



airportlink
northernbusway
windsor to kedron
airport roundabout upgrade



Monthly Environmental Monitoring Report

November 2009

TABLE OF CONTENTS

1.0	Report Purpose and Scope	3
2.0	Monitoring Locations	3
3.0	Noise Monitoring	6
3.1	Overview of Noise Mitigation Measures	6
3.2	Noise Monitoring Results	7
3.3	Compliance with Noise Goals	64
4.0	Air Quality Monitoring	65
4.1	Overview of Air Quality Mitigation Measures	65
4.2	Air Quality Monitoring Results – Respirable Dust (PM10)	66
4.3	Air Quality Monitoring Results – Dust Deposition	73
4.4	Compliance with Air Quality Goals	74
5.0	Vibration Monitoring	76
5.1	Overview of Vibration Mitigation Measures	76
5.2	Vibration Monitoring Results	76
5.3	Compliance with Vibration Goals	78
6.0	Community Enquiries and Complaints	78

1.0 Report Purpose and Scope

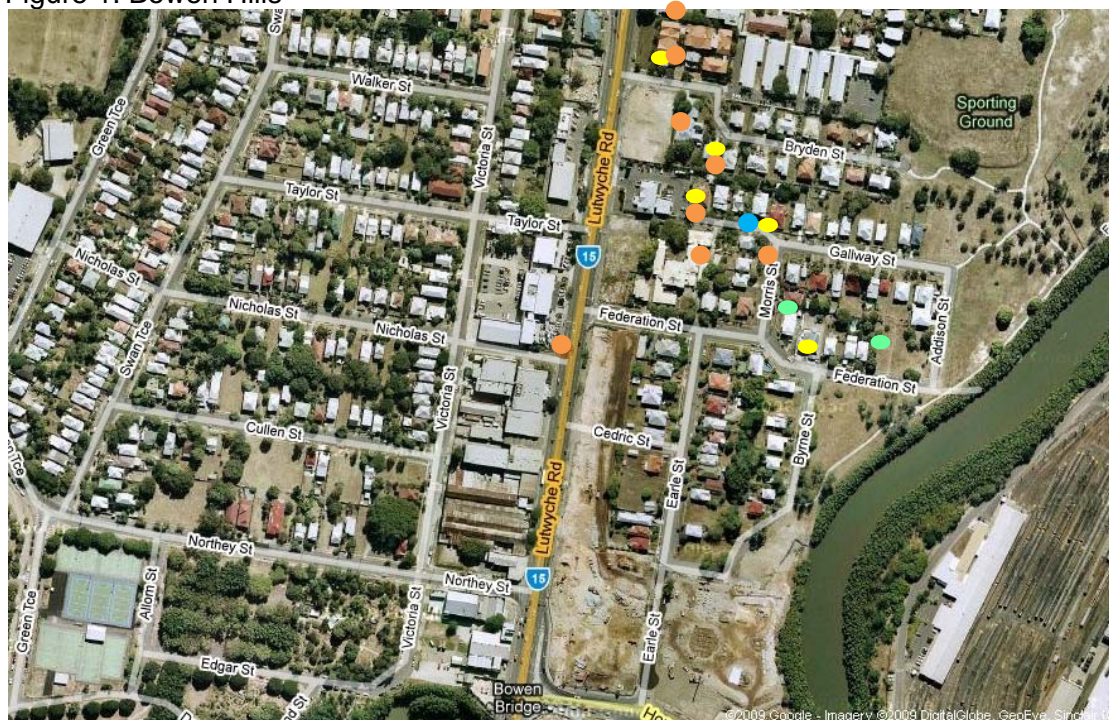
The report has been compiled to summarise the results of noise, air quality and vibration monitoring on the Airport Link and Northern Busway project. The report also compares those results with compliance thresholds for environmental harm, community nuisance and loss of amenity nominated by the Coordinator General (Change Report July 2008).

The monitoring data covered in this report is for the November 2009 reporting period, from 15th October to 15th November 2009.

2.0 Monitoring Locations

Several monitoring locations exist within the project area as described in Figures 1-5. Note that the aerial photograph overlays used in Figures 1-5 do not accurately portray the extent of the project's progress to November 2009, though do serve a useful purpose in relating the monitoring locations to existing structures and infrastructure.

Figure 1: Bowen Hills



Legend

- Noise (during construction)
- Vibration
- Air (PM₁₀)
- Air (Dust Deposition)

Note – these locations are indicative only

Figure 2: Truro Street



Legend

● Noise (during construction)

● Air (PM₁₀)

Note – these locations are indicative only

Figure 3: Northern Busway



Legend

● Noise (during construction)

● Air (PM₁₀)

Note – these locations are indicative only

Figure 4: Kedron



Legend

- Noise (during construction)
- Vibration
- Air (PM₁₀)
- Air (Dust Fallout)

Note – these locations are indicative only

Figure 5: Toombul



Legend

- Noise (during construction)
- Vibration
- Air (PM₁₀)
- Air (Dust Fallout)

3.0 Noise Monitoring

TJH undertakes regular monitoring of noise levels at a variety of locations across the project to help measure impacts and assist the team plan works and appropriate mitigations if required. The type and timing of monitoring is influenced by the activities being undertaken and relevant Noise Goals (inside buildings and residents living areas where allowed at night and during the day). TJH have also undertaken external monitoring to better understand the pre-construction baseline and acoustic environment during works to assist TJH conduct risk assessments and nominate appropriate mitigation measures.

Monitoring involves ‘attended’ monitoring (where a member of the TJH environment team is observing noise sources and durations whilst noise measurements are taken) and ‘unattended’ monitoring (where the sound level meter with a datalogger is installed and collected at a later time).

Noise monitoring priorities are mostly influenced by predictive modelling undertaken for construction activities, responses from members of the community, access to resident’s properties, availability of existing knowledge of the acoustic environment, and results of impact assessments undertaken by the TJH environment team and consultants.

Results of predictive modelling and monitoring are compared to Noise Goals nominated by the Coordinator General (Change Report July 2008) for the Airport Link and Northern Busway projects.

3.1 Overview of Noise Mitigation Measures

Generally the main strategies adopted in order to mitigate noise during construction works have included the following:

1. Undertake noise modelling for sections of works adjacent to sensitive receptors.
2. Reasonable and practical mitigation measures that have been implemented to date include the following:
 - a. Temporary noise barriers (precast concrete barrier and plywood):
 - i. Lutwyche Road (Lutwyche, Kedron)
 - ii. Truro Street on all sides of works
 - iii. Federation Street and Morris Street (Bowen Hills)
 - iv. Lasseter St / Arnott St (Kedron)
 - v. Stafford Rd (Kedron)
 - b. Temporary noise barrier (shipping container with plywood gap fillers, and extended sheet piles) installations:
 - i. Park Terrace / Lasseter St (Kedron)
 - ii. Perry Street, (Kedron)
 - iii. Formulae 1 Hotel (Bowen Hills)
 - iv. Stafford Road Site (Kedron)
 - c. Acoustic shed has been built around the tunnel portal at:
 - i. Truro Street
 - ii. Bowen Hills
 - d. Consultation with property owners prior to commencing works and during construction works.
 - e. Installation of mitigation measures at affected residents on a case-by-case basis.

- f. Investigating the early installation of permanent noise barriers at early stages.
- g. Investigation of alternative plant and equipment which inherently create less sound during operation.
- h. Acoustic shielding of various plant.
- i. Regular awareness, training and reinforcement of work behaviours of staff, subcontractors, spoil haulage drivers, and delivery drivers to prevent or minimise noise generation in work areas.
- j. Use of temporary acoustic treatment (e.g. sound curtains around onsite generators and access/ egress from sites).
- k. Installation of directional reversing alarms (eg 'squawkers') on plant (especially those working out of normal working hours).
- l. Planning of works to occur wherever possible to normal working hours.
- m. Planning one-way construction access roads where possible to minimise the amount of reversing.

3.2 Noise Monitoring Results

The results of TJH monitoring efforts are summarised for each project area in Tables 1a-c.

Table 1a: Noise Monitoring Results – Bowen Hills

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{Amax} (dBA)	L _{Amax} Goal (dBA)	Comments
20 Gallway Street, Windsor								
Queenslander style building on footings, Lounge room	3/11/2009 8:47pm-9:02pm	41.1	40	-	-	62.5	50	<p>Monitoring Type Attended monitoring, windows and doors closed.</p> <p>Noise Sources The dominant noise source was traffic noise, siren dishwasher and road works being performed by Non TJH construction.</p> <p>Discussion No Road header activities were audible throughout the monitoring period. The CoG goal was not exceeded throughout the monitoring period as a result of TJH construction activities</p> <p>Mitigation This resident has received mitigation to the individual property</p>
24 Gallway Street, Windsor								
Upstairs study at front of house, closest to Area 2	22/10/09 7:27PM-7:41PM	29.1	40	-	-	39.5	50	<p>Monitoring Type Attended, windows and doors closed.</p> <p>Noise Sources Road traffic noise (dominant noise source) and road headers</p> <p>Discussion Monitoring was to determine impacts from road heading in the north-bound tunnel to the west of the property. The road header was audible during these periods but at low levels. Traffic and train noise was the dominant source.</p> <p>Mitigation While these periods did not indicate an exceedance of the CoG Goals, mitigation measures have previously been installed on this property.</p>
Upstairs study at front of house, closest to Area 2	22/10/09 7:44PM – 7:56PM	26.3	40	-	-	36.5	50	

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{Amax} (dBA)	L _{Amax} Goal (dBA)	Comments
11 Bryden Street, Windsor								
Lounge Room with Fire Place	3/11/2009 7:35pm-7:50pm	36.7	40	-	-	47.6	50	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session.</p> <p>Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of internal and external interferences (traffic noise and fridge noise. There was no exceedance of the CoG goal during recordings of Road header which included outside noise source interference.</p>
Lounge Room with Fire Place	5/11/2009 7:40pm-7:55pm	41.4	40	-	-	55.2	50	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session.</p> <p>Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of non TJH works. There was no exceedance of the CoG goal during recordings of Road header which excluded internal and external noise source interference.</p>
15 Bryden Street, Windsor								
Living Room closest to area 2	26/10/09 4:09PM – 4:23PM	40.1	45	41.6	55	-	-	<p>Monitoring Type Attended, windows and doors closed.</p> <p>Noise Sources Road header noise (dominant noise source) and road traffic.</p> <p>Discussion This monitoring was undertaken to establish road header noise levels from tunnelling in the south-bound tunnel, which would not dramatically vary at night.</p>
Living Room closest to area 2	26/10/09 4:24PM – 4:38PM	40.7	45	42.2	55	-	-	

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{Amax} (dBA)	L _{Amax} Goal (dBA)	Comments
								Mitigation Residents have been relocated while tunnelling occurs in close proximity to the property.
Weather board, Split level Lounge Room	28/10/2009 9:26pm-9:41pm	36.8	40	-	-	51	50	Monitoring Type Attended monitoring, doors and windows closed. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of external interferences (traffic noise). There was no exceedance of the CoG goal during recordings as a result of TJH construction activities.
Lounge Room	2/11/2009 8:11pm-8:26pm	38.5	40	-	-	61.3	50	Monitoring Type Attended monitoring, doors and windows closed. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Although the Road header was able to be heard throughout the period, the elevated levels were a result of internal and external interferences (traffic noise, household noise / dogs, clock and music playing). Discussion There was no exceedance of the CoG goal during recordings as a result of TJH construction activities.
Lounge Room	04/11/2009 8:42pm-8:58pm	36.4	40	-	-	55.6	50	Monitoring Type Attended monitoring, doors and windows closed. Noise Sources The dominant noise sources throughout the monitoring period were Non TJH noises such as traffic and internal noise. Discussion No TJH tunnelling operations were audible

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{Amax} (dBA)	L _{Amax} Goal (dBA)	Comments
								throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Lounge Room	5/11/2009 7:40pm-7:55pm	41.4	40	-	-	55.2	50	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources The dominant noise sources throughout the monitoring period were non TJH noises such as traffic and internal noise (house members speaking and watching TV in another room).</p> <p>Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal during recordings as a result of TJH construction activities.</p>
Lounge Room	10/11/2009 8:08pm-8:22pm	36.7	40	-	-	60.3	50	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources The dominant noise sources throughout the monitoring period were Non TJH noises such as traffic and internal noise</p> <p>Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.</p>
Enclosed Veranda Adjacent to Main Bedroom	12/11/2009 7:56pm-8:10pm	56.3	40	-	-	84.2	50	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session.</p> <p>Discussion Although the Road header was able to be heard during the period, the elevated levels were a result</p>

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{Amax} (dBA)	L _{Amax} Goal (dBA)	Comments
								of non TJH works. Exceedance of the CoG goal during recordings of Road header included internal and external noise source interference. Noise exceedances of the CoG goal identified during attended monitoring were caused by traffic noise, residents and noise from a desk fan in an adjacent room.

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
Windsor International Hotel, Windsor								
Room 233 closest to Bryden St	23/10/09 9:05AM – 9:19AM	37.7	45	38.8	55	-	-	Monitoring Type Attended, windows and doors closed. This room is one of the closest to the north-bound tunnel alignment. Noise Sources Road traffic noise (dominant noise source) and road headers Discussion Monitoring was to determine impacts from road heading in the north-bound tunnel adjacent to the motel. No exceedances were recorded in these periods.
Room 233 closest to Bryden St	23/10/09 9:20AM – 9:34AM	38.1	45	38.1	55	-	-	
Room 233 closest to Bryden St	22/10/09 8:22PM – 8:36PM	41.1	40	-	-	48.0	50	Monitoring Type Attended, windows and doors closed. This room is one of the closest to the north-bound tunnel alignment. Noise Sources Road traffic noise (dominant noise source) and road headers. Discussion Monitoring was to determine impacts from road heading in the north-bound tunnel adjacent to the motel. The exceedance in the first period was due to non-construction sources.
Room 233 closest to Bryden St	22/10/09 8:37PM – 8:51PM	38.1	40	-	-	47.7	50	
Room 233 (2 nd Storey Unit facing South)	21/10/2009 3.00pm- 3.15pm	40.5	45	41.6	55	-	-	Monitoring Type Attended monitoring Noise Sources

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								The dominant noise source throughout the period was traffic noise. Discussion No noise interferences from TJH sources were audible during monitoring. There was no exceedance of the CoG goal.
Room 233 (2 nd Storey Unit facing South)	21/10/2009 3:16pm-3:31pm	40.7	45	42.8	55	-	-	Monitoring Type Attended monitoring, doors and windows closed. Noise Sources Regenerative noise from the Road header operating was audible intermittently during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise, motel noise). There was no exceedance of the CoG goal.
Room 233 (2 nd Storey Unit facing South)	21/10/2009 8:16pm-8:31pm	38.1	40	-	-	52.6	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise, motel noise). There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 233 (2 nd Storey Unit facing South)	21/10/2009 8:51pm-9:05pm	42.6	40	-	-	59.1	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise, motel noise).

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 233 (2 nd Storey Unit facing South)	21/10/2009 10:23pm-10:37pm	33.2	40	-	-	43.8	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Bolter operating was audible during a period of the monitoring session. Discussion Although the Bolter was able to be heard during the noise monitoring session the Roder header was not. The elevated levels were a result of the external interferences nonrelated to TJH work (traffic noise, motel noise). There was no exceedance of the CoG goal
Room 233 (2 nd Storey Unit facing South)	21/10/2009 10:39pm-10:54pm	32.7	40	-	-	48.1	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Bolter operating was audible during a period the monitoring session. Discussion Although the Bolter was able to be heard during the noise monitoring session the Roder header was not. The elevated levels were a result of the external interferences nonrelated to TJH work (traffic noise, motel noise). There was no exceedance of the CoG goal
Room 233 (2 nd Storey Unit facing South)	22/10/2009 4:01am-4:16am	32.4	40	-	-	41.7	50-	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Bolter operating was audible during a period of the monitoring session. Discussion Although the Bolter was able to be heard during the noise monitoring session the Roder header was not. The elevated levels were a result of the external interferences nonrelated to TJH work (traffic noise, motel noise). There was no exceedance of the CoG goal

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
Room 233 (2 nd Storey Unit facing South)	22/10/2009 9.30am-9.45am	35.6	45	37.1	55	-	-	<p>Monitoring Type Attended monitoring.</p> <p>Noise Sources The dominant noise source was traffic noise. Rock bolting, Hammering and the Road header scratching the wall of the tunnel were intermittently audible throughout the monitoring period.</p> <p>Discussion There was no exceedance of the CoG goal.</p>
Room 233 (2 nd Storey Unit facing South)	22/10/2009 10.01am-10.16am	35.8	45	41.4	55	-	-	<p>Monitoring Type Attended monitoring, doors and windows closed.</p> <p>Noise Sources The dominant noise source was traffic noise. Rock bolting was occurring intermittently throughout the monitoring period.</p> <p>Discussion There was no exceedance of the CoG goal.</p>
Underground Carpark (Eastern Side of Motel)	22/10/2009 11.24am-11.39am	41.4	45	45.6	55	-	-	<p>Monitoring Type Attended monitoring.</p> <p>Noise Sources The dominant noise source was traffic noise and internal motel noise (Cleaners, fridge, residents).</p> <p>Discussion No TJH activities were audible throughout the monitoring period. The CoG goal was not exceeded throughout the monitoring period.</p>
2 nd Storey Hallway (Western Side)	22/10/2009 1.13pm-1.28pm	43.4	45	44.6	55	-	-	<p>Monitoring Type Attended monitoring.</p> <p>Noise Sources The dominant noise sources during the monitoring period were traffic noise and internal motel noise.</p> <p>Discussion The elevated levels were as a result of these dominant noise sources. The Road header operated briefly during this monitoring period. There was no exceedance of the CoG goal.</p>

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
2 nd Storey Hallway (Eastern Side)	22/10/2009 4.20pm-4.35pm	36.3	45	37.6	55	-	-	Monitoring Type Attended monitoring. Noise Sources The dominant noise source throughout the monitoring period was the Road header. Traffic noise was occurring throughout the whole monitoring period. Discussion There was no exceedance of the CoG goal.
Room 232(2 nd Storey Unit)	28/10/2009 8:09pm-8:24pm	37.0	40	-	-	49.6	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal.
Room 232(2 nd Storey Unit)	28/10/2009 9:26pm-9:41pm	36.7	40	-	-	51	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 232(2 nd Storey Unit)	28/10/2009 9:51pm-10:06pm	35.3	40	-	-	54.5	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session.

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 232(2 nd Storey Unit)	28/10/2009 11:10pm-11:25pm	30.9	40	-	-	43.6	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal.
Room 232(2 nd Storey Unit)	29/10/2009 12:08am-12:23am	34.8	40	-	-	48.1	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from Rock bolting and the Road header scratching the wall of the tunnel were recorded during the monitoring period. Discussion Although noise from Rock bolting and the Road header was able to be heard during the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal.
Room 232(2 nd Storey Unit)	29/10/2009 2:26am-2:41 am	37.3	40	-	-	48.8	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard during the period, the elevated levels were a result of the external interferences (traffic noise). There was no

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								exceedance of the CoG goal.
Room 232(2 nd Storey Unit)	29/10/2009 3:44am-3:59am	37.3	40	-	-	44.9	50	Monitoring Type Attended monitoring Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session Discussion Although the Road header was able to be heard during the period, the elevated levels were a result of the external interferences (traffic noise). There was no exceedance of the CoG goal.
Room 205 (Second Storey Unit facing South)	02/11/2009 7.12pm-7.27pm	33.8	40	-	-	43.7	50	Monitoring Type Attended monitoring Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion There was no exceedance of the CoG goal.
Room 205 (Second Storey Unit facing South)	02/11/2009 7.48pm-8.03pm	33.1	40	-	-	51.3	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 205 (Second Storey Unit facing South)	03/11/2009 6.39pm-6.54pm	31.9	40	-	-	43.3	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion Mitigation Measures No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								CoG goal.
Room 205 (Second Storey Unit facing South)	03/11/2009 7:14pm-7:29pm	33.1	40	-	-	44.7	50	Monitoring Type Attended monitoring Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal.
Room 205 (Second Storey Unit facing South)	03/11/2009 8:22pm-8:37pm	32.8	40	-	-	49.8	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal.
Room 116 (First Floor)	4/11/2009 7:13pm-7:27pm	35.1	40	-	-	56.4	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal
Room 116 (First Floor)	04/11/2009 7:55pm-8:10pm	37.3	40	-	-	46.4	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								CoG goal.
Room 116 (First Floor)	04/11/2009 8:24pm-8:39pm	35.6	40	-	-	50.4	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal
Room 316 (Second Story Unit)	5/11/2009 7:01pm-7:16pm	36.5	40	-	-	45.2	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of internal and external interferences (traffic and internal motel noise). There was no exceedance of the CoG goal during recordings of Road header which included outside noise source interference.
Room 316 (Second Story Unit)	5/11/2009 8:08pm-8:19pm	37.0	40	-	-	56.6	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal.
Room 316 (Second Story Unit)	5/11/2009 8:34pm-8:49pm	37.0	40	-	-	57.1	50	Monitoring Type Attended monitoring. Noise Sources

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								Regenerative noise from the Road header operating was audible during the monitoring session Discussion Although the Road header was able to be heard throughout the period, the elevated levels were a result of non TJH works. There was no exceedance of the CoG goal during recordings of Road header which included and excluded internal and external noise source interference.
Room 222 (2 nd Storey Unit)	6/11/2009 6:46pm-7:01pm	35.5	40	-	-	57	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 222 (2 nd Storey Unit)	6/11/2009 7:23pm-7:38pm	36.1	40	-	-	50.8	50	Monitoring Type Attended monitoring Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 222 (2 nd Storey Unit)	6/11/2009 7:51pm-8:06pm	36.1	40	-	-	52.4	50	Monitoring Type Attended monitoring. Noise Sources Regenerative noise from the Road header operating was audible during the monitoring session. Discussion Although the Road header was able to be heard during the period, the elevated levels were a result of non TJH works. Exceedance of the CoG goal during recordings of

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								Road header included internal and external noise source interference. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 230 (2 nd Storey Unit)	11/11/2009 6:12pm-6:26pm	37.9	45	38.5	55	-	-	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal
Room 230 (2 nd Storey Unit)	11/11/2009 6:57pm-7:11pm	37.2	40	-	-	51.7	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 230 (2 nd Storey Unit)	11/11/2009 7:52pm-8:06pm	36.7	40	-	-	52.9	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 230 (2 nd Storey Unit)	11/11/2009 8:26pm-8:40pm	38.3	40	-	-	60.2	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 216 (2 nd Storey Unit)	12/11/2009 6:35pm-6:49pm	33.9	40	-	-	50.9	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 216 (2 nd Storey Unit)	12/11/2009 7:19pm-7:33pm	35.1	40	-	-	54.2	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 216 (2 nd Storey Unit)	12/11/2009 8:57pm-9:11pm	35.2	40	-	-	55.5	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 109 (1 st Storey Unit)	13/11/2009 6:10pm-6:24pm	38.2	45	38.6	55	-	-	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise Discussion

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	L _{AMAX} (15 min) (dBA)	CoG Goal L _{AMAX} (15 min) (dBA)	Comments
								No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal
Room 109 (1 st Storey Unit)	13/11/2009 6:47pm-7:01pm	33.0	40	-	-	50.3	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal as a result of TJH construction activities.
Room 109 (1 st Storey Unit)	13/11/2009 7:52pm-8:06pm	33.7	40	-	-	44.7	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal
Room 109 (1 st Storey Unit)	13/11/2009 8:37pm-8:51pm	34.1	45	34.7		47.8	50	Monitoring Type Attended monitoring. Noise Sources The dominant noise sources throughout the monitoring period were traffic and internal motel noise. Discussion No TJH tunnelling operations were audible throughout this monitoring period. There was no exceedance of the CoG goal

Table 1b: Noise Monitoring Results – Kedron

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
32 Homebush Road, Kedron						
Bed Room	16/10/2009 9:08-9:22am	47.4	40	43.3	50	<p>Monitoring Type Attended – windows and doors open.</p> <p>Noise Source Construction works audible during monitoring include piling in area CC210 North and CC216. Other noise sources included traffic along Gympie rd, Homebush rd and gardeners working in backyard of premises.</p> <p>Discussion The monitoring session was undertaken with the windows open. With large influence from the gardeners using a drill and other tools. Exceedance is a result of a combination of TJH and NON TJH activities</p> <p>Mitigation Measures Mitigation measures currently installed include sixteen forty foot containers along the Brookfield boundary of the CC216 site. Commencement of the permanent noise wall has commenced as of 18/11/2009.</p>
Bed Room	16/10/2009 9:50-10:04am	38.6	40	39.8	50	<p>Monitoring Type Attended – windows closed and door open</p> <p>Noise Source Construction works audible during monitoring include piling in area CC210 North and CC216. Other noise sources included traffic along Gympie rd, Homebush rd and gardeners working in backyard of premises.</p> <p>Discussion The monitoring session was undertaken with the windows closed. With large influence from construction activities and traffic on Gympie rd.</p> <p>Mitigation Measures Mitigation measures currently installed include sixteen forty foot containers along the Brookfield boundary of the CC216 site. Commencement of the permanent noise wall has commenced as of 18/11/2009.</p>

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
673 Lutwyche Road, Lutwyche						
Living room	13/11/2009 13:46-14:00pm	41.2	45	42.3	55	<p>Monitoring Type Attended – windows and doors closed.</p> <p>Noise Source Background noise: computer keys tapping, children at school nearby and Lutwyche Rd traffic Construction noise: cutting & sawing, rock breaking and piling. Other noise sources include aeroplane, emergency siren and resident talking</p> <p>Discussion The two fifteen minute monitoring sessions recorded both background and construction noise (refer to noise source sub-heading above). During this 15 minute monitoring session the main noise sources evident consisted of background noise.</p> <p>Mitigation Measures Air conditioning</p>
Living room	13/11/2009 14:07-14:21pm	48.4	45	49.6	55	<p>Monitoring Type Attended – windows and doors open.</p> <p>Noise Source Background noise: computer keys tapping, children at school nearby and Lutwyche Rd traffic Construction noise: cutting & sawing, rock breaking and piling. Other noise sources include aeroplane, emergency siren and resident talking</p> <p>Discussion The windows and doors were opened for the second 15 minute monitoring session. Audible noise sources included both background and construction noise. Although there is a Laeq exceedence, background and construction Laeq and LA10 values do not vary significantly when both sessions are analysed.</p> <p>Mitigation Measures Ongoing consultation, air conditioning and upcoming noise wall construction.</p>
29 Jack Street, Gordon Park						

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
Living room	15/11/2009 17:06-17:20pm	32.7	40	31	50	Monitoring Type Attended – windows and doors closed. Noise Source Traffic from Gympie rd, Stafford rd and Jack st, aeroplane and neighbours vacuum. Discussion During the 30 minute monitoring session no construction noise was audible. Noise recorded includes that listed above. Mitigation Measures Ongoing consultation with resident
Living room	15/11/2009 17:21-17:35pm	30.9	40	30.1	50	
130 Kedron Park Road, Woolloowin						
Laundry	16/11/2009 12:18-12:32pm	51.5	45	52.9	55	Monitoring Type Attended – windows and doors open. Noise Source Lutwyche Rd traffic, general construction noise, generators, rock breaking and resident talking Discussion Monitoring was undertaken in the outside laundry with the windows and doors open with large influence from Lutwyche rd traffic, resident speaking and construction noise. Exceedance is a result of local traffic and interference with monitoring by resident Mitigation Measures Double glazing will be installed on the western side of the resident's premises. A noise wall is to be constructed along the boundary of the Kedron Park Hotels car park.
Laundry	16/11/2009 12:33-12:49pm	50.2	45	50.9	55	
104 Kent Street, Woolloowin						
Downstairs living area	29/10/2009 11:23-11:37am	50.1	45	49.7	55	Monitoring Type Internal attended – doors and windows open. Noise Source A combination of both TJH and non-TJH noise sources including a Plane, traffic, car, excavator, EWP beep, dog barking, drill/ augur were heard. Discussion Both TJH and Non-TJH noise sources contributed to the exceedance. Mitigation Measures

Location	Monitoring Period	Average L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	Average L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						Ongoing consultation with resident and installation of 5m acoustic fence
Downstairs living area	29/10/2009 11:48am – 12:02pm	36.5	45	37.4	55	<p>Monitoring Type Internal attended – doors and windows closed.</p> <p>Noise Source Non-TJH noise sources included the resident, local traffic, birds and the resident's fridge. TJH sources included an Augur/ Drill, Fridge and excavator.</p> <p>Discussion No exceedance recorded.</p> <p>Mitigation Measures Ongoing consultation with resident and installation of 5m acoustic fence</p>
Upstairs living area	29/10/2009 11:23-11:37am	50.3	45	50.9	55	<p>Monitoring Type Internal attended – doors and windows open.</p> <p>Noise Source TJH sources included drilling and an excavator; non-TJH sources included local traffic, birds, a dog Barking and an aeroplane.</p> <p>Discussion Both TJH and Non-TJH noise sources contributed to the exceedance.</p> <p>Mitigation Measures Ongoing consultation with resident and installation of 5m acoustic fence</p>
Upstairs living area	29/10/2009 11:48am – 12:02pm	40.5	45	40.5	55	<p>Monitoring Type Internal attended – doors and windows closed.</p> <p>Noise Source Local traffic including car, trucks, buses and horns as well as birds, aeroplanes and dogs barking contributed to non-TJH noise sources. TJH noise sources included drilling and an excavator.</p> <p>Discussion No exceedance recorded.</p> <p>Mitigation Measures Ongoing consultation with resident and installation of 5m acoustic fence</p>

Table 1c: Noise Monitoring Results – Toombul

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
82 Elliot Street, Clayfield						
Main bedroom, 1 st Level (Queenslander)	29/10/2009 1:43-1:57pm	46.2	45	47.2	55	<p>Monitoring Type Attended internal monitoring, windows and doors open.</p> <p>Noise Sources General construction (humming from cranes, jet grouting & D-walls, reverse beeper) plus non-TJH sources (Resident talking, dogs, train, plane).</p> <p>Discussion Monitoring indicates that exceedances are from both TJH and external sources. Windows were open during the monitoring session as requested by the resident.</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers. Resident is currently in discussions with TJH Community Relations Team in regard to additional mitigation for the property.</p>
	29/10/2009 2:02-2:16pm	44.8	45	45.1	55	<p>Monitoring Type Attended internal monitoring, windows and doors closed.</p> <p>Noise Sources General construction (humming from cranes, jet grouting & D-walls, piling rig) plus non-TJH sources (resident talking, dogs, train).</p> <p>Discussion Monitoring indicates that the COG goals are being met.</p> <p>Mitigation Measures Include a 6m noise wall and double stack containers. Resident is currently in discussions with TJH Community Relations Team in regard to additional mitigation for the property.</p>
Parkside Apartments, Parkland Street, Toombul						
Living area, Level 6	30/10/2009 10:00-10:15am	43.1	45	43.5	55	<p>Monitoring Type Attended internal monitoring, windows and doors closed</p> <p>Noise Sources General construction (piling, banging, reverse beeping) plus non-TJH sources (traffic, horns, train, air-conditioning, birds).</p> <p>Discussion Monitoring indicates that the COG goals are being met.</p> <p>Mitigation Measures</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road.
	30/10/2009 10:20-10:35am	43.2	45	43.6	55	Monitoring Type Attended internal monitoring, windows and doors closed Noise Sources General construction (piling) plus non-TJH sources (traffic, train, air-conditioning, birds, plane). Discussion Monitoring indicates that the COG goals are being met. Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road.
	30/10/2009 1:36-1:51pm	42.7	45	43.1	55	Monitoring Type Attended internal monitoring, windows and doors closed Noise Sources Non-TJH sources (traffic, air-conditioning, train). Discussion Monitoring indicates that the COG goals are being met. No TJH noise sources were recorded. Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road
	30/10/2009 1:56-2:11pm	42.8	45	43.2	55	Monitoring Type Attended internal monitoring, windows and doors closed Noise Sources General construction (banging, piling) plus non-TJH sources (traffic, train, and air-conditioning). Discussion Monitoring indicates that the COG goals are being met. Mitigation Measures Predictive modelling indicates that no fixed mitigation is required for this site. Heavy traffic influence from Sandgate Road.
70 Kalinga Street, Clayfield						
Living area, 1 st level	26/10/2009 8:07am-8:21am	33.6	45	34.1	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						General construction (banging, reverse beeping, crane) plus non-TJH sources (bush cutter, plane, train, house creaking). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
	26/10/2009 11:01am-11:15am	32.9	45	36.0	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (banging, reverse beeping, horn, and crane) plus non-TJH sources (train, wind, crows). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
	26/10/2009 2:58pm – 3:12pm	38.6	45	39.26	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (jackhammer, reverse beeper, horn, banging, crane) plus non-TJH sources (train, motorbike). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
Living area, 1 st Level	2/11/2009 8:07-8:21am	45.9	45	46.2	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (compressor, banging, crane, reverse beeping) plus non-TJH sources (train, house creaking, loud talking outside). Discussion:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						Monitoring indicates that exceedances are from both TJH and external sources. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
	2/11/2009 1:23-1:37pm	36.7	45	37.1	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (compressor, reverse beeping, banging, piling, crane) plus non-TJH sources (train, traffic). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
	2/11/2009 2:04-2:18pm	46.4	45	46.7	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (compressor, piling, reverse beeper, banging, crane) plus non-TJH sources (traffic, train). Discussion: Monitoring indicates that exceedances are from both TJH and external sources. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
33 Kalinga Street, Toombul						
Living Area, 2 nd Level	2/11/2009 10:18-10:32am	44.2	45	44.7	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (compressor, reverse beeping, banging, piling) plus non-TJH sources (truck idling outside house, loud talking outside house, birds, traffic, train).

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						<p>Discussion: Monitoring indicates that COG goals are being met. A truck not associated with the project was idling outside the property in which monitoring was being undertaken, this elevated noise levels.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
	2/11/2009 1:47-2:01pm	49.5	45	49.4	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (Compressor, reverse beeper, banging, piling) plus non-TJH sources (train, traffic, next door).</p> <p>Discussion: Exceedances as a result of TJH and external sources. Elevated noise levels can largely be attributed to noise from the neighbours who were moving their lawn during the monitoring period.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
	2/11/2009 2:27-2:41pm	43.6	45	44.0	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (piling, reverse beeper, banging, compressor and compactor) plus non-TJH sources (traffic, train, talking, house moving in wind).</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Living Area, 2 nd Level	9/11/2009 9:05 -9:19 am	47.2	45	47.6	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						<p>General construction (piling, reverse beeper, banging, crane, asphaltting) plus non-TJH sources (traffic, train, talking, house moving in wind, wind, birds).</p> <p>Discussion: Exceedances as a result of TJH and external sources. After further investigation it was established that along with normal TJH operations, the end of Lewis Street was being asphalted – reinstatement works. Major noise source of this disturbance was from heavy traffic, stationary trucks and machinery operations. This is a temporary disturbance. External sources came from next door neighbour undertaking yard work, crows, trains and windy conditions.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
	9/11/2009 9:24 – 9:38 am	50.7	45	51.35	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (piling, reverse beeper, banging, crane, asphaltting) plus non-TJH sources (traffic, train, house moving in wind, wind, plane, birds).</p> <p>Discussion: Exceedances as a result of TJH and external sources. After further investigation it was established that along with normal TJH operations, the end of Lewis Street was being asphalted – reinstatement works. Major noise source of this disturbance was from heavy traffic, stationary trucks and machinery operations. This is a temporary disturbance. External sources relating to elevated noise levels mainly came from crows, windy conditions and trains.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
	9/11/2009 10:15 – 10:30 am	49.0	45	49.9	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						<p>General construction (piling, reverse beeper, banging, crane, asphaltting) plus non-TJH sources (traffic, train, house moving in wind, birds, wind 'inside noises' – talking, walking, banging, slamming doors,).</p> <p>Discussion: Exceedances as a result of TJH and external sources. After further investigation it was established that along with normal TJH operations, the end of Lewis Street was being asphalted – reinstatement works. Major noise source of this disturbance was from heavy traffic, stationary trucks and machinery operations. This is a temporary disturbance. In addition to this two external sources greatly contributed to the elevated noise levels. The first was the presence of an electrician who was restoring power to 33 Kalinga Street. He was responsible for banging, continually opening and closing doors, talking on his mobile and walking around inside the house. The second were a large number of loud crows close by and windy conditions.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied</p>
83 Stuckey Road, Clayfield						
Living area, 1 st Level	6/11/2009 10:36-10:50am	41.9	45	43.1	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (crane, banging, reverse beeper) plus non-TJH sources (TV, inside noise, birds, train, neighbours).</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. TJH has installed air-conditioning in the property and relocated the Resident during noisy works.</p>
	6/11/2009 10:55-11:09am	42.2	45	43.2	55	<p>Monitoring Type: Attended internal monitoring, windows and doors closed</p> <p>Noise Sources: General construction (crane, reverse beeper, piling, banging) plus non-TJH sources (TV, birds, inside noise, house creaking, train, plane).</p> <p>Discussion:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. TJH has installed air-conditioning in the property and relocated the Resident during noisy works.
	6/11/2009 1:33-1:47pm	44.1	45	41.3	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (crane, banging, horn, reverse beeper) plus non-TJH sources (TV, next door noise, inside noise, plane, train, talking). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. TJH has installed air-conditioning in the property and relocated the Resident during noisy works.
	6/11/2009 1:51-2:05pm	41.7	45	42.4	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (crane, banging, reverse beeper, horn) plus non-TJH sources (next door noise, inside noise, train, plane, bird). Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. TJH has installed air-conditioning in the property and relocated the Resident during noisy works.
63 Jackson Street, Clayfield						
Study, 1 st Level	11/11/2009 2:06-2:20pm	40.2	45	38.4	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: General construction (piling augur) plus non-TJH sources (BCC, internal noise, plane, dog, car starting, train). BCC were doing curb works along Jackson street during the monitoring – these works are not part of the APL Project. Noise sources from BCC Included: bobcat (tracking up and down street), concrete works, reversing beepers and workers. Internal noise caused by the resident included: typing, moving around, taps, kitchen and opening doors. Discussion:

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{A10} (15 min) (dBA)	CoG Goal L _{A10} (15 min) (dBA)	Comments
						Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall.
	11/11/2009 2:21-2:35pm	38.5	45	36.2	55	Monitoring Type: Attended internal monitoring, windows and doors closed Noise Sources: Only non-TJH sources (BCC, internal noise, talking in street, talking next door, car starting, train) were observed during the monitoring period. BCC were doing curb works along Jackson street during the monitoring – these works are not part of the APL Project. Noise sources from BCC Included: bobcat (tracking up and down street), concrete works, reversing beepers and workers. Internal noise caused by the resident included: typing, moving around, taps, kitchen and opening doors. Discussion: Monitoring indicates that COG goals are being met. No noise from TJH observed. Mitigation Measures: Include a 6m noise wall.

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
70 Kalinga Street, Clayfield						
Living area, 1 st level	26/10/2009 11:50pm-12:04am	38.8	40	39.2	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: Heavy Rain Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. No additional mitigation measures were recommended due to night works

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						failing to commence due to heavy rain for the shift period.
Living area, 1 st level	27/10/2009 10:10-10:24pm	32.5	40	33.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation required into cause of crane banging noise.</p>
	27/10/2009 10:31-10:45pm	32.5	40	33.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation required into cause of crane banging noise.</p>
Living area, 1 st level	28/10/2009 12:03-12:17am	32.8	40	35.0	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise
	28/10/2009 12:21-12:35am	32.6	40	34.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified. Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise
Living area, 1 st level	29/10/2009 9:56-10:10pm	31.1	40	32.5	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified. Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise
	29/10/2009 10:13-10:27pm	29.5	40	30.9	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General construction noise including generators, compressors, front-end

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						<p>loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise</p>
Living area, 1 st level	30/10/2009 10:59-11:13pm	32.6	40	34.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Generators and Lighting Towers to be replaced by ultra silent and all machinery identified with beepers to be replaced with squawkers before night works commence. Further investigation continues into cause of crane banging noise</p>
	30/10/2009 11:16-11:30pm	31.5	40	33.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, Exact noise sources has not been determined, Beepers, Generators</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						education). Generators and Lighting Towers to be replaced by ultra silent and all machinery identified with beepers to be replaced with squawkers before night works commence. Further investigation continues into cause of crane banging noise
68 Kalinga Street, Clayfield						
Front Bedroom, 2 nd Level	20/10/2009 2:48-3:02am	39.5	40	63.0	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Monitoring undertaken during Kalinga Park night shift.</p> <p>Noise Sources: General construction (crane, saw, reversing beeper, air compressor, banging, bell skip).</p> <p>Discussion: Exceedances as a result of TJH activities. TJH HSE Advisor is present on night shift to identify sources of exceedances and mitigate onsite.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Bedroom, 2 nd Level	22/10/2009 11:43-11:47pm	40.8	40	60.8	45	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Monitoring undertaken during Kalinga Park night shift.</p> <p>Noise Sources: General construction (crane, bell skip, loader, drill banging) plus non-TJH sources (train).</p> <p>Discussion: Exceedances as a result of TJH activities. TJH HSE Advisor is present on night shift to identify sources of exceedances and mitigate onsite.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Bedroom, 2 nd Level	23/10/2009 10:42-10:59pm	40.5	40	65.8	45	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Monitoring undertaken during Kalinga Park night shift.</p> <p>Noise Sources: General construction (crane, bell skip, banging, hose, grinder, crane) plus non-TJH sources (radio).</p> <p>Discussion: Exceedances as a result of TJH activities. TJH HSE Advisor is present on night shift to identify sources of exceedances and mitigate onsite.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Living Area, 1 st Level	27-10-2009 12:16-12:30am	33.9	40	35.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation required into crane banging noise.</p>
	27-10-2009 12:34-12:45am	35.8	40	36.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation required into cause of crane banging noise
Front Living Area, 1 st Level	28-10-2009 11:17-11:31pm	35.8	40	37.2	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise</p>
	28-10-2009 11:35-11:49pm	35.4	40	37.0	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area, 1 st Level	29-10-2009 11:31-11:45pm	31.5	40	33.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise</p>
	29-10-2009 11:48pm-12:02am	31.1	40	32.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Further investigation continues into cause of crane banging noise.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area, 1 st Level	30-10-2009 10:20-10:34pm	33.9	40	34.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Generators and Lighting Towers to be replaced by ultra silent and all machinery identified with beepers to be replaced with squawkers. Further investigation continues into cause of crane banging noise</p>
	30-10-2009 10:37-10:51pm	33.1	40	35.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education).Generators and Lighting Towers to be replaced by ultra silent and all machinery identified with beepers to be replaced with squawkers. Further investigation continues into cause of crane banging noise</p>
33 Kalinga Street, Clayfield						

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	2-11-2009 11:07-11:21pm	32.4	40	34.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, Banging of loader bucket, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education) e.g. loader operator asked to stop banging bucket to remove mud stuck to inside of bucket. Further investigation continues into cause of crane banging noise.</p>
	2-11-2009 11:28-11:42pm	32.2	40	34.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, Banging of loader bucket, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education) e.g. loader operator asked to stop banging bucket to remove mud stuck to inside of bucket. Further investigation continues into cause of crane banging noise.</p>
Front Living Area 1 st Floor	3-11-2009 1:51-2:05am	30.0	40	31.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						<p>Banging of crane, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Staffs were informed during the tool box meeting to position the exhaust of all lighting towers and generators towards the office block therefore directing noise away from residents. It was discovered on this day that the banging noises caused by the crane was a result of the fore ropes clanging on the gantry of the crane mast during movement of the bell skip. Five wooden blocks were secured between the gantry and the fore ropes resting on the gantry thus eliminating the banging noise produced during movement of the bell skip.</p>
	3-11-2009 2:08-2:22am	31.5	40	33.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Staff were informed during the tool box meeting to position the exhaust of all lighting towers and generators towards the office block therefore directing noise away from residents. It was discovered on this day that the banging noises caused by the crane was a result of the fore ropes clanging on the gantry of the crane mast during movement of the bell skip. Five wooden blocks were secured between the gantry and the fore ropes resting on the gantry thus eliminating the banging noise produced during movement of the bell skip.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	4-11-2009 11:30-11:44pm	32.5	40	33.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trucks use of Exhaust Breaks, Revving of Engines, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). All truck drivers have been instructed to refrain from using exhaust breaks on site and within the immediate residential area. To reduce trucks from revving their engines to pull heavy loads out of CC410, the access ramp has been cut to smaller degree of incline.</p>
	4-11-2009 11:48pm-12:02am	32.3	40	34.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trucks use of Exhaust Breaks, Revving of Engines, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). All truck drivers have been instructed to refrain from using exhaust breaks on site and within the immediate residential area. To reduce trucks from revving their engines to pull heavy loads out of CC410, the access ramp has been cut to smaller degree of incline.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	5-11-2009 12:15-12:29am	29.7	40	31.2	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Rock-breaking used by 8ton Excavator, Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Discuss with project engineer the need to conduct rock- breaking during night works. As this work was not essential and could be done during the day, rock breaking works were immediately halted.</p>
	5-11-2009 12:36-12:48am	30.8	40	32.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Rock-breaking used by 8ton Excavator, Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Discuss with project engineer the need to conduct rock breaking during night works. As this work was not essential and could be done during the day, rock breaking works were immediately halted.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	6-11-2009 3:09-3:23am	32.1	40	36.0	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise, crane</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.</p>
	6-11-2009 3:30-3:44am	32.3	40	33.6	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise, crane</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.</p>
Front Living Area 1 st Floor	7-11-2009 12:02-12:16am	32.5	40	34.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						<p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.</p>
	7-11-2009 12:19-12:33am	32.7	40	34.2	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.</p>
Front Living Area 1 st Floor	8-11-2009 11:48pm-12:02am	31.5	40	32.9	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader , placement of rocks into CC410</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure could be introduced to reduce the noise created during the dumping of rocks into CC410. NOTE: this does not form part of the general work activities conducted on site and was restricted to one night.
	8-11-2009 12:06-12:20am	32.2	40	33.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General construction noise including generators, compressors, front-end loader ,crane, placement of rocks into CC410 were also recorded.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education).</p>
Front Living Area 1 st Floor	9-11-2009 11:33-11:47pm	32.6	40	46	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General Construction Noise (Generators, Excavators), Cranes, House's Windows Rattling</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
	9-11-2009 11:52pm-12:06am	31.5	40	41.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trains</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
Front Living Area 1 st Floor	11-11-2009 12:14-12:28am	30.6	40	50.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General Construction Noise (Generators, Excavators), Cranes, Neighbours, Police Sirens</p> <p>Discussion: Monitoring indicates that COG goals are being met. Exceedences came from non-TJH sources</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>
	11-11-2009 12:32-12:46am	31.3	40	46.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trains, Angle Grinder</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	13-11-2009 3:03-3:17 am	26.2	40	32.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General Construction Noises (Generators, Excavators), Cranes, Bats/Birds</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation required as noise was mostly from non- TJH sources.</p>
	13-11-2009 3:21-3:35am	26.6	40	38	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General Construction Noises(Generators, Excavators), Cranes, Banging, Bats/Birds</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation required as noise was mostly from non- TJH sources.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Front Living Area 1 st Floor	14-11-2009 7:42- 7:56 pm	30.9	40	44.5	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: Train Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation required as noise was mostly from non- TJH sources.
	14-11-2009 8:02-8:16pm	29.6	40	40.5	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General Construction Noises(Generators, Excavators), Cranes, Train Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation required as noise was mostly from non- TJH sources.
Front Living Area 1 st Floor	15/11/2009 11:47pm- 12:01am	28.3	40	29.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General Construction Noise(Generators, Excavators), Crane, Bats/Birds Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation required as noise was mostly from non- TJH sources.
Front Living Area 1 st Floor	16/11/2009 12:05-12:19am	26.2	40	27.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: General Construction Noise (Generators, Excavators), Crane</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other mitigation reqd.</p>
44 Lewis Street, Clayfield						
Under House Enclosed Brick, Garage/Open Space	2/11/2009 1:45-1:59am	33.6	40	35.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of crane, banging of loader bucket, General construction noise including generators, compressors, front-end loader .</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education) e.g. loader operator asked to stop banging bucket to remove mud stuck to inside of bucket. Further investigation continues into cause of crane banging noise</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
	2/11/2009 2:02-2:16am	31.8	40	34.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, Banging of Loader Bucket, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education) e.g. loader operator asked to stop banging bucket to remove mud stuck to inside of bucket. Further investigation continues into cause of crane banging noise</p>
Under House Enclosed Brick, Garage/Open Space	3/11/2009 2:32-2:46am	29.7	40	31.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, General construction noise including generators, compressors, front-end loader and other noises related to TJH works that could not be identified.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Staff were informed during the tool box meeting to position the exhaust of all lighting towers and generators towards the office block therefore directing noise away from residents. It was discovered on this day that the banging noises caused by the crane was a result of the fore ropes clanging on the gantry of the crane mast during movement of the bell skip. Five wooden blocks were secured between the gantry and the fore ropes resting on the gantry thus eliminating the banging noise produced during movement of the bell skip.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
	3/11/2009 2:50-3:04am	28.5	40	30.1	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Banging of Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Staff were informed during the tool box meeting to position the exhaust of all lighting towers and generators towards the office block therefore directing noise away from residents. It was discovered on this day that the banging noises caused by the crane was a result of the fore ropes clanging on the gantry of the crane mast during movement of the bell skip. Five wooden blocks were secured between the gantry and the fore ropes resting on the gantry thus eliminating the banging noise produced during movement of the bell skip.</p>
Under House Enclosed Brick, Garage/Open Space	4/11/2009 12:20-12:34am	31.5	40	33.4	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trucks use of Exhaust Breaks, Revving of Engines and General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). All truck drivers have been instructed to refrain from using exhaust breaks on site and within the immediate residential area. To reduce trucks from revving their engines to pull heavy loads out of CC410, the access ramp has been cut to smaller degree of incline.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
	4/11/2009 12:40-12:54am	34.2	40	35.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Trucks use of Exhaust Breaks, Revving of Engines, Crane, General construction noise including generators, compressors, front-end</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). All truck drivers have been instructed to refrain from using exhaust breaks on site and within the immediate residential area. To reduce trucks from revving their engines to pull heavy loads out of CC410, the access ramp has been cut to smaller degree of incline.</p>
Under House Enclosed Brick, Garage/Open Space	5/11/2009 1:03-1:17am	30.1	40	31.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Rock breaking used by 8ton excavator, general construction noise, crane</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Discuss with project engineer the need to conduct rock breaking during night works. As this work was not essential and could be done during the day, rock breaking works were immediately halted.</p>
	5/11/2009 1:23-1:37am	30.4	40	31.7	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Rock breaking used by 8ton excavator, general construction noise, crane</p> <p>Discussion:</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). Discuss with project engineer the need to conduct rock breaking during night works. As this work was not essential and could be done during the day, rock breaking works were immediately halted.
Under House Enclosed Brick, Garage/Open Space	6/11/2009 4:00-4:14am	32.2	40	33.7	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General construction noise, crane Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.
	6/11/2009 4:18-4:32am	32.2	40	33.8	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General construction noise, crane Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} 15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
						monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.
Under House Enclosed Brick, Garage/Open Space	7/11/2009 12:41-12:55am	31.4	40	33.8	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure introduced as noise generated during night works is below COG goals however nightly noise monitoring is maintained to identify activities that create noise so that specialised mitigation measures can be applied.</p>
	7/11/2009 12:58-1:12am	31.7	40	33.5	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Under House Enclosed Brick, Garage/Open Space	8/11/2009 12:30-12:44am	28.9	40	31.5	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Crane, General construction noise including generators, compressors, front-end loader.</p> <p>Discussion Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure could be introduced to reduce the noise created during the dumping of rocks into CC410. NOTE: this does not form part of the general work activities conducted on site and was restricted to one night.</p>
	8/11/2009 12:47-1:01am	31.4	40	33.3	50	<p>Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring</p> <p>Noise Sources: Crane, General construction noise including generators, compressors, front-end loader, rocks being dumped into CC410.</p> <p>Discussion: Monitoring indicates that COG goals are being met.</p> <p>Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied. Discussing with staff on ways of reducing noise, (tool box meeting/staff education). No other additional mitigation measure could be introduced to reduce the noise created during the dumping of rocks into CC410. NOTE: this does not form part of the general work activities conducted on site and was restricted to one night.</p>

Location	Monitoring Period	L _{Aeq} (15 min) (dBA)	CoG Goal L _{Aeq} (15 min) (dBA)	L _{Amax} (15 min) (dBA)	CoG Goal L _{Amax} (15 min) (dBA)	Comments
Under House Enclosed Brick, Garage/Open Space	9/11/2009 12:18-12:32am	30.5	40	35.6	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General Construction Noise (Generators, Excavators) Cranes Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
	9/11/2009 12:36-12:50am	30.4	40	35.3	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General Construction Noise (Generators, Excavators), Cranes Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.
Under House Enclosed Brick, Garage/Open Space	10/11/2009 1:03-1:17	30.3	40	32.2	50	Monitoring Type: Attended internal monitoring, windows and doors closed. Night time monitoring Noise Sources: General Construction Noise (Excavators, Generators), Cranes, Geckos Discussion: Monitoring indicates that COG goals are being met. Mitigation Measures: Include a 6m noise wall and double stack containers. The property was purchased by DMR prior to commencement of the project and is unoccupied.

3.3 Compliance with Noise Goals

Exceedances of the Coordinator General's Noise Goals have been found during this monitoring period at a number of locations, these include:

- Kedron
 - 130 Kedron Park Road
 - 673 Lutwyche Road
 - 32 Homebush Road
 - 104 Kent Road
- Toombul
 - 82 Elliot Street
 - 33 Kalinga Street
 - 70 Kalinga Street
 - 68 Kalinga St

Construction activities are attributable to some of these exceedances though noise generated by existing traffic and some other localised noise sources have also contributed. i.e combined with construction activities. It should also be noted that in some instances the windows and doors were open to the premises at the requested of the resident, this greatly effects attenuation of the property when attempting to compare internal noise goals. An investigation into each of these environmental non-conformances has been, or is being undertaken, the results and/or recommendations of which will be forwarded to CNI, and affected property occupier/owner where relevant. An end of month NCR will be raised to cover the above mentioned exceedances of the noise goals where they have been attributed to AirportLink Project works.

4.0 Air Quality Monitoring

TJH undertakes regular monitoring of air quality levels at a variety of locations across the project to help measure impacts and assist the team to plan works and appropriate mitigations if required.

Monitoring involves sampling of dust deposition (monthly), and real-time respiratory dust (PM10) at a number of locations nominated by the Coordinator General. Real-time monitoring of Total Suspended Particulates is also occurring at selected locations to alert TJH teams of any emerging dust exceedances and implement appropriate mitigations to prevent an exceedance of the CoG Air Quality Goals.

Results of monitoring are compared to Air Quality Goals nominated by the Coordinator General (Change Report October 2008) for the Airport Link and Northern Busway projects.

4.1 Overview of Air Quality Mitigation Measures

The key strategies adopted to mitigate dust and air quality impacts during construction works have included the following:

1. Continual use of water carts during the following activities:
 - i. Bulk earthworks
 - ii. Haul roads
 - iii. Car parks and hardstands
 - iv. Clearing and grubbing (Airport Roundabout)
2. Investigation of appropriate soil binders (Water and Aeolian erosion prevention techniques).
3. Covering of haul vehicles.
4. Stabilisation of cleared areas with hardstand materials such as concrete and crushed rock.
5. Hydro-mulching and laying geofab to batters.
6. Reduction of cleared / exposed soils with concrete paving and geo-fabric installation.
7. Road sweepers.
8. Design and future construction enclosed spoil handling facilities at portals.

4.2 Air Quality Monitoring Results – Respirable Dust (PM10)

The results of PM10 monitoring is shown in Tables 2a-h and their associated figures.

Table 2a: PM₁₀ Results – Bowen Hills

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
5 Morris Street, Windsor			
15/10/09	65.8	50	CoG Exceedance – Brisbane wide exceedances recorded.
16/10/09	35.1	50	
17/10/09	27.3	50	
18/10/09	25.7	50	
19/10/09	17.1	50	
20/10/09	15.0	50	
21/10/09	15.7	50	
22/10/09	15.9	50	
23/10/09	20.1	50	
24/10/09	18.0	50	
25/10/09	22.4	50	
26/10/09	22.5	50	
27/10/09	22	50	
28/10/09	24	50	
29/10/09	13.3	50	
30/10/09	10.4	50	
31/10/09	10.7	50	
1/11/09	9.7	50	
2/11/09	9.1	50	
3/11/09	8.9	50	
4/11/09	12.3	50	
5/11/09	16.7	50	
6/11/09	17.5	50	
7/11/09	10.4	50	
8/11/09	11.6	50	
9/11/09	11.4	50	
10/11/09	11.3	50	
11/11/09	12.0	50	
12/11/09	14.6	50	
13/11/09	33.5	50	
14/11/09	39.2	50	
15/11/09	13.3	50	

Note: AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. The dust gauge is located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

PM₁₀ Daily Results - 5 Morris Street, Bowen Hills

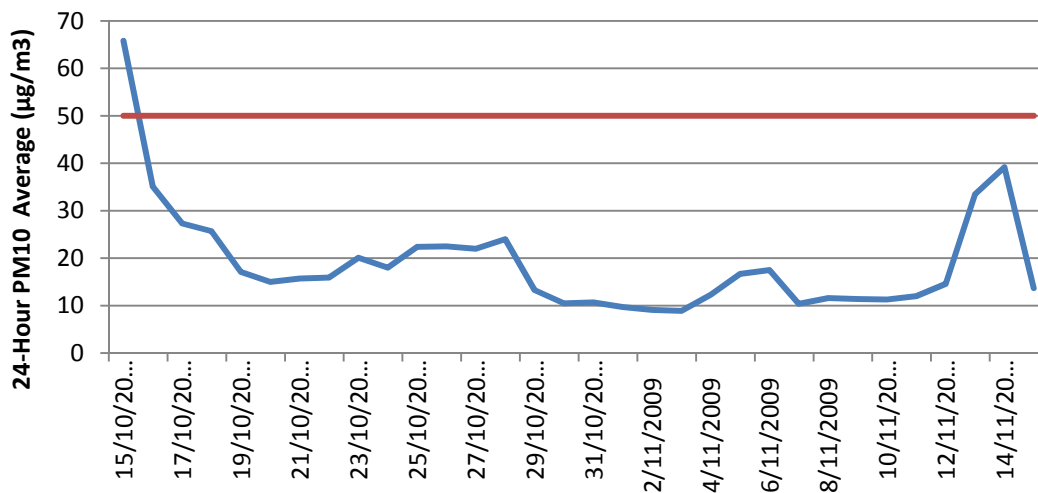


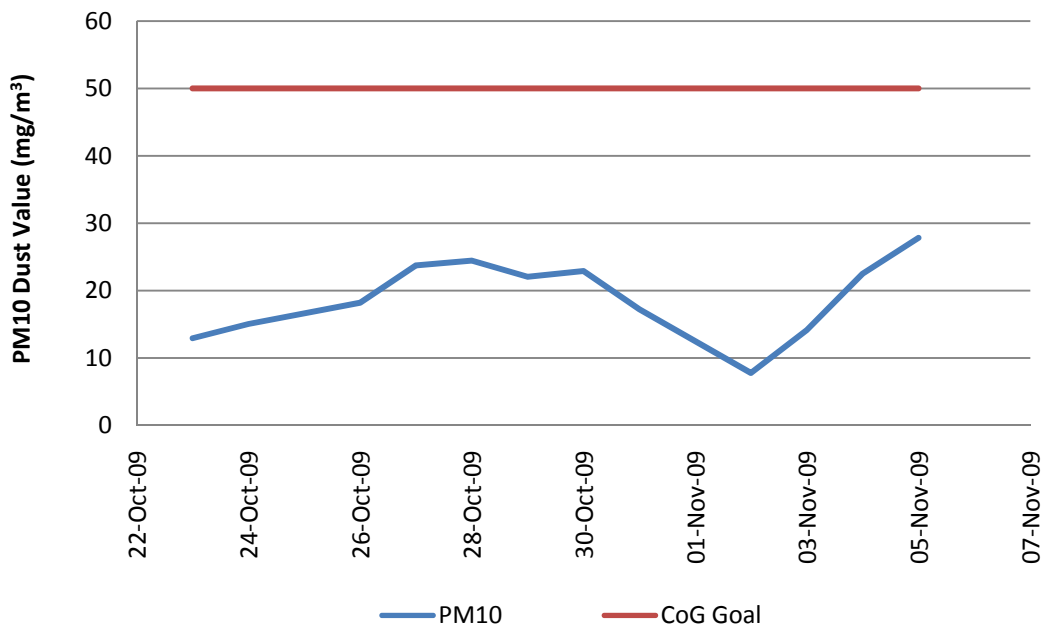
Table 2a: PM₁₀ Results – Truro Street

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
26/10/09	13.25	50	Limited data was recorded and saved for this month of monitoring due to fault with the existing equipment. A new piece of monitoring equipment has been installed to monitor PM10 readings commencing from the 16/11/09.
27/10/09	9	50	

Table 2c: PM₁₀ Results – Lutwyche Site Office, CC701, Chalk St Site

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
631 Lutwyche Road, Lutwyche			
16/10/2009	48	50	Monitor located at 631 Lutwyche Road which was directly across the road from CC701 boundary. Monitor was placed in backyard of property. Higher levels are attributed to proximity to Lutwyche Road. No CoG goal exceedances were recorded.
17/10/2009	40	50	
18/10/2009	37	50	
CC701			
23/10/2009	13	50	Monitor located at 57 Lamington Avenue for period 23/10/2009- 5/11/2009. Monitor was placed in backyard of the property which is directly adjacent to site boundary. No CoG goal exceedances were recorded during this monitoring period.
24/10/2009	15	50	
26/10/2009	18	50	
27/10/2009	24	50	
28/10/2009	24	50	
29/10/2009	22	50	
30/10/2009	23	50	
31/10/2009	17	50	
2/11/2009	8	50	
3/11/2009	14	50	
4/11/2009	23	50	
5/11/2009	28	50	

57 Lamington Avenue Dust Monitoring (23/10/2009-5/11/2009)



631 Lutwyche Road Dust Monitoring (16/10/2009-18/10/2009)

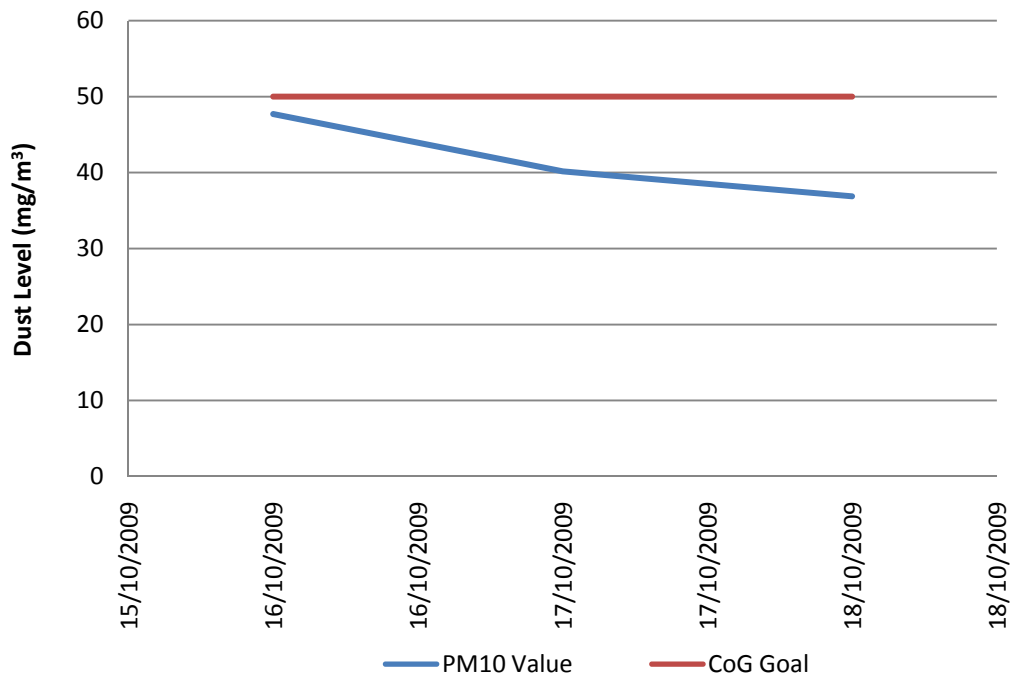


Table 2d: PM₁₀ Results – 20 Erskine Street, Kedron

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³ /day)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
Fri 16/10/2009	25.2	50	
Sat 17/10/2009	25.7	50	
Sun 18/10/2009	16.1	50	
Mon 19/10/2009	13.8	50	
Tues 20/10/2009	11.6	50	
Wed 21/10/2009	9.4	50	
Thu 22/10/2009	7.9	50	
Fri 23/10/2009	7.8	50	
Sat 24/10/2009	7.9	50	
Sun 25/10/2009	9.5	50	
Mon 26/10/2009	17.8	50	
Tue 27/10/2009	12	50	
Wed 28/10/2009	14	50	
Thu 29/10/2009	14.8	50	
Fri 30/10/2009	6.7	50	
Sat 31/10/2009	9.5	50	
Sun 1/11/2009	7.9	50	
Mon 2/11/2009	5.7	50	
Tue 3/11/2009	6.8	50	
Wed 4/11/2009	7.1	50	
Thu 5/11/2009	13.9	50	
Fri 6/11/2009	15.4	50	
Sat 7/11/2009	12.3	50	
Sun 8/11/2009	9.2	50	
Mon 9/11/2009	9.8	50	
Tue 10/11/2009	9.9	50	
Wed 11/11/2009	9.7	50	
Thu 12/11/2009	9.9	50	
Fri 13/11/2009	12.7	50	
Sat 14/11/2009	56.2	50	Exceedance – NCR Raised. This exceedance was likely due to a combination of TJH activities and Brisbane experiencing high city-wide PM10 levels – as shown by the EPA air quality monitoring stations. Although these levels are not exceeding the dust guidelines, the levels recorded are 15-25 µg/m ³ higher than average.
Sun 15/11/2009	9	50	

PM10 Daily Results - 20 Erskine St, Kedron

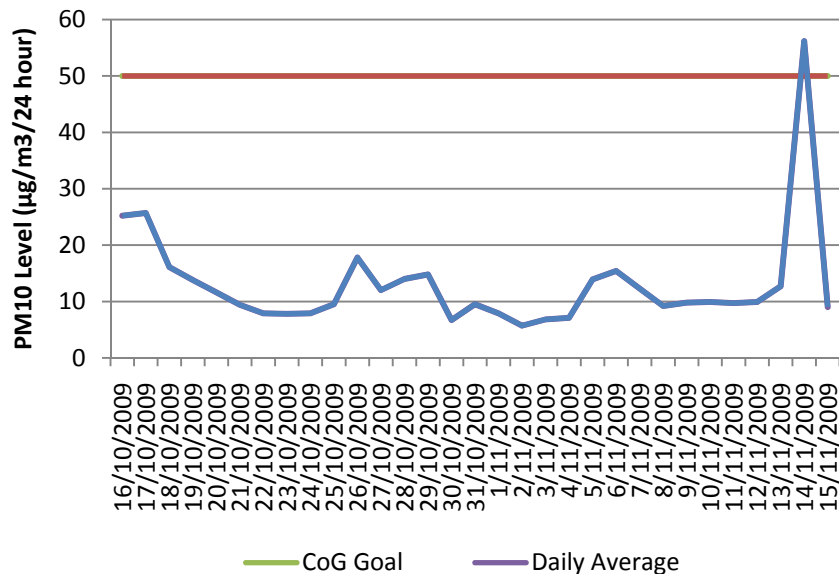


Table 2e: PM₁₀ Results – Kedron State High School Oval

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³ /day)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
Sat 7/11/2009	11	50	
Sun 8/11/2009	16	50	
Mon 9/11/2009	16	50	
Tue 10/11/2009	10	50	
Wed 11/11/2009	14	50	
Thu 12/11/2009	10	50	
Fri 13/11/2009	29	50	
Sat 14/11/2009	10	50	
Sun 15/11/2009	17	50	

Note: AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. The dust gauge is located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

Table 2i: PM₁₀ Results – Kalinga St, Toombul

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³ /day)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
16/10/2009	37.2	50	
17/10/2009	21.6	50	
18/10/2009	21.5	50	
19/10/2009	17.1	50	
20/10/2009	17.9	50	
21/10/2009	13.2	50	
22/10/2009	11.4	50	
23/10/2009	13.2	50	
24/10/2009	10.7	50	
25/10/2009	17.6	50	
26/10/2009	18.7	50	
27/10/2009	13.5	50	
28/10/2009	14.7	50	
29/10/2009	12.9	50	
30/10/2009	10.6	50	

31/10/2009	9.4	50	
1/11/2009	6.6	50	
2/11/2009	6.5	50	
3/11/2009	6.4	50	
4/11/2009	16.5	50	
5/11/2009	17.5	50	
6/11/2009	18.5	50	
7/11/2009	14.9	50	
8/11/2009	15.3	50	
9/11/2009	16.8	50	
10/11/2009	10.1	50	
11/11/2009	13.6	50	
12/11/2009	11.6	50	
13/11/2009	53.8	50	Exceedance can be attributed to a combination of TJH activities and high levels of atmospheric dust recorded across Brisbane on the 13 th of November 2009. The EPA monitoring stations located at the CBD, South Brisbane and Woolloongabba all recorded high PM10 levels.
14/11/2009	15.9	50	Meets goals
15/11/2009	17.9	50	Meets goals

Note: AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. The dust gauge is located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

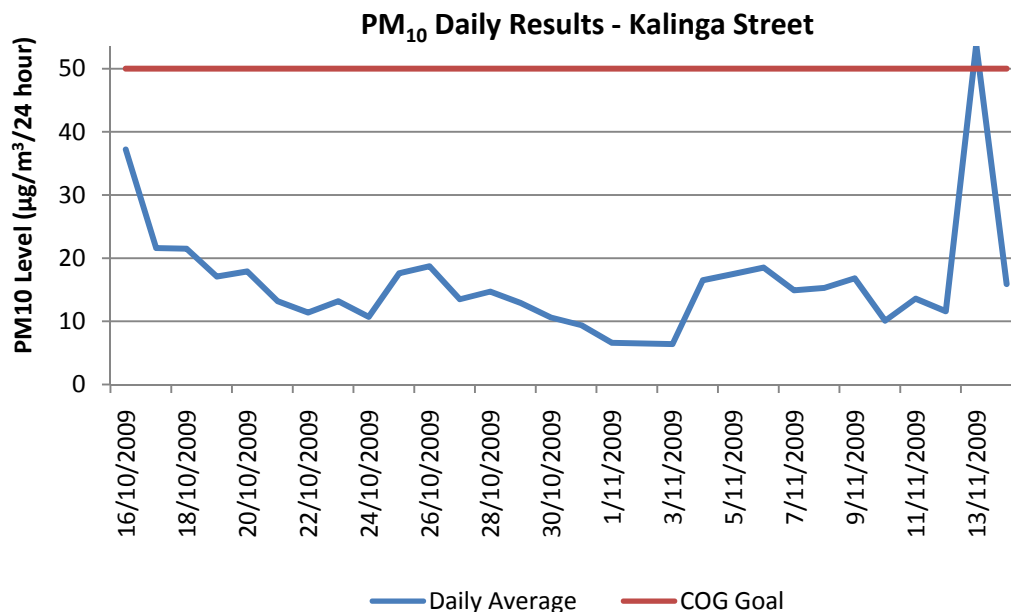
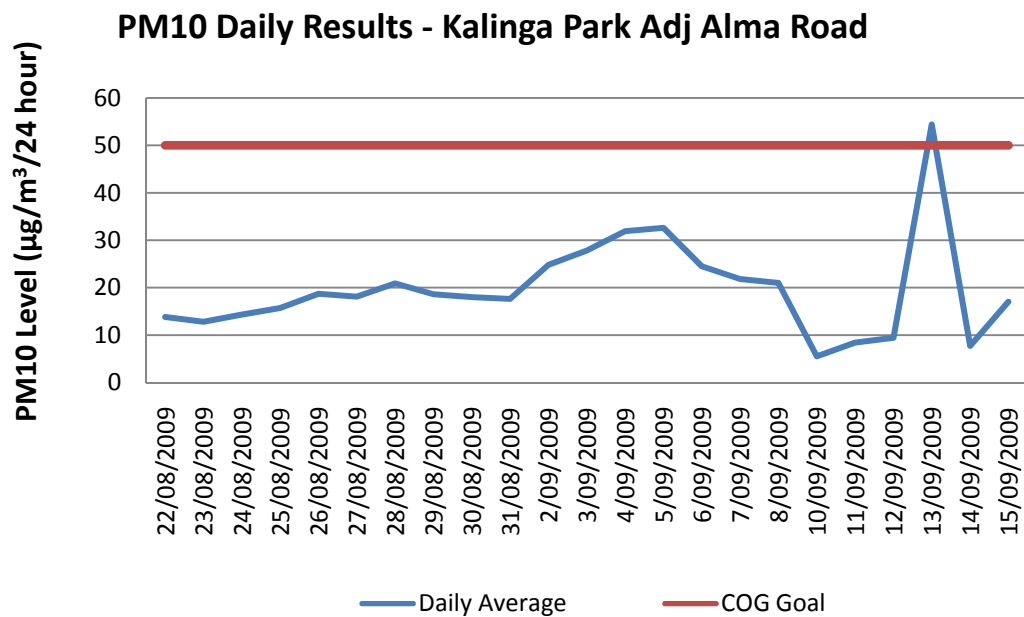


Table 2j: PM₁₀ Results for Alma Rd (Kalinga Park), 5 Mabel St, 1/77 Stuckey Road, Toombul

Monitoring Period (midnight-midnight)	Daily PM ₁₀ (µg/m ³ /day)	CoG PM ₁₀ Goal (µg/m ³ /day)	Comments
Alma Road (Kalinga Park), Toombul			
22/10/2009	13.8	50	
23/10/2009	12.8	50	
24/10/2009	14.3	50	
25/10/2009	15.7	50	

26/10/2009	18.7	50	
27/10/2009	18.1	50	
28/10/2009	20.9	50	
29/10/2009	18.6	50	
30/10/2009	18.0	50	
31/10/2009	17.6	50	
2/11/2009	24.8	50	
3/11/2009	27.8	50	
4/11/2009	31.9	50	
5/11/2009	32.6	50	
6/11/2009	24.5	50	
7/11/2009	21.8	50	
8/11/2009	21.0	50	
10/11/2009	5.5	50	
11/11/2009	8.4	50	
12/11/2009	9.4	50	
13/11/2009	54.4	50	Exceedance can be attributed to a combination of TJH activities high levels of atmospheric dust recorded across Brisbane on the 13 th of November 2009. The EPA monitoring stations located at the CBD, South Brisbane and Woolloongabba all recorded high PM10 levels.
14/11/2009	7.7	50	
15/11/2009	17.0	50	



4.3 Air Quality Monitoring Results – Dust Deposition

Dust deposition monitoring is undertaken on a monthly basis using a bottle and funnel placed 2m ± 0.2m above ground level in accordance with Australian Standard AS 3580.10.1: 2003 and at locations nominated by the Coordinator General.

Table 3a: Dust Deposition Results – Bowen Hills

Location and Monitoring Period (midnight-midnight)	Dust Fallout (g/m ² /mth)	CoG Dust Fallout Goal (g/m ² /mth)	Comments
5 Morris St 7/10/09 – 7/11/09	2.8	4	Within CoG Goals
Site Office 7/10/09 – 7/11/09	2.4	4	Within CoG Goals
100 Campbell St 7/10/09 – 7/11/09	-	4	Sample had been removed by unknown persons, no result available.
Queensland Newspapers 29/09/09 – 29/10/09	1.9	4	Within CoG Goals

Note: - All samples assessed at a NATA accredited laboratory.

- AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. The 5 Morris St and 100 Campbell St dust gauges are located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

Table 3b: Dust Deposition Results – Kedron

Location and Monitoring Period (midnight-midnight)	Dust Fallout (g/m ² /mth)	CoG Dust Fallout Goal (g/m ² /mth)	Comments
Woolloowin State School 16/10/09 - 15/11/09	1.8	4	Complies with Goals
Kedron DES Site 16/10/09 - 15/11/09	1.5	4	Complies with Goals
Erskine St, Kedron 16/10/09 - 15/11/09	1.8	4	Complies with Goals
Perry st, Kedron 16/10/09 - 15/11/09	5.6	4	Exceeds Goals

Note: - All samples assessed at a NATA accredited laboratory.

- AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. The Woolloowin, Perry and DES dust gauges are located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

Table 3c: Dust Deposition Results – Toombul

Location and Monitoring Period (midnight-midnight)	Dust Fallout (g/m ² /m th)	CoG Dust Fallout Goal (g/m ² /mth)	Comments
68 Kalinga Street 21/09/2009 – 21/10/2009	6.3	4	The increased levels over the September/October monitoring period can be primarily attributed to a combination of TJH activities and abnormal series of elevated atmospheric dust levels that swept through Brisbane during this period. The increase is from the previous month is 3.9 g/m ² /month (Kalinga) and 2.8 g/m ² /month (Kalinga Park Adj Alma). The increase at the Toombul Indoor Sports Complex is 1.2 g/m ² /month to 2.5 g/m ² /month – this location still met the COG Goal
Kalinga Park Adj Alma Rd 21/09/2009 – 21/10/2009	6.5	4	
Toombul Indoor Sports Complex – Bage Street 21/09/2009 – 21/10/2009	2.5	4	

Note: - All samples assessed at a NATA accredited laboratory.

- AS 3580.10.1: 2003 requires a statement to be included with results when all of the siting recommendations are not able to be satisfied. All dust gauges are located such that a 120 degree skyward field is partially obscured by a building or treeline. Full satisfaction of AS recommendations is not possible to satisfy gauge security and access provisions.

4.4 Compliance with Air Quality Goals

The following exceedances of CoG air quality goals were recorded this month:

Bowen Hills:

Dustfall Limits:

Nil

PM10 Levels:

5 Morris St – A 24-hour average of 65.8µg/m³ was recorded at this monitoring station on 15/10/2009, which above the CoG goal of 50ug/m³. Investigations have revealed that Brisbane experienced high city-wide PM10 levels on this date, with background PM10 levels at DERM's CBD (114.9 µg/m³) and South Brisbane (139.7 µg/m³) monitoring stations in excess of the CoG goal for the same monitoring period.

Kedron:

Dustfall Limits: Perry St - The dust fallout gauge recorded a level of 5.6g/m²/m against the goal of 4g/m²/m. Initial investigations have found that the gauge is placed within a residents premises which has an unsealed driveway frequently used to store a number of vehicles throughout the day. TJH is further investigating the exceedance and implementing dust mitigation measures.

PM10 Levels:

Erskine Ave – On the 14/11/2009 the air quality monitor recorded a 24hr average PM10 levels of 56.2ug/m³.

Initial investigations indicate that dust levels in the wider Brisbane area were elevated, hence having influence on the hourly averages recorded at the Erskine St on the 14/11/2009. Although the levels do not exceed the dust guideline, the elevated levels contribute to the total 24hr average recorded.

Toombul:

Dustfall Limits:

- 68 Kalinga Street
 - There was an increase of 3.9 g/m²/month when compared to the previous month. The increased levels over the September/October monitoring period can be primarily attributed to a combination of TJH activities and an abnormal series of elevated dust levels that swept through Brisbane during this period.
- Kalinga Park Adj Alma Road
 - There was an increase of 2.8g/m²/month when compared to the previous month. The increased levels over the September/October monitoring period can be primarily attributed to a combination of TJH activities and an abnormal series of elevated dust levels that swept through Brisbane during this period.

PM10 Levels:

- Kalinga Park Adj Alma Road
 - Exceedence can be attributed to a combination of TJH activities and high levels of atmospheric dust recorded across Brisbane on the 13th of November 2009. The EPA monitoring stations located at the CBD, South Brisbane and Woolloongabba all recorded high PM10 levels.
- 68 Kalinga Street
 - Exceedence can be attributed to a combination of TJH activities and high levels of atmospheric dust recorded across Brisbane on the 13th of November 2009. The EPA monitoring stations located at the CBD, South Brisbane and Woolloongabba all recorded high PM10 levels.

NCRs have been raised against the exceedances identified above and forwarded to CNI and CoG.

5.0 Vibration Monitoring

TJH undertakes monitoring of vibration levels at a variety of locations across the project to help measure impacts and assist the team plan works and appropriate mitigations if required. Monitoring involves measuring peak particle velocity (mm/s) at a number of sensitive receptors.

Results of monitoring are compared to Vibration Goals nominated by the Coordinator General (Change Report October 2008) for the Airport Link and Northern Busway projects.

5.1 Overview of Vibration Mitigation Measures

The key strategies adopted during this monitoring period to mitigate vibration impacts during construction works have included:

1. Predictive modelling of anticipated risks and impacts.
2. Building condition surveys of properties which are likely to experience vibration levels in excess of the levels for minimal risk of cosmetic damage outlined in the CoG Report.
3. Selection of alternative construction equipment / methodology where possible
4. Review of monitoring data for the activities undertaken and checking the robustness of the predictive modelling.
5. Consideration when purchasing or hiring equipment that will meet the CoG goals.

5.2 Vibration Monitoring Results

Monitoring has been undertaken at a variety of sites along the Airport Link Project alignment this month. Results are detailed in Tables 5a-b.

Table 5a: Vibration Monitoring Results Summary – Bowen Hills

Location	Monitoring Period	Peak Particle Velocity* (mm/s)	CoG Vibration Goal (mm/s)	Comments
14 Gallway St	15/10/09 – 10/11/09	1.22mm/s	5mm/s (continuous)	Monitoring for rock hammering (day-time) and tunnelling (day and night-time)
15 Bryden St	15/10/09 – 10/11/09	0.86mm/s	5mm/s (continuous)	Monitoring for rock hammering (day-time) and tunnelling (day and night-time)
Arthritis Queensland Building – Rosemount Complex	26/10/09 – 12/11/09	0.22mm/s	5mm/s (continuous)	Monitoring for rock hammering (day-time) and tunnelling (day and night-time)
11 Bryden St - Fernfield	15/10/09 – 12/11/09	0.42mm/s	5mm/s (continuous)	Monitoring for rock hammering (day-time) and tunnelling (day and night-time)
16 Bryden St - Skilmorie	15/10/09 – 13/11/09	0.19mm/s	5mm/s (continuous)	Monitoring for rock hammering (day-time) and tunnelling (day and night-time)

Location	Monitoring Period	Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
Tunnels Trial Blast 6/11/2009				
14 Gallway Street	7 Seconds	20.5	25.0mm/s	Blasting occurred within close proximity to property boundary. Within CoG Goal
Shell Service Station	7 Seconds	9.72	25.0mm/s	The level of vibration result was within CoG goal
15 Bryden Street	7 Seconds	14.6	25.0mm/s	The level of vibration result was within CoG goal
11 Bryden Street (Fernfield)	7 Seconds	11.0	25.0mm/s	The level of vibration result was within CoG goal
Arthritis Qld (Rosemount)	7 Seconds	4.54	25.0mm/s	The level of vibration result was within CoG goal
Cnr Gallway/ Morris Street	7 Seconds	5.38	25.0mm/s	The level of vibration result was within CoG goal
Skilmorlie (Windsor Motel)	7 Seconds	3.16	25.0mm/s	The level of vibration result was within CoG goal
Tunnels Trial Blast 10/11/2009				
14 Gallway Street	7 Seconds	24.6	25.0mm/s	Blasting occurred within close proximity to property boundary. Within CoG Goal
Shell Service Station	7 Seconds	8.40	25.0mm/s	The level of vibration result was within CoG goal
15 Bryden Street	7 Seconds	21.4	25.0mm/s	The level of vibration result was within CoG goal
11 Bryden Street (Fernfield)	7 Seconds	12.5	25.0mm/s	The level of vibration result was within CoG goal
Arthritis Qld (Rosemount)	7 Seconds	3.53	25.0mm/s	The level of vibration result was within CoG goal
Cnr Gallway/ Morris Street	7 Seconds	4.47	25.0mm/s	The level of vibration result was within CoG goal
Skilmorlie (Windsor Motel)	7 Seconds	2.20	25.0mm/s	The level of vibration result was within CoG goal
Tunnel Liner 5m Offset	7 Seconds	3.22	25.0mm/s	The level of vibration result was within CoG goal

Table 5c: Vibration Monitoring Results Summary – Kedron

Location	Monitoring Period	Event Peak Particle Velocity (mm/s)	CoG Vibration Goal (mm/s)	Comments
134 Kedron Park rd - Tramway Sub-Station No8	15/09/2009-15/10/2009	0.22	2	Monitoring the Roadheader (day and night) – Complies with Goals
40 Brookfield Rd	12/11/2009-18/11/2009	0.39	10	Complies with goals
29 Brookfield Rd	12/11/09 – 19/11/09	0.38	10	Complies with goals

5.3 Compliance with Vibration Goals

The monthly averages shown in Table 4 do not identify any exceedances with Vibration Goals in both the Coordinator report and the relevant Development Approvals. Two notifications will be sent to the Heritage Society to inform them that on two separate occasions when blasting occurred on the 6/11/09 and 10/11/09 that the vibration levels were recorded above 2mm/s at both Rosemount and Skilmorlie House.

6.0 Community Enquiries and Complaints

A total of 248 community complaints were reported to the project between 15 November and 15 December 2009. Issues raised are outlined in the table below. For further details on how we are managing community issues, please refer to the [Community Enquiries and Complaints page](#) of the project website which is updated each month.

Complaints Raised: 15 Nov 2009 - 15 Dec 2009		
Category	No.	No. of stakeholders
Site noise	77	37
Site out-of-hours	59	29
Site dust	31	29
Parking	29	18
Spoil haulage routes and queuing	18	15
Spoil haulage noise	13	10
Traffic Management	13	13
Construction vehicle movements	10	7
General Construction	10	10
PUPs noise	10	8
PUPs out-of-hours	10	9
Worker Behaviour	9	8
Driver Behaviour	8	8
Truck noise	8	8
Spoil haulage driver behaviour	8	6
Site lighting	7	4
Pedestrian/Cyclists	6	6

Complaints Raised: 15 Nov 2009 - 15 Dec 2009		
Category	No.	No. of stakeholders
Consultation	5	5
Site vibration	5	4
PUPs reinstatement	5	4
Water/Flooding	4	4
Property Impacts	4	4
PUPs dust	4	4
Monitoring	3	2
Safety	3	3
Total complaints	248	151

