐	☐	☒	
33i	Does the works and compound site have energy and water efficient fixtures, fittings and controls?	☐	☐	☒	
33j	Does all plug-in electrical equipment at the site compound has at least a five-star Energy Rating Label?	☐	☐	☒	All works currently done by plant, battery or hand
33k	Has the selection of materials used on site been undertaken to meet the SMP Materials Management Sub-Plan?	☒	☐	☐	
33l	Are there any construction and demolition waste/materials being reused or recycled on site? (provide details)	☐	☐	☒	Recycled off site
33m	Have any additional fuel/energy/water/material use reduction opportunities been identified?	☒	☐	☐	
34.	Document Checklist				
34a	Last revision of CEMP, CEMP sub-plans, SMP, and correspondent procedures	☒	☐	☐	
34b	Environment Control Map and Erosion and Sediment Control Plans	☒	☐	☐	Being implemented
34c	Community Liaison Management Plan	☒	☐	☐	
	OTHER:				
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

Inspection Criteria Ref:	Items of observation needing correction:	Actioned by:	Signature:	Date closed out:

Signature: Elena Ivanova Date: 25/08/2021

Subcontractor Sign-Off

A representative from a Sub Contractor company on site to sign off that they have completed and gone through the Weekly Inspection with Haslin Staff.

Name	Company	Position/Role	Signature	Date

Weekly Site Environmental & Sustainability Inspection

SEQ-CL-005 (1)

To be completed by Site Manager, Environmental/ Sustainability Manager or delegated person at least once a week. Possible more than one inspection per week may be required for high-risk sites.

Project / Site Inspected: Lakemba Site

Inspection undertaken by: Elena Ivanova

Date: 25/08/2021 Time: 8:00-8:30 Signature: Elena Ivanova

Complete Relevant sections only:

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
23.	General / Community (Applicable to works site and compound)				
**	Have the previous week's actions been addressed and actioned?	☒	☐	☐	
23a	Is the site clean and free of waste and debris?	☒	☐	☐	
23b	Is the site secured appropriately (e.g. fencing) with appropriate signage?	☒	☐	☐	
23c	Has appropriate provision been made for passage of pedestrians around the work site (including footpath protection)?	☒	☐	☐	Access around compound not perfect but provision has been made to allow safe passage.
23d	Does the equipment on site appear to be in appropriate working order (noise, exhaust fumes, leakage)?	☒	☐	☐	No equipment was in operation during the inspection
23e	Are construction elements (Plant, equipment, materials, etc) located in area to minimise visual impacts, ie within site compounds and behind fencing/hoarding?	☒	☐	☐	Shade cloth is up
23f	Have parking changes been communicated?	☒	☐	☐	Parking was observed along the site fence of the site under "NO PARKING" signs, installed on the site fence.
23g	Are all environmental no-go zones well delineated and protected?	☒	☐	☐	
23h	Are hoardings clean of graffiti and bill posters?	☒	☐	☐	
23i	Is the community signage up to date?	☒	☐	☐	
23j	Is the shade cloth up with legible contact details?	☒	☐	☐	
23k	Is the hoarding and fencing be maintained in a neat and tidy condition	☒	☐	☐	
23l	Is fencing, walls, and hoarding designed and implemented to increase natural surveillance with straight runs	☒	☐	☐	
23m	Has the latest community notification been sent out on time?	☒	☐	☐	
23n	Has the next OOHW been communicated to relevant sensitive receivers?	☐	☐	☒	No OOHW scheduled
23o	Are night works planned to ensure light spill is minimised? Is this reflected in ECM and/or OOHW application?	☐	☐	☒	
23p	Is site lighting directed away from sensitive receivers and direct views minimised?	☐	☐	☒	
24.	Flora and Fauna (Applicable to works site and compound)				
24a	Are exclusion areas appropriately marked and isolated (e.g. heritage sites, flora/ fauna, environment sensitive areas, wetlands, water courses)?	☒	☐	☐	

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
24b	Do the trees have adequate protection around the TPZ (bunting, fencing or other delineating signs)? (No storage allowed under the TPZ)	☒	☐	☐	
24c	Has landscaping/offset commenced on site to stabilise exposed areas? Strive to minimise clearance of vegetation	☒	☐	☐	
24d	Are the works area free of weeds? Are the controls adequate to prevent weeds?	☒	☐	☐	
24e	Is there any tree trimming or vegetation removal planned to minimise the tree remove? Are the required Pre-Clearing Checklist, Permit to Clear and approvals in place as per Flora and Fauna Management Procedure (SEQ-PR-035)?	☐	☐	☒	
24f	Local Wires numbers on emergency plan?	☒	☐	☐	Visible on plan
25.	Surface Water Quality/Soil Conservation (Applicable to works site and compound)				
25a	Sediment transport to stormwater drains and nearby water courses controlled by silt traps/ barriers? (check adequacy of controls after rain event)	☒	☐	☐	Sediment controls in place as required. Controls worked well during heavy rain past 24 hrs
25b	Silt traps/barriers effective and maintained? Are they compostable and/or reusable?	☒	☐	☐	In good clean condition
25c	Are erosion and sediment controls in place in accordance with ECMS and/or ESCPs?	☒	☐	☐	
25d	Is water discharged in accordance with conditions of approval / EPL? (Water Discharge Permit may be required) No construction water can leave site premises without being tested.	☐	☐	☒	No water being discharged
25e	No harmful discharges to nearby water course?	☐	☐	☒	
25f	Any Dewatering of trenches, water storage, or dams, discharged into local water ways? If so has SEQ-CL-44 been used? Or local authority's approvals been met?	☐	☐	☒	No dewatering activities
25g	Where necessary, wheel wash facility in place and effective?	☐	☐	☒	
25h	Stock piles adequately segregated, covered & protected with sediment controls (refer to CEMP)	☐	☐	☒	
25i	Vegetation maintained where possible	☒	☐	☐	
25j	Public Roads Clean with Entry/exit points stabilized / wheel cleaning available? Haul road integrity maintained?	☒	☐	☐	
25k	Is the Erosion and Sediment Control Plan being implemented and effective?	☒	☐	☐	Sed controls in place
26.	Waste & Spoil (Applicable to works site and compound)				
26a	Have adequate bins for waste and reusable/recyclable materials been provided?	☒	☐	☐	
26b	Concrete Waste Area provided and disposed of at regular intervals	☐	☐	☒	
26c	No waste stored or left in unauthorised areas?	☒	☐	☐	
26d	Recyclable and reusable waste are segregated and stored in separate bins?	☒	☐	☐	
26e	Waste dockets kept for records?	☐	☐	☒	It was nor checked during the inspection

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
26f	Waste removed from site at required intervals and disposed of in authorised manner?	☒	☐	☒	
26g	Is topsoil correctly segregated & stored for reuse or recycling?	☐	☐	☒	
26h	Is spoil (uncontaminated excavated material) correctly stored for reuse or recycling?	☐	☐	☒	
26i	Is green waste mulched, composted and stockpiled for reuse on site?	☐	☐	☒	
26j	Is office waste being segregated and recycled?	☒	☐	☐	
27.	Traffic Management (Applicable to works site and compound)				
27a	Where required, a Traffic Management Plan is in place and effectively implemented?	☒	☐	☐	
27b	Speed restriction and warning signs are in place?	☐	☐	☒	
27c	Where required, trained Traffic Controllers engaged for ensuring safe pedestrian movements?	☐	☐	☒	
27d	Vehicle parking facility for employees, sub-contractors and visitors established and adequate?	☒	☐	☐	Parking was observed along the site fence of the site under “NO PARKING” signs, installed on the site fence.
27e	Material loading and unloading areas have no interface with pedestrian and vehicular movement?	☒	☐	☐	
28.	Contamination and Spills (Applicable to works site and compound)				
28a	No spillage of hydrocarbons or chemicals on site? Or potential for contamination (i.e. Asbestos Containing Materials (ACM) adequately managed)	☒	☐	☐	
28b	Spill kits provided and where? Are personal trained in using it?	☒	☐	☐	To be moved around as required
28c	No harmful discharges to nearby water course?	☐	☐	☒	
28d	Has a concrete washout facility been established and maintained?	☐	☐	☒	
28e	Are materials, product and equipment appropriately stored on site?(e.g. hazardous chemical storage, bunding)	☒	☐	☐	
28f	Is there an appropriate refuelling area?	☐	☐	☒	
29.	Heritage (Applicable to works site and compound)				
29a	Heritage buildings or artefacts identified and delineated	☒	☐	☐	
29b	Are all current works covered by appropriate heritage approvals?	☒	☐	☐	
29c	Does the site induction cover heritage topic and on the ECM?	☒	☐	☐	
29d	Are heritage items being managed, fenced & signposted as per CEMP and is the unexpected finds protocol being implemented?	☒	☐	☐	
29e	Are temporary works on heritage fully reversible with no impacts to fabric?	☐	☐	☒	No works were undertaken at the platforms
30	Noise and Vibration (Applicable to works site and compound)				
30a	Construction activities kept within working hours and high noise and vibrating generating activities adhere to defined requirements	☒	☐	☐	
30b	Are standard noise and vibration mitigation measures working effectively and adequately maintained? (Any Non-tonal reversing alarm installed?)	☒	☐	☐	

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template						
Question		Y	N	N/A	Details	
30c	Dilapidation reports done for possible vibration close to other buildings	☒	☐	☐		
30d	Are out of hours works planned? Are the noise or vibration controls suitable?	☒	☐	☐		
30e	Is noise and vibration monitoring taking place as defined in the Project Monitoring Plan or as required for OOHW?	☒	☐	☐		
31.	Materials (Applicable to works site and compound)					
31a	Are deliveries of materials being tracked and recorded?	☐	☐	☒	It was not checked during the inspection	
31b	Are internal spoil / topsoil movements being tracked (for tracking onsite re-use)?	☐	☐	☒	No excavation works were undertaken	
32.	Air Quality (Applicable to works site and compound)					
32a	Dust suppression practices implemented as required in the Air Quality Procedure (SEQ-PR-033)? Minimal to no dust leaving site?	☒	☐	☐		
32b	Trucks are leaving site with loads adequately covered?	☐	☐	☒		
32c	No excessive fumes or smoke from plants / vehicles?	☒	☐	☐		
33.	Sustainability Reporting (Applicable to works site and compound)					
33a	Is water usage being monitored (e.g. water trucks) and recorded on at least a monthly basis?	☒	☐	☐		
33b	Is potable water use being minimised?	☐	☐	☒		
33c	Are rainwater tanks in place/to be set up on site?	☒	☐	☐		
33d	Is rain/recycled water being used for washdown/dust suppression/irrigation etc?	☐	☐	☒		
33e	Is energy usage being monitored and recorded on a monthly basis (e.g. office compound electricity, fuel use)?	☐	☐	☒		
33f	Do vehicles, plant and equipment meet the following requirements? - Operated for optimum energy efficiency. - Are not left idling when not in use. - fitted with catalytic converters, diesel particulate filters or equivalent devices. - Well maintained and serviced?	☒	☐	☐		
33g	Is waste and recycling being monitoring for both office and construction waste and recorded on at least a monthly basis?	☐	☐	☒	It was not checked during the inspection	
33h	Is the TfNSW non-road diesel plant workbook being completed as required by the contract?	☐	☐	☒		
33i	Does the works and compound site have energy and water efficient fixtures, fittings and controls?	☒	☐	☐	Where possible	
33j	Does all plug-in electrical equipment at the site compound has at least a five-star Energy Rating Label?	☐	☐	☒		
33k	Has the selection of materials used on site been undertaken to meet the SMP Materials Management Sub-Plan?	☒	☐	☐		
33l	Are there any construction and demolition waste/materials being reused or recycled on site? (provide details)	☒	☐	☐		
33m	Have any additional fuel/energy/water/material use reduction opportunities been identified?	☐	☐	☒		
34.	Document Checklist					

TfNSW Environment Sustainability Inspection Questions combined with Haslin Template					
Question		Y	N	N/A	Details
34a	Last revision of CEMP, CEMP sub-plans, SMP, and correspondent procedures	☒	☐	☐	Current version approved and being updated
34b	Environment Control Map and Erosion and Sediment Control Plans	☒	☐	☐	Being implemented
34c	Community Liaison Management Plan	☒	☐	☐	Community and communications strategy implemented
	OTHER:				
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

Inspection Criteria Ref:	Items of observation needing correction:	Actioned by:	Signature:	Date closed out:

Signature: .....

Subcontractor Sign-Off

A representative from a Sub Contractor company on site to sign off that they have completed and gone through the Weekly Inspection with Haslin Staff.

Name	Company	Position/Role	Signature	Date

Daily Rainfall (millimetres)

MARRICKVILLE GOLF CLUB

Station Number: 066036 · State: NSW · Opened: 1904 · Status: Open · Latitude: 33.92°S · Longitude: 151.14°E · Elevation: 6 m

2021	Mar	Apr	May	Jun	Jul	Aug
1st	0	8.0	1.0	0	2.0	0
2nd	0	0	0	0	2.0	0
3rd	0	0	0	0	1.0	3.0
4th	0	0	0	9.0	0	0
5th	0	0	28.0	0	0	0
6th	0	2.0	21.0	0	0	0
7th	0	9.0	38.0	8.0	0	0
8th	0	7.0	1.0	0	0	1.0
9th	0	1.0	0	7.0	0	0
10th	0	0	0	1.0	5.0	0
11th	0	0	0	6.0	15.0	0
12th	0	0	0	0	1.0	0
13th	42.0	0	1.0	0	1.0	0
14th	19.0	0	0	0	0	0
15th	15.0	0	0	0	2.0	0
16th	1.0	0	0	0	1.0	0
17th	5.0	0	0	7.0	1.0	0
18th	14.0	0	0	0	0	0
19th	53.0	0	0	2.0	0	0
20th	55.0	0	0	4.0	0	0
21st	107.0	0	1.0	2.0	0	0
22nd	24.0	0	2.0	2.0	0	0
23rd	42.0	0	0	0	0	0
24th	25.0	0	4.0	0	1.0	32.0
25th	0	0	2.0	1.0	0	43.0
26th	0	0	0	0	0	0
27th	0	0	0	0	0	0
28th	0	0	0	2.0	0	0
29th	0	0	0	10.0	0	0
30th	1.0	0	0	9.0	0	1.0
31st	4.0		0		0	0
Highest daily	107.0	9.0	38.0	10.0	15.0	43.0
Monthly Total	407.0	27.0	99.0	70.0	32.0	80.0

Product code: IDCJAC0009 reference: 81863864

1) Further information
http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml.

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Daily Rainfall (millimetres)

CANTERBURY RACECOURSE AWS

Station Number: 066194 · State: NSW · Opened: 1995 · Status: Open · Latitude: 33.91°S · Longitude: 151.11°E · Elevation: 3 m

2021	Mar	Apr	May	Jun	Jul	Aug
1st	0	5.6	2.0	0	0.6	0
2nd	0	0	0	0	3.2	0
3rd	0	0	0		0	3.6
4th	0	0	0	7.4	0.2	0
5th	0	0	22.6	0	0	0
6th	0	1.2	25.2	0	0	0
7th	0	2.4	38.6	0	0	0
8th	0	7.2	0.4	0	0	0.8
9th	0.2	0	0.2	8.8	0	0.8
10th	0	0.2	0	0	5.4	0
11th	1.4	0	0	8.0	16.4	0
12th	1.0	0	0	0	0.8	0
13th	35.2	0	1.8	0	0.2	0
14th	17.8	0	0	0	0	0
15th	12.8	0	0	0	2.2	0
16th	0	0	0	0	1.6	0
17th	5.4	0	0	7.8	1.0	0
18th	9.6	0	0	0.2	0	0
19th	65.0	0	0	2.4	0	0
20th	56.8	0	0	3.0	0	0
21st	100.4	0	0.8	1.6	0	0
22nd	25.0	0	0.2	1.0	0	0
23rd	44.8	0	0	0.4	0.4	0
24th	26.2	0	1.8	0	0.8	36.8
25th	0.2	0	7.4	0.8	0	47.4
26th	0	0	0	0.2	0	0
27th	0	0	0	0	0	0
28th	0	0	0	0	0	0
29th	0	0	0	7.2	0	0
30th	0	0	0	14.2	0	0
31st	1.4		0		0	0.2
Highest daily	100.4	7.2	38.6	14.2	16.4	47.4
Monthly Total	403.2	16.6	101.0	63.0	32.8	89.6

Product code: IDCJAC0009 reference: 81863759

1) Further information
http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml.

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