



Environmental Monitoring Data

Project:	Sydney Metro City & Southwest– TSE Works
Document Number:	SMCSWTSE-JCG-TPW-EM-RPT-097406
Reporting Period:	April 2019
Date Published:	13 May 2019

Document Approval

Rev.	Date	Prepared by	Reviewed by	Approved by	Remarks
01	10/05/2019	D. Windnagel	R. Muir	R. Muir	For publication

Project Summary

The Sydney Metro City and Southwest is the second portion of the new standalone rail network known as the Sydney Metro which is Australia’s largest public transport infrastructure project and a priority rail project for the NSW Government. John Holland CPB Ghella (JHCPBG) have been contracted by Transport for New South Wales to design and construct the Tunnel and Stations Excavation Works Project (TSE Works) of the Sydney Metro City & Southwest between Chatswood and Sydenham. Figure 1 provides an overview of the Project.



Figure 1: Project Overview

Environmental Protection Licence and Reporting Requirements

John Holland Pty Ltd obtained the Environment Protection Licence (EPL No. 20971) from the NSW Environment Protection Authority for the Tunnel and Station Excavation (TSE) Works on behalf of the John Holland CPB Ghella (JHCPBG) Joint Venture. The licence is for construction works relating to Rail Systems Activities and Concrete Works as defined under Schedule 1 of the *Protection of the Environment Operations Act, 1997* (POEO Act).

The licence describes monitoring and reporting requirements for the TSE Works, and specifically provides discharge criteria for water treatment plant and sediment basin water quality. The following report details environmental monitoring undertaken during this reporting month conducted in accordance with the EPL.

The EPL can be found by following the link below to the EPA’s website:

<https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=153426&SYSUID=1&LICID=20971>

Discharge Water Monitoring

Testing and discharge was undertaken during this reporting period. Table 1 contains the discharge monitoring results.

Noise and Vibration Monitoring

Noise and vibration monitoring was undertaken during this reporting period. Table 2 contains the vibration monitoring results, and Table 3 contains the noise monitoring results.

Real-Time Noise and Vibration Monitoring

Real-time noise and vibration monitors were operating at Barangaroo, Crows Nest, Martin Place, Pitt Street, and Victoria Cross during the February reporting period. Table 4.1 and 4.2 contains summarised real-time noise monitoring results and real-time vibration data is displayed in Table 5.

Table 1: Discharge Water Monitoring Data.

Monitoring Point	Identifier ¹	Date Sampled	Event Based Monitoring (Y/N)	Parameter/ Criteria/ Measured Value			Comments
				pH (6.5 - 8.5)	Turbidity (<35 NTU)	Oil & Grease (None Visible)	
3	VC_03	1/04/2019	Y	7.86	0.42	Nil	Discharge permit issued
2	BL_02	1/04/2019	Y	7.30	11.20	Nil	Discharge permit issued
2	CN_02	4/04/2019	Y	7.7	1.3	Nil	Discharge permit issued
3	PS_03	4/04/2019	Y	7.2	8.2	Nil	Discharge permit issued
1	WL_01	4/04/2019	Y	8.2	<1	Nil	Discharge permit issued
2	MDS_02	5/04/2019	Y	8.2	5.4	Nil	Discharge permit issued
1	MDS_01	5/04/2019	Y	7.7	4.34	Nil	Discharge permit issued
2	CD_02	7/04/2019	Y	7.45	3	Nil	Discharge permit issued

¹ As per discharge point identified in Sydney Metro City and Southwest Temporary Basin and Water Treatment Discharge Point Schedule

Table 2: Vibration Monitoring Data.

No attended vibration data was collected during the month of April, 2019.

Monitoring location	Monitoring Date	Attended or Continuous Monitoring	Event Based Monitoring (Y/N)	Measured VDV (m/s ^{1.75})	VDV Target (m/s ^{1.75})	VDV Compliant	Measured PPV (mm/s)	PPV Target (mm/s)	PPV Compliant
Nil									

Table 3: Noise Monitoring Data

Monitoring Location (Noise-Catchment Area, Street, Suburb)	Monitoring Date	Attended or Continuous Monitoring	Event Based Monitoring (Y/N)	Parameter	Measured Value dB(A)	Goals / Targets dB(A)	Comments
BN_03, 30 High Street, Millers Point	01/04/2019	Attended	Y	LAeq 15min	53.2	66	TSE works compliant
WS_02, 213 Cope Street, Waterloo	01/04/2019	Attended	Y	LAeq 15min	51.5	52	TSE works compliant
CN_03, 10-12 Clarke Street, Crows Nest	02/04/2019	Attended	Y	LAeq 15min	68.4	92	TSE works compliant
CDS_06, 344 Mowbray Road, Chatswood	02/04/2019	Attended	Y	LAeq 15min	65.6	71	TSE works compliant
BN_03, 30 High Street, Millers Point	03/04/2019	Attended	Y	LAeq 15min	60.1	70	TSE works compliant
BN_03, 52 High Street, Millers Point	03/04/2019	Attended	Y	LAeq 15min	56.4	70	TSE works compliant
CN_03, 10-12 Clarke Street, Crows Nest	03/04/2019	Attended	Y	LAeq 15min	67.4	84	TSE works compliant
WS_03, 122 Wellington Street, Waterloo	03/04/2019	Attended	Y	LAeq 15min	57.4	52	TSE works compliant, traffic dominant noise source
CN_03, 10-12 Clarke Street, Crows Nest	03/04/2019	Attended	Y	LAeq 15min	68.1	92	TSE works compliant
WS_03, 122 Wellington Street, Waterloo	04/04/2019	Attended	Y	LAeq 15min	51.7	44	TSE works compliant, traffic dominant noise source
MP_01, 27-39 Castlereagh Street, Sydney	04/04/2019	Attended	Y	LAeq 15min	67.5	76	TSE works compliant
CN_03, 10-12 Clarke Street, Crows Nest	05/04/2019	Attended	Y	LAeq 15min	46.0	60	TSE works compliant
BN_03, 10 High Street, Millers Point	05/04/2019	Attended	Y	LAeq 15min	57.4	70	TSE works compliant
BN_03, 30 High Street, Millers Point	05/04/2019	Attended	Y	LAeq 15min	58.3	70	TSE works compliant
BN_03, 44 High Street, Millers Point	05/04/2019	Attended	Y	LAeq 15min	55.0	55	TSE works compliant

Monitoring Location (Noise-Catchment Area, Street, Suburb)	Monitoring Date	Attended or Continuous Monitoring	Event Based Monitoring (Y/N)	Parameter	Measured Value dB(A)	Goals / Targets dB(A)	Comments
MP_01, 165 Phillip Street, Sydney	05/04/2019	Attended	Y	LAeq 15min	72.8	71	TSE works compliant, traffic dominant noise source
CDS_03, 7-11 Nelson Street, Chatswood	08/04/2019	Attended	Y	LAeq 15min	51.9	54	TSE works compliant
CN_03, 10-12 Clarke Street, Crows Nest	08/04/2019	Attended	Y	LAeq 15min	55.5	92	TSE works compliant
CN_03, 10-12 Clarke Street, Crows Nest	08/04/2019	Attended	Y	LAeq 15min	57.5	84	TSE works compliant
CDS_03, 7-11 Nelson Street, Chatswood	08/04/2019	Attended	Y	LAeq 15min	58.0	54	TSE works compliant, traffic dominant noise source
VC_01, 171 Pacific Highway - Vibe Hotel Level 9	10/04/2019	Attended	Y	LAeq 15min	31.9	35	TSE works compliant
BN_03, 30 High Street, Millers Point	10/04/2019	Attended	Y	LAeq 15min	64.9	82	TSE works compliant, works occurring in Standard Construction Hours
CN_03, 22-26 Clarke Street, Crows Nest	10/04/2019	Attended	Y	LAeq 15min	44.4	45	TSE works compliant
CN_03, 22-26 Clarke Street, Crows Nest	10/04/2019	Attended	Y	LAeq 15min	40.6	45	TSE works compliant
CDS_02, 1 Moriarty Road, Chatswood	10/04/2019	Attended	Y	LAeq 15min	60.2	54	TSE works compliant, traffic dominant noise source
BN_03, 30 High Street, Millers Point	11/04/2019	Attended	Y	LAeq 15min	59.2	82	TSE works compliant, works occurring in Standard Construction Hours
CDS_02, 1 Moriarty Road, Chatswood	11/04/2019	Attended	Y	LAeq 15min	49.0	48	TSE works compliant, traffic dominant noise source
CDS_02, 552-554 Pacific Highway, Chatswood	11/04/2019	Attended	Y	LAeq 15min	67.6	55	TSE works compliant, traffic dominant noise source
CDS_03, 9-11 Nelson Street, Chatswood	11/04/2019	Attended	Y	LAeq 15min	55.6	54	TSE works compliant, traffic dominant noise source
BN_03, 30 High Street, Barangaroo	29/04/2019	Attended	Y	LAeq 15min	64.1	66	TSE works compliant

Table 4-1 Summary Table of Real Time Noise Data Compared Against EPL Condition E1.1.

Location & Noise Goal																				
Date	545 Pacific Hwy		10 to 12 Clarke Street		65 Berry Street		Castlereagh Boutique Hotel		Edinburgh Castle Hotel		50 Martin Place		25A Hickson Road		243 Miller Street		60 Castlereagh Street (Level 2 Internal)		60 Castlereagh Street (Basement)	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
01/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	-	-
02/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
03/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	-	-
04/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
05/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
06/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	-	-
07/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
08/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
09/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
10/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
11/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-
12/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
13/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
14/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-
15/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-

Location & Noise Goal																				
Date	545 Pacific Hwy		10 to 12 Clarke Street		65 Berry Street		Castlereagh Boutique Hotel		Edinburgh Castle Hotel		50 Martin Place		25A Hickson Road		243 Miller Street		60 Castlereagh Street (Level 2 Internal)		60 Castlereagh Street (Basement)	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
16/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
17/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
18/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
19/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
20/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
21/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
22/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
23/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
24/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
25/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
26/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
27/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
28/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
29/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes
30/04/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes

Table 4-2: Real-Time Noise Monitoring Data

Report for Condition E1.1 on 01/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	2	Yes
	Lower	39	19	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	13	Yes
	Lower	39	37	Yes
50 Martin Place	Upper	26	6	Yes
	Lower	39	26	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	27	No
	Lower	39	48	No
Report for Condition E1.1 on 02/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	7	Yes
	Lower	39	34	Yes
65 Berry St	Upper	26	2	Yes
	Lower	39	2	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	3	Yes
	Lower	39	32	Yes
50 Martin Place	Upper	26	4	Yes
	Lower	39	27	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	1	Yes
	Lower	39	4	Yes
60 Castlereagh St (Level 2)	Upper	26	18	Yes
	Lower	39	40	No

Report for Condition E1.1 on 03/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	29	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	4	Yes
	Lower	39	22	Yes
50 Martin Place	Upper	26	8	Yes
	Lower	39	28	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	4	Yes
60 Castlereagh St (Level 2)	Upper	26	31	No
	Lower	39	46	No
Report for Condition E1.1 on 04/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	2	Yes
	Lower	39	30	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	20	Yes
	Lower	39	31	Yes
50 Martin Place	Upper	26	11	Yes
	Lower	39	30	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	2	Yes
	Lower	39	4	Yes
60 Castlereagh St (Level 2)	Upper	26	12	Yes
	Lower	39	40	No

Report for Condition E1.1 on 05/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	39	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	7	Yes
	Lower	39	34	Yes
50 Martin Place	Upper	26	7	Yes
	Lower	39	28	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	2	Yes
	Lower	39	4	Yes
60 Castlereagh St (Level 2)	Upper	26	10	Yes
	Lower	39	29	Yes
Report for Condition E1.1 on 06/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	10	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	12	Yes
	Lower	39	15	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	1	Yes
	Lower	39	2	Yes
60 Castlereagh St (Level 2)	Upper	26	31	No
	Lower	39	39	Yes

Report for Condition E1.1 on 07/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	13	Yes
	Lower	39	18	Yes
Report for Condition E1.1 on 08/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	31	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	21	Yes
	Lower	39	36	Yes
50 Martin Place	Upper	26	4	Yes
	Lower	39	29	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	18	Yes
	Lower	39	44	No

Report for Condition E1.1 on 09/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	6	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	9	Yes
	Lower	39	29	Yes
50 Martin Place	Upper	26	9	Yes
	Lower	39	28	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	21	Yes
	Lower	39	46	No
Report for Condition E1.1 on 10/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	5	Yes
	Lower	39	16	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	26	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	18	Yes
	Lower	39	44	No

Report for Condition E1.1 on 11/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	26	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	30	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	33	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	18	Yes
	Lower	39	47	No
Report for Condition E1.1 on 12/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	3	Yes
	Lower	39	33	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	17	Yes
50 Martin Place	Upper	26	2	Yes
	Lower	39	32	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	1	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	18	Yes
	Lower	39	35	Yes

Report for Condition E1.1 on 13/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	15	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	1	Yes
	Lower	39	11	Yes
Report for Condition E1.1 on 14/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	1	Yes
	Lower	39	11	Yes

Report for Condition E1.1 on 15/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	13	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	6	Yes
	Lower	39	26	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	19	Yes
	Lower	39	43	No
Report for Condition E1.1 on 16/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	12	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	6	Yes
	Lower	39	39	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Level 2)	Upper	26	2	Yes
	Lower	39	6	Yes
60 Castlereagh St (Basement)	Upper	26	9	Yes
	Lower	39	9	Yes

Report for Condition E1.1 on 17/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	24	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	38	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	9	Yes
	Lower	39	10	Yes
Report for Condition E1.1 on 18/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	7	Yes
	Lower	39	18	Yes
65 Berry St	Upper	26	1	Yes
	Lower	39	1	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	37	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	13	Yes

Report for Condition E1.1 on 19/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	4	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 20/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	2	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	1	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes

Report for Condition E1.1 on 21/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes
Report for Condition E1.1 on 22/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 23/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	18	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	32	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	3	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	11	Yes
Report for Condition E1.1 on 24/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	3	Yes
	Lower	39	32	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	4	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	1	Yes
60 Castlereagh St (Basement)	Upper	26	11	Yes
	Lower	39	22	Yes

Report for Condition E1.1 on 25/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	20	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 26/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	12	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	9	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	10	Yes
	Lower	39	17	Yes

Report for Condition E1.1 on 27/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	14	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	2	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	11	Yes
	Lower	39	15	Yes
Report for Condition E1.1 on 28/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	3	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	12	Yes

Report for Condition E1.1 on 29/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	3	Yes
	Lower	39	19	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	4	Yes
	Lower	39	27	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	3	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	12	Yes
Report for Condition E1.1 on 30/04/2019				
Location	Noise Goal	15 minute periods in exceedance		Has condition been met?
		Permitted	Exceeded	
545 Pacific Highway	Upper	26	0	Yes
	Lower	39	0	Yes
10 to 12 Clarke Street	Upper	26	15	Yes
	Lower	39	33	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	17	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	1	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
243 Miller St	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	11	Yes

Real Time Noise Analysis Results Comments:

60 Castlereagh St (Level 2)

**1/04/2019, 2/04/2019, 3/04/2019, 4/04/2019, 6/04/2019, 8/04/2019, 9/04/2019, 10/04/2019,
11/04/2019, 15/04/2019**

On the above date's alerts were received advising that the number of logging periods above 50dBA recorded between 7:00 and 20:00 AEDT had been exceeded.

The Site Environmental Coordinator reviewed the real-time noise data for each day and identified an increase in noise levels from approximately 6:30pm past 8:00pm at this location. It is understood that the room housing the real-time noise monitor frequently conducts late lectures. This is understood to be the cause of the peak in noise.

It was therefore concluded that TSE works were compliant with the required noise limits.

Table 5: Real-Time Vibration Monitoring Data (Maximum recorded value per day)

Day	22 Clarke Street, Crows Nest	10 to 12 Clarke Street, Crows Nest	65 Berry Street, North Sydney	237 Miller Street, North Sydney	243 Miller Street, North Sydney	25A Hickson Road, Millers Point	50 Martin Place, Sydney	60 Castlereagh Street (Basement), Sydney	60 Castlereagh Street (level 2), Sydney	Castlereagh Boutique Hotel	211-217 Castlereagh Street, Sydney
Criteria (mm/s)	25	25	25	25	7.5	25	7.5	25	25	7.5	25
01/04/2019	0.88	1.07	0.21	0.86	1.11	1.84	0.4	4.3	0.68	4.11	0.98
02/04/2019	0.77	0.56	1.04	0.5	1.05	0.16	0.61	14.84	0.78	2.11	0.97
03/04/2019	1.04	0.92	0.55	0.69	1.97	1.25	1.57	11.93	0.73	8.37	0.59
04/04/2019	0.74	0.65	0.4	0.49	42.52	0.21	2.18	1.59	0.99	4.14	0.76
05/04/2019	0.59	0.36	0.32	0.47	1.4	0.11	1.9	0.41	0.38	1.75	0.93
06/04/2019	0.45	0.19	0.68	0.4	1.58	0.39	0.66	0.87	0.32	2.11	2.12
07/04/2019	0.49	0.19	0.44	0.12	17.93	0.08	0.27	0.62	0.37	3.65	0.11
08/04/2019	1.51	1.05	1.37	0.53	1.42	0.18	1.43	0.33	0.37	2.25	0.83
09/04/2019	0.55	0.33	1.23	0.61	2.18	0.29	1.35	0.67	0.28	7	0.35
10/04/2019	28.35	0.27	0.49	1.65	1.24	0.13	1.79	0.51	0.32	2.08	0.33
11/04/2019	1.17	0.41	0.24	0.46	1.79	0.13	3.72	1.62	0.68	2.13	0.36
12/04/2019	0.72	0.59	0.47	0.43	1.06	0.2	3.14	1.62	0.3	2	0.28
13/04/2019	0.92	0.33	0.53	0.7	1.76	0.66	2.97	1.11	0.31	1.98	0.2
14/04/2019	0.82	0.16	0.47	0.24	1.58	0.18	0.32	0.21	0.07	1.01	0.1
15/04/2019	0.77	0.56	0.25	0.76	1.53	0.21	0.69	0.41	0.66	4.07	0.55
16/04/2019	2.02	1.17	0.29	0.65	1.68	0.13	8.09	0.93	0.04	4.53	0.55
17/04/2019	0.47	0.54	0.3	0.57	53.36	0.13	1.16	0.75	-	8.32	0.45
18/04/2019	1.03	0.28	0.8	0.46	1.71	0.23	2.21	0.39	-	1.81	0.82
19/04/2019	0.51	0.19	0.77	0.19	1.53	0.23	0.25	0.13	-	0.1	0.06
20/04/2019	1.09	0.2	0.84	0.27	1.13	0.11	0.21	0.26	-	0.14	0.11
21/04/2019	0.6	0.22	0.38	0.32	0.63	0.21	0.22	0.21	-	0.82	0.09
22/04/2019	0.47	0.24	0.27	0.3	1.55	0.13	0.22	0.15	-	0.1	0.06
23/04/2019	0.93	0.31	0.72	0.51	0.77	0.91	2.88	0.69	-	1.83	0.75
24/04/2019	0.76	0.3	0.38	0.46	1.84	0.08	2.07	1.7	-	1.42	0.34
25/04/2019	0.7	0.22	0.22	0.16	1.34	0.13	0.24	0.15	-	0.44	0.16
26/04/2019	0.69	0.24	0.36	0.46	1.61	0.18	0.98	0.23	-	2.65	0.09
27/04/2019	0.74	0.2	0.43	0.59	0.92	0.11	0.85	0.21	-	0.3	0.08
28/04/2019	0.53	0.24	0.24	0.13	1.2	0.13	0.23	0.26	-	0.1	0.09
29/04/2019	0.51	0.36	0.51	0.51	1.11	0.11	2.93	0.57	-	1.07	8.27
30/04/2019	3.04	0.64	0.3	0.54	1.06	0.13	1.74	1.08	-	1.47	1.14

Real-Time Vibration Results Comments:

3/04/2019, Castlereagh Boutique Hotel

Vibration monitor installed adjacent to Pitt St North site (Castlereagh Boutique Hotel) logged a vibration figure of 8.37mm/s (11:47pm, peak transverse) on 3 April 2019. The designated maximum allowable vibration figure for this site for cosmetic damage (7.5mm/s, on any axis).

An investigation was carried out by the senior environmental coordinator, superintendent & shift boss, and it was found that this exceedance was not attributable to TSE works due to the nature of the vibration frequencies measured not being consistent with construction activities and more likely to be from external interaction with the monitor.

4/04/2019, 243 Miller Street, North Sydney

Several exceedances occurred on 4/04/2019, the highest of which peaked at 42.52mm/s

After an investigation it is believed that these exceedances were caused by interference from a non-TSE related source. Most likely source was an object coming in contact with the cable or someone walking near the geophone. Hammering at the time took place in the shaft well below ground level and recorded consistent complying measurements. The property owners were contacted during the time of the exceedance and they reported that they had not felt any significant vibration that day.

7/04/2019, 243 Miller Street, North Sydney

Vibration exceedance on 07/04/2019. Maximum PPV recorded was 17.93mm/s

Exceedance deemed to be non-TSE related. It took place on Sunday where no high impact works were occurring. Exceedance likely caused by external interaction by resident or their dog with the geophone or cable.

10/04/2019, 22 Clarke Street, Crows Nest

Vibration monitor installed adjacent to Crows Nest site logged a vibration figure of 28.35mm/s (8:31am, peak radial) on 10 April 2019. The designated maximum allowable vibration figure for this site (25mm/s, on any axis).

An investigation was carried out between the senior environmental coordinator and the supervisor, and it was found that a worker was carrying equipment in close proximity of the geophone. The worker lost balance and contacted the geophone directly, causing this exceedance to occur.

16/04/2019, 50 Martin Place, Sydney

An alarm was received at 13:17pm on 16/04/2019. Upon receiving the alarm email, the site supervisor instructed works to stop. TSE works at the time of the alarm included excavation using a 30T excavator with a hammer operating within the southern shaft area.

The 30T excavator was stood down and moved away from the work area to conduct work further way from the bank (~20m from bank façade). Excavation methodology was reviewed and assessed prior to re-starting excavation within 10m of the bank. Smaller machinery (Brokk) will be used as an alternative to the larger 30T machine.

17/04/2019 243 Miller Street, North Sydney

Vibration exceedance on 17/04/2019. Maximum PPV recorded was 53.36mm/s.

Exceedance deemed to be non-TSE related. It took place on Sunday where no high impact works were occurring. Exceedance likely caused by external interaction by resident or their dog with the geophone or cable.

17/04/2019, Castlereagh Boutique Hotel

Vibration monitor installed adjacent to Pitt St North site (Castlereagh Boutique Hotel) logged a vibration figure of 8.32mm/s (1:22pm, peak transverse) on 17 April 2019. The designated maximum allowable vibration figure for this site for cosmetic damage (7.5mm/s, on any axis).

An investigation was carried out by the senior environmental coordinator, superintendent, it was found that this exceedance was not attributable to TSE works due to the nature of the vibration frequencies measured not being consistent with construction activities and more likely to be from external interaction with the monitor.