

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 100 Alfreda Way.
Locality	Morley
Occupier	Vivian De Cruz 92762744
Dates	8/9/2014 to 12/9/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	85m to Tonkin Hwy
Height of the road in relation to the ground	+1m
Road surface type	DGA
Speed zone	80 km/hr (Near Intersection)
Absorbing ground	80%
Angle of view	180
Road gradient	flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	East
Carriageways & lanes.	2,4;
COMMENT	
Comment	Microphone placed on East façade at front of house Vegetation buffer between Alfreda Ave and Tonkin Hwy.
REFERENCES	
AMG Z50 E/N	
Road name	Tonkin Highway.
EXCEL file	100 Alfreda Ave MRWA Logger Sheet.xlsx
Raw data file	100 Alfreda 16-707-041_sta.csv
EQUIPMENT	
Analyser number	16-707-041
Microphone number	16-707-041
Calibrator number	34883971
Calibrator values	94.2, 93.9
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 8/09/14 - High Neg Winds up to 30 km/h All day, some showers, excluded 9/09/14 - Negs winds up to 18km/h in morning, Avg 13 km/h Neg wind during 10/09/14 - Neg winds up to 13km/h, one hour at 15km/h 11/09/14 - Variable winds up to 13km/h 12/09/14 - Negative winds up to 18km/h

Hourly Noise Level Data
100 Alfreda Ave, Morley

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
8/09/2014	8/09/2014	67.1	62.7	59.6	53.7	0.4	260	30
8/09/2014	2:00	63.5	60.1	57.1	51	0.2	270	26
8/09/2014	3:00	67.6	61.7	58.4	50.6	0	270	21
8/09/2014	4:00	65.1	60.6	57.6	52.1	0.6	260	31
8/09/2014	5:00	62.5	59.4	56.7	52.3	0	260	22
8/09/2014	6:00	63.1	60	57.6	53.3	0.2	260	24
8/09/2014	7:00	64.9	60.6	58.3	53.1	0	260	22
8/09/2014	8:00	63.6	60.1	57.4	51	0	260	22
8/09/2014	9:00	64.8	60.4	57.6	51.1	0	270	13
8/09/2014	10:00	63.8	60.1	58.3	53	0	270	18
8/09/2014	11:00	63.9	60.4	57.8	53	0	290	22
8/09/2014	12:00	63.7	61	58.3	53.4	0.2	300	18
8/09/2014	13:00	62.2	60	57.5	52.3	0	280	21
8/09/2014	14:00	65.1	61.3	58.9	53.9	0	290	21
8/09/2014	15:00	65.5	62.1	60.5	54.9	0	280	18
8/09/2014	16:00	65.4	62.4	60	55.7	0	290	28
8/09/2014	17:00	65.4	61.6	59.5	54.8	0	300	21
8/09/2014	18:00	63.9	60.4	58.5	53.7	0.4	290	22
8/09/2014	19:00	63.3	60.6	58.1	53.8	0	290	24
8/09/2014	20:00	62.4	59.3	56.9	52.7	0	290	21
8/09/2014	21:00	62.7	59.1	56.7	52.4	0	280	22
8/09/2014	22:00	61	58.2	55.4	50.5	0	290	24
8/09/2014	23:00	60.2	56.6	53.9	47.9	0	270	22
8/09/2014	0:00	58.3	55.3	52.1	46	0.2	250	22
9/09/2014	9/09/2014	57.2	53.7	50.5	44.6	0	260	21
9/09/2014	2:00	56.1	52.7	49.4	41.7	0	240	18
9/09/2014	3:00	56.2	51.5	47.7	38.2	0	250	17
9/09/2014	4:00	58	53.8	50.2	40.9	0	250	17
9/09/2014	5:00	60.5	56.8	54	47.3	0	230	15
9/09/2014	6:00	63.2	59.5	56.6	51.2	0	240	15
9/09/2014	7:00	65.3	62.2	59.2	53	0	250	17
9/09/2014	8:00	64.9	61.6	58.7	52	0	250	9
9/09/2014	9:00	64.5	61.2	58.6	50.8	0	250	5
9/09/2014	10:00	63.3	59.6	56.8	50.3	0	230	2
9/09/2014	11:00	62.2	58.7	55.3	46.5	0	260	13
9/09/2014	12:00	63.3	58.1	55.4	48.7	0	240	15
9/09/2014	13:00	62	57.3	54.4	46.1	0	260	15
9/09/2014	14:00	65.3	58.7	56	46.8	0	240	13
9/09/2014	15:00	62.6	58.1	55.8	46.8	0	270	13
9/09/2014	16:00	63	58.3	55.9	47.5	0	260	13
9/09/2014	17:00	64.1	58.4	56.1	47.7	0	270	11
9/09/2014	18:00	61.5	58.3	55.7	47.3	0	250	13
9/09/2014	19:00	61.7	58.0	55.3	46.6	0	270	9
9/09/2014	20:00	61.8	57.6	54.8	45.9	0	240	5
9/09/2014	21:00	59.6	57	53.9	47	0	260	5
9/09/2014	22:00	60.7	57.3	54.2	46	0	270	4
9/09/2014	23:00	59	55.4	51.8	42.7	0	270	11
9/09/2014	0:00	58.1	55.4	51.5	42.7	0	310	8
10/09/2014	10/09/2014	58	54	50.1	39.1	0	280	11
10/09/2014	2:00	58.0	53.5	49.6	36.8	0	0	0
10/09/2014	3:00	58	53	49	33.7	0	280	4
10/09/2014	4:00	59.4	54.1	50.4	38.6	0	270	8
10/09/2014	5:00	62.3	58.1	55.1	47.3	0	310	5
10/09/2014	6:00	64.8	61.3	58	50.1	0	260	11
10/09/2014	7:00	65.1	61.4	58.3	51.1	0	250	9
10/09/2014	8:00	65	61.5	58.6	50.6	0	260	9
10/09/2014	9:00	63.2	59	56	48.6	0	260	9
10/09/2014	10:00	62.3	58.9	55.7	48	0	280	9
10/09/2014	11:00	61.4	58.7	55.4	48.6	0	290	11
10/09/2014	12:00	61.4	57.7	54.9	47.7	0	280	11
10/09/2014	13:00	61.2	57.9	55	47	0	310	11
10/09/2014	14:00	61.5	57.3	54.5	47.1	0	270	13
10/09/2014	15:00	62.3	58.1	55.8	47.4	0	270	13
10/09/2014	16:00	63.7	58.3	55.8	48.3	0	280	15
10/09/2014	17:00	62.1	57.9	55.7	47.6	0	270	11
10/09/2014	18:00	60.7	57.8	55.2	47.1	0	240	9
10/09/2014	19:00	60.7	58.3	55.5	49.2	0	230	9
10/09/2014	20:00	62.5	58.6	55.7	47.9	0	210	11
10/09/2014	21:00	62.2	59.1	55.9	48.6	0	170	9
10/09/2014	22:00	62.6	59.2	55.9	48	0	190	5
10/09/2014	23:00	63	59.3	55.8	48.9	0	190	4
10/09/2014	0:00	61.7	58.2	55	45.1	0	0	0

Hourly Noise Level Data

100 Alfreda Ave, Morley

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
11/09/2014	11/09/2014	61	57.8	54	44.8	0	0	0
11/09/2014	2:00	61.5	56.7	52.6	39.8	0	0	0
11/09/2014	3:00	61.3	55.4	51.4	38	0	0	0
11/09/2014	4:00	59.3	55	51.5	43.5	0	20	8
11/09/2014	5:00	62	58.3	55	47	0	20	4
11/09/2014	6:00	66.2	62.5	59.2	51.4	0	10	4
11/09/2014	7:00	67.3	62.6	59.5	54.3	0	30	2
11/09/2014	8:00	65	62.6	59.8	52.8	0	30	2
11/09/2014	9:00	66	62.2	59.3	52.3	0	30	8
11/09/2014	10:00	65.3	61.6	58.5	51	0	40	8
11/09/2014	11:00	64.6	60.7	57.8	50.2	0	20	9
11/09/2014	12:00	63.9	59.7	57.1	49.3	0	360	8
11/09/2014	13:00	62.5	58.3	55.1	47.7	0	290	11
11/09/2014	14:00	63.7	58.2	55.5	47.8	0	290	9
11/09/2014	15:00	64.8	58.5	55.9	47.8	0	290	13
11/09/2014	16:00	63.1	57.9	55.4	47.1	0	270	11
11/09/2014	17:00	64.7	58.2	55.8	48.1	0	260	13
11/09/2014	18:00	62.7	58.5	56.1	48.2	0	250	11
11/09/2014	19:00	63	59.7	56.7	49.1	0	240	11
11/09/2014	20:00	64.2	61.0	57.8	50.7	0	220	9
11/09/2014	21:00	65.3	62.3	58.9	52.3	0	0	0
11/09/2014	22:00	63.9	61.6	58.6	52.5	0	0	0
11/09/2014	23:00	63.9	60.9	57.6	50	0	0	0
11/09/2014	0:00	63.6	59.8	56.9	47.1	0	0	0
12/09/2014	12/09/2014	62.2	58.8	55	45.2	0	0	0
12/09/2014	2:00	61.4	57.7	53.7	42.6	0	0	0
12/09/2014	3:00	62.9	57.3	53.4	41.3	0	0	0
12/09/2014	4:00	62.6	57.4	53.9	44.5	0	0	0
12/09/2014	5:00	63.1	59.1	55.8	48.1	0	0	0
12/09/2014	6:00	68	63.5	60.6	52.5	0	0	0
12/09/2014	7:00	67.8	63.6	60.8	55.6	0	220	2
12/09/2014	8:00	67.3	63.6	60.9	53.9	0	210	9
12/09/2014	9:00	66.3	62.8	60	53.4	0	30	8
12/09/2014	10:00	66	61.9	59	51.6	0	30	9
12/09/2014	11:00	64.5	61	57.9	50.4	0	20	9
12/09/2014	12:00	63.9	59.6	56.5	48.7	0	340	8
12/09/2014	13:00	60.4	57.4	54.2	47.8	0	300	5
12/09/2014	14:00	61.5	57.4	54.4	47.7	0	310	11
12/09/2014	15:00	60.3	57.1	54.5	47.8	0	240	15
12/09/2014	16:00	61.3	57.8	54.9	48.1	0	260	17
12/09/2014	17:00	60.8	57.3	54.5	48.1	0	250	17
12/09/2014	18:00	62.3	58.5	56.2	48.9	0	240	18
12/09/2014	19:00	62.7	59.0	56.4	49.8	0	230	13
12/09/2014	20:00	64.3	59.4	56.5	48	0	220	13
12/09/2014	21:00	65.3	60.8	58.1	49.9	0	220	9
12/09/2014	22:00	65	60.7	57.9	52.3	0	0	0
12/09/2014	23:00	64.3	60.6	57.7	50.9	0	0	0
12/09/2014	0:00	65	60.6	57	49.8	0	0	0

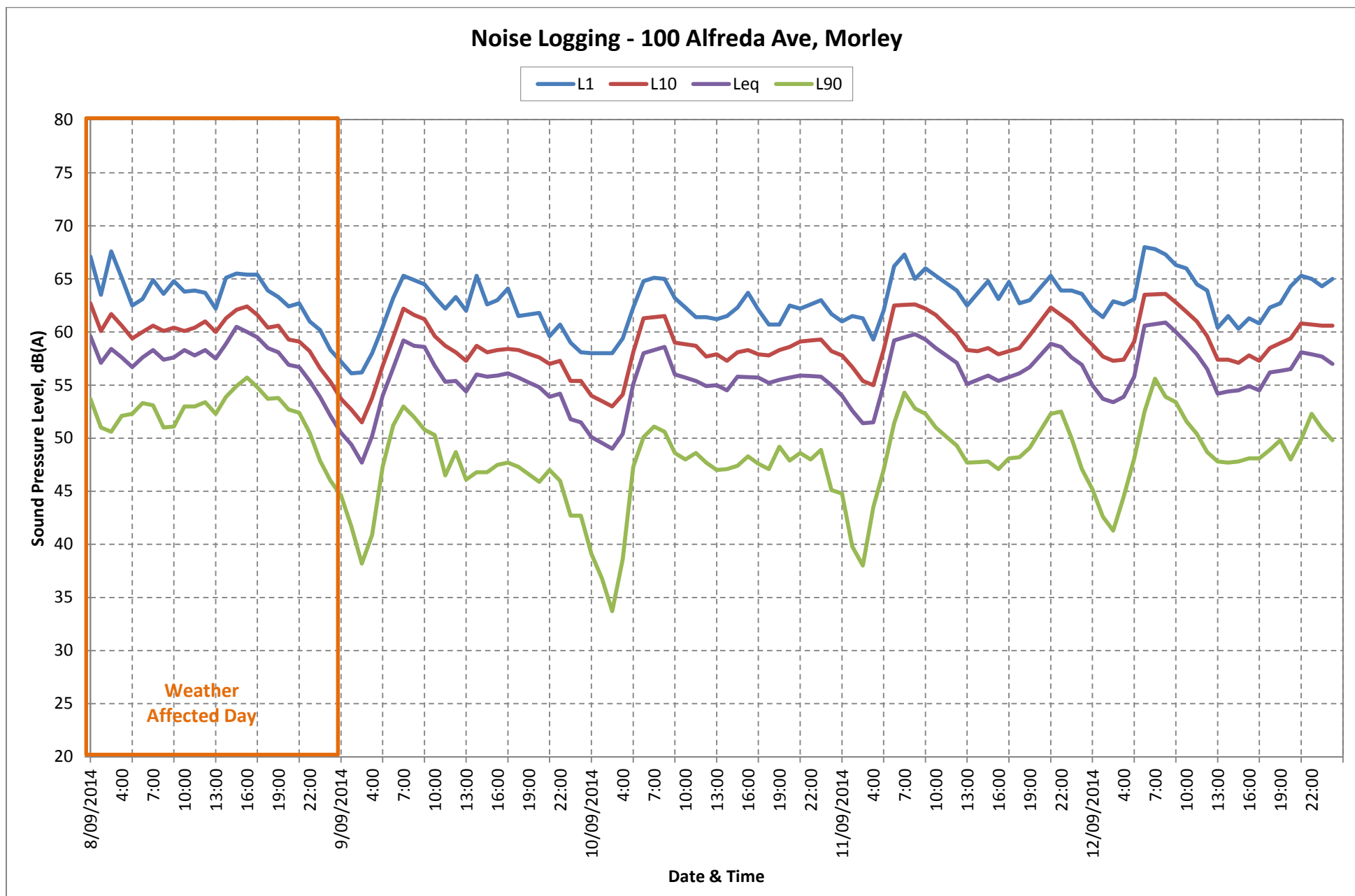


Table A8 – Results of Noise Logging 8 Wells Court, Noranda

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
8 September 2014*	57.7	55.8	55.6	56.2
9 September 2014	50.8	48.9	49.9	45.7
10 September 2014	51.5	48.3	49.6	43.2
11 September 2014	51.9	48.9	49.9	45.6
12 September 2014	51.7	49.4	50.0	47.6
Weekday Average	51.5	48.9	49.9	45.5

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A8 – Noise Logger at 8 Wells Court, Noranda**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 8 Wells Court.
Locality	Noranda
Occupier	Jose Berard 0401546000
Dates	8/9/2014 to 12/9/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	35m to Benara Rd
Height of the road in relation to the ground	0m
Road surface type	DGA
Speed zone	70 km/hr
Absorbing ground	80%
Angle of view	160
Road gradient	flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	South
Carriageways & lanes.	2,4;
COMMENT	
Comment	Microphone placed on South façade at Rear of house Rear Property fence between Microphone and Benara Road.
REFERENCES	
AMG Z50 E/N	
Road name	Benara Road
EXCEL file	8 Wells Court MRWA Logger Sheet.xlsx
Raw data file	8 wells ct 15-203-505_Sta.csv
EQUIPMENT	
Analyser number	15-203-505
Microphone number	15-203-505
Calibrator number	34883971
Calibrator values	93.9, 93.6
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 8/09/14 - High Variable Winds up to 30 km/h All day, some showers, excluded 9/09/14 - Pos winds up to 18km/h in morning, Avg 13 km/h Pos wind during day 10/09/14 - Var winds up to 13km/h, one hour at 15km/h 11/09/14 - Neg Morning winds up to 11km/h, Pos winds to 13km/h afternoon 12/09/14 - Positive Evening winds up to 18km/h

Hourly Noise Level Data
8 Wells Court, Noranda

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
8/09/2014	8/09/2014	66.3	62.7	59.4	52.3	0.4	260	30
8/09/2014	2:00	65.9	60.6	57.4	48.2	0.2	270	26
8/09/2014	3:00	64.7	60.6	56.8	48.7	0	270	21
8/09/2014	4:00	63.6	59.7	56.4	49.2	0.6	260	31
8/09/2014	5:00	64.2	59.3	55.9	49.3	0	260	22
8/09/2014	6:00	63.3	59.4	56.2	50.4	0.2	260	24
8/09/2014	7:00	60.8	57	53.9	47.7	0	260	22
8/09/2014	8:00	58.8	55.8	52.9	47.4	0	260	22
8/09/2014	9:00	62.4	56.8	55.2	48.1	0	270	13
8/09/2014	10:00	84.2	58.8	55.8	49.5	0	270	18
8/09/2014	11:00	82.3	58	55	49.1	0	290	22
8/09/2014	12:00	80.6	56.1	53.1	47.6	0.2	300	18
8/09/2014	13:00	61.6	57.6	54.4	48.7	0	280	21
8/09/2014	14:00	63.8	59.3	56.2	50.4	0	290	21
8/09/2014	15:00	64.4	60.2	56.9	50.8	0	280	18
8/09/2014	16:00	64.8	59.7	57.1	51.5	0	290	28
8/09/2014	17:00	65.2	59.1	57.3	51.4	0	300	21
8/09/2014	18:00	64.4	59.6	57.3	50.8	0.4	290	22
8/09/2014	19:00	63.4	59.5	56.5	50.4	0	290	24
8/09/2014	20:00	62.2	58.5	55.6	50	0	290	21
8/09/2014	21:00	63.5	58.6	55.4	48.6	0	280	22
8/09/2014	22:00	63	57.5	54.2	47	0	290	24
8/09/2014	23:00	58.1	54.9	51.6	44.6	0	270	22
8/09/2014	0:00	56.4	52.5	49.1	42.9	0.2	250	22
9/09/2014	9/09/2014	55.5	50.6	47.7	42.6	0	260	21
9/09/2014	2:00	52.9	49	45.5	39.2	0	240	18
9/09/2014	3:00	52.6	46.6	43.5	36.8	0	250	17
9/09/2014	4:00	51.2	46	42.9	37.1	0	250	17
9/09/2014	5:00	53.6	49.6	46.9	42.6	0	230	15
9/09/2014	6:00	55.7	52	49.4	45.6	0	240	15
9/09/2014	7:00	57.1	52.8	50	45.4	0	250	17
9/09/2014	8:00	59.8	55	53.3	45.5	0	250	9
9/09/2014	9:00	60.3	54.7	52.8	45.4	0	250	5
9/09/2014	10:00	58.6	54.3	52.2	45.3	0	230	2
9/09/2014	11:00	56.7	52.5	49.7	44.6	0	260	13
9/09/2014	12:00	56.8	52.2	50.5	43.7	0	240	15
9/09/2014	13:00	55.6	51.6	48.6	43.2	0	260	15
9/09/2014	14:00	57.3	51.7	49.3	43.4	0	240	13
9/09/2014	15:00	57.2	51.3	48.8	43.2	0	270	13
9/09/2014	16:00	58.5	52	49.4	44.4	0	260	13
9/09/2014	17:00	57.8	52.6	50	44.3	0	270	11
9/09/2014	18:00	55.2	51.6	48.6	43.5	0	250	13
9/09/2014	19:00	55.7	50.8	48.3	41.7	0	270	9
9/09/2014	20:00	57	49.6	47.4	39.9	0	240	5
9/09/2014	21:00	53.8	47.7	45.3	38	0	260	5
9/09/2014	22:00	52.3	46.5	43.8	36.9	0	270	4
9/09/2014	23:00	51.1	44.6	42	33.9	0	270	11
9/09/2014	0:00	49.1	43	39.9	33.6	0	310	8
10/09/2014	10/09/2014	46.3	39.6	37.1	31.8	0	280	11
10/09/2014	2:00	45.4	38.7	36	30.4	0	0	0
10/09/2014	3:00	45.9	37.5	35.4	30	0	280	4
10/09/2014	4:00	47.8	39.7	37.6	30.6	0	270	8
10/09/2014	5:00	49.1	44.8	42.5	35.8	0	310	5
10/09/2014	6:00	53.2	48.3	45.8	40.3	0	260	11
10/09/2014	7:00	59.1	51	49	42.2	0	250	9
10/09/2014	8:00	56.5	52.8	50.1	44.4	0	260	9
10/09/2014	9:00	59.5	52.9	50.2	43.8	0	260	9
10/09/2014	10:00	57.6	51.8	50.2	42.5	0	280	9
10/09/2014	11:00	55.7	50.7	47.8	41.5	0	290	11
10/09/2014	12:00	57	50	47.8	41.4	0	280	11
10/09/2014	13:00	55.1	49.5	47.6	40.8	0	310	11
10/09/2014	14:00	59	51.1	48.3	42.3	0	270	13
10/09/2014	15:00	58.4	51	48.9	43.1	0	270	13
10/09/2014	16:00	60.6	51.9	50.2	44.3	0	280	15
10/09/2014	17:00	61.1	52.3	50.5	46.1	0	270	11
10/09/2014	18:00	58.3	53.1	50.7	45.1	0	240	9
10/09/2014	19:00	55.5	53.4	50.8	45.2	0	230	9
10/09/2014	20:00	56.9	52.8	51.3	45.6	0	210	11
10/09/2014	21:00	55.4	52.1	49.5	45.1	0	170	9
10/09/2014	22:00	57.4	52.3	48.5	45.5	0	190	5
10/09/2014	23:00	54.5	49.9	47.4	42.4	0	190	4
10/09/2014	0:00	52.7	48.1	45.8	38.8	0	0	0

Hourly Noise Level Data
8 Wells Court, Noranda

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
11/09/2014	11/09/2014	52.7	49	45.8	38.8	0	0	0
11/09/2014	2:00	52.7	48.2	44.5	35.7	0	0	0
11/09/2014	3:00	51.3	45.3	41.7	33.5	0	0	0
11/09/2014	4:00	48.8	43.4	40.6	35.2	0	20	8
11/09/2014	5:00	51.3	46.9	44	38.5	0	20	4
11/09/2014	6:00	54.8	50.5	47.9	41.7	0	10	4
11/09/2014	7:00	57.2	52.7	50.5	46.4	0	30	2
11/09/2014	8:00	56.6	52.1	49.8	45.5	0	30	2
11/09/2014	9:00	57.1	52.4	49.9	45.5	0	30	8
11/09/2014	10:00	56.4	51.6	50.2	43.9	0	40	8
11/09/2014	11:00	55.7	50.7	47.8	43.2	0	20	9
11/09/2014	12:00	57	50	47.8	40.2	0	360	8
11/09/2014	13:00	59.7	50.3	48.2	40.5	0	290	11
11/09/2014	14:00	58.8	50.6	48.5	40.7	0	290	9
11/09/2014	15:00	57.7	50.6	48.4	41.1	0	290	13
11/09/2014	16:00	55.4	51.3	49.1	41.8	0	270	11
11/09/2014	17:00	58.3	52.9	50.2	44.6	0	260	13
11/09/2014	18:00	58.3	53.1	51.5	46.8	0	250	11
11/09/2014	19:00	60	54.2	51.2	44.9	0	240	11
11/09/2014	20:00	61.2	53.9	50.9	44.4	0	220	9
11/09/2014	21:00	57.1	53.6	51.2	47.4	0	0	0
11/09/2014	22:00	55.7	52.8	50.8	46.8	0	0	0
11/09/2014	23:00	55	50.6	48	43.4	0	0	0
11/09/2014	0:00	56.6	50.3	46.9	42.4	0	0	0
12/09/2014	12/09/2014	52.4	48.7	45.7	40.1	0	0	0
12/09/2014	2:00	52.1	48.9	45.7	39.6	0	0	0
12/09/2014	3:00	53.4	48.3	45.2	38.3	0	0	0
12/09/2014	4:00	53.1	49.4	46.7	41.6	0	0	0
12/09/2014	5:00	53.9	50.8	48.4	44.3	0	0	0
12/09/2014	6:00	57.1	53.6	51.1	46.5	0	0	0
12/09/2014	7:00	59.2	54.8	51.4	47.4	0	220	2
12/09/2014	8:00	58.7	53.5	51.7	48.2	0	210	9
12/09/2014	9:00	55.4	51.9	50.6	45.5	0	30	8
12/09/2014	10:00	56.6	51.3	49.5	43.8	0	30	9
12/09/2014	11:00	55.6	49.9	47.4	41.5	0	20	9
12/09/2014	12:00	56.1	49.2	46.8	39.6	0	340	8
12/09/2014	13:00	56.8	49.4	47.1	40.3	0	300	5
12/09/2014	14:00	56	50.3	47.3	41.1	0	310	11
12/09/2014	15:00	57.7	51.9	49.1	43.3	0	240	15
12/09/2014	16:00	57.7	53.4	50.8	45.9	0	260	17
12/09/2014	17:00	57.8	54.1	51.4	47.1	0	250	17
12/09/2014	18:00	57.9	52.9	51.3	46.9	0	240	18
12/09/2014	19:00	57.1	53.2	51.1	47	0	230	13
12/09/2014	20:00	61.5	52.6	50.8	45.4	0	220	13
12/09/2014	21:00	59.9	52.5	50.5	46.3	0	220	9
12/09/2014	22:00	56.9	51.4	49.2	45.1	0	0	0
12/09/2014	23:00	55.7	50.2	47.8	43.9	0	0	0
12/09/2014	0:00	55.9	48.9	46.9	42.5	0	0	0

Noise Logging - 8 Wells Court, Noranda

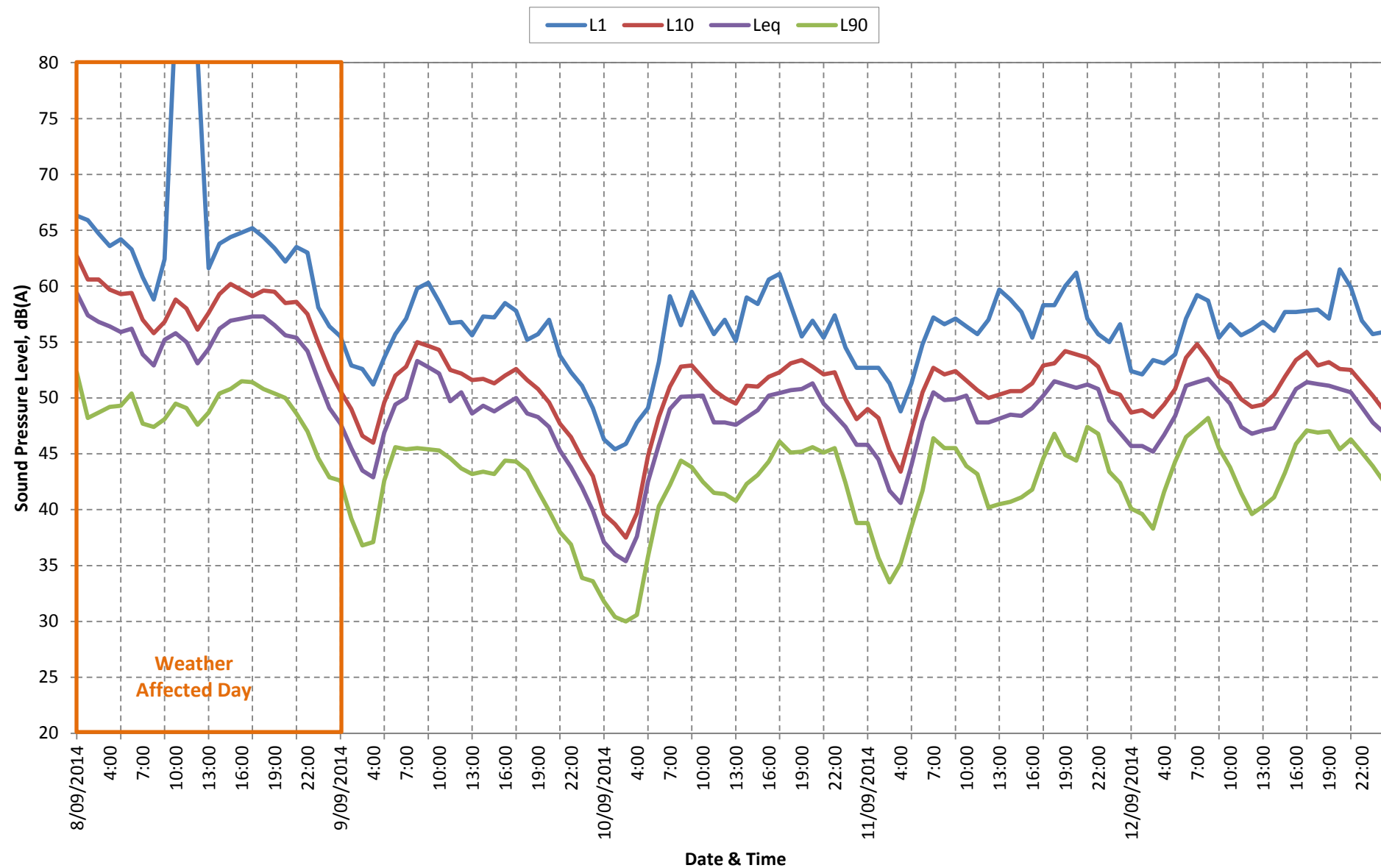


Table A9 – Results of Noise Logging 15 Davis Court, Morley

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
15 September 2014	50.7	50.5	51.3	48.3
16 September 2014	47.8	48.3	49.5	44.1
17 September 2014	46.8	47.9	49.3	41.4
18 September 2014	48.3	49.4	50.8	42.5
19 September 2014	47.9	48.2	49.3	45.0
Weekday Average	48.3	48.9	50.1	44.3

**Photograph A9 – Noise Logger at 15 Davis Court, Morley**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 15 Davis Court.
Locality	Morley
Occupier	Mark Murphy 0417188008
Dates	15/9/2014 to 19/9/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	120m to Tonkin Hwy; 60m to Benara Rd
Height of the road in relation to the ground	+1m
Road surface type	DGA
Speed zone	80 km/hr (Tonkin Near Intersection); 70km/h on Benara Rd
Absorbing ground	80%
Angle of view	70; 170
Road gradient	flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West to Tonkin; North to Benara
Carriageways & lanes.	2,5; 2,4
COMMENT	
Comment	Microphone placed on North façade at Side of house Reserve Land to North and West of house between Benara Rd and Tonkin Property fence between roads and microphone.
REFERENCES	
AMG Z50 E/N	
Road name	Tonkin Highway.
EXCEL file	15 Davis Ct MRWA Logger Sheet.xlsx
Raw data file	15 Davis Ct_sta.csv
EQUIPMENT	
Analyser number	15-203-999
Microphone number	15-203-999
Calibrator number	34883971
Calibrator values	93.8, 93.9
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 15/09/14 - Var Winds up to 17 km/h 16/09/14 - Neg winds, top of 17km/h at 10am for one hour 17/09/14 - Var winds up to 17km/h, one hour at 18km/h 18/09/14 - Positive winds up to 22km/h from 10am to 11pm. 19/09/14 - Var winds up to 13km/h, morning negative, afternoon positive dirn

Hourly Noise Level Data

15 Davis Court, Morley

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
15/09/2014	15/09/2014	50.7	46.2	43.3	37.6	0	170	8
15/09/2014	2:00	49.5	45.5	41.9	35.4	0	170	5
15/09/2014	3:00	50.1	45.8	42.2	35.2	0	0	0
15/09/2014	4:00	53.4	49.2	45.7	38.5	0	0	0
15/09/2014	5:00	54.6	51.5	48.2	41.5	0	0	0
15/09/2014	6:00	68.9	55	55.5	45.9	0	0	0
15/09/2014	7:00	65.4	56	55.1	48.8	0	170	5
15/09/2014	8:00	63	55.1	53.7	48.1	0	150	5
15/09/2014	9:00	61.7	55	53	47.3	0	80	4
15/09/2014	10:00	61.2	53.4	51.4	45.2	0	120	9
15/09/2014	11:00	60.5	51.7	50.7	43.5	0	90	8
15/09/2014	12:00	61.5	52.5	51	43.5	0	100	8
15/09/2014	13:00	61.5	52	51.3	42.6	0	140	5
15/09/2014	14:00	62.9	52.6	51.7	43.5	0	140	8
15/09/2014	15:00	63.4	50.5	49.5	42.6	0	210	15
15/09/2014	16:00	61.4	49.6	51.1	42.3	0	220	15
15/09/2014	17:00	63.9	53.6	52.6	45.6	0	230	17
15/09/2014	18:00	64.9	53.2	52.9	45.5	0	220	17
15/09/2014	19:00	53.5	48.6	47.1	42.8	0	210	13
15/09/2014	20:00	50.9	46.7	47.2	40	0	190	13
15/09/2014	21:00	51.2	46.1	44.1	39.1	0	170	15
15/09/2014	22:00	51.7	45.5	44	38.9	0	170	13
15/09/2014	23:00	48.6	45.1	42.3	37.7	0	170	9
15/09/2014	0:00	48.7	44.9	41.9	37.1	0	170	8
16/09/2014	16/09/2014	47.7	43.8	41.3	37.1	0	170	9
16/09/2014	2:00	49.3	43.8	40.9	35	0	130	8
16/09/2014	3:00	51	46.1	43	37.4	0	110	9
16/09/2014	4:00	47.7	44.5	41.4	36.6	0	110	11
16/09/2014	5:00	50.5	47.3	44.6	39.1	0	90	11
16/09/2014	6:00	58.5	50.2	49.6	43.8	0	100	9
16/09/2014	7:00	66.5	53.1	54.5	46.8	0	90	11
16/09/2014	8:00	63.9	52.7	52.6	46.8	0	90	11
16/09/2014	9:00	63.7	51.7	51.6	45.3	0	120	9
16/09/2014	10:00	62.6	50.6	50.7	43.9	0	90	17
16/09/2014	11:00	64.8	49	49.6	42.2	0	90	13
16/09/2014	12:00	61	48	48.5	41.2	0	90	13
16/09/2014	13:00	63.4	46.3	49.6	39.3	0	110	11
16/09/2014	14:00	69.2	50.6	49.2	40.2	0	100	11
16/09/2014	15:00	61.3	50.4	48.8	38.8	0	100	11
16/09/2014	16:00	63.7	46.1	45.7	39.6	0	80	9
16/09/2014	17:00	65	47.2	46.5	40.9	0	70	9
16/09/2014	18:00	63.2	47	47.4	41.5	0	110	5
16/09/2014	19:00	59	47.9	48.3	41.3	0	110	8
16/09/2014	20:00	50.4	45.6	46.5	39.3	0	110	5
16/09/2014	21:00	51.2	45.4	44.0	38.5	0	140	5
16/09/2014	22:00	50.6	44.6	42.2	37.8	0	150	8
16/09/2014	23:00	46.6	42.9	40.3	35.6	0	120	4
16/09/2014	0:00	47.7	41.8	42.2	33.8	0	120	5
17/09/2014	17/09/2014	46	41.3	38.5	33.4	0	0	0
17/09/2014	2:00	43.5	39.7	36.8	32.2	0	50	5
17/09/2014	3:00	43.8	39.1	36.4	31.6	0	50	9
17/09/2014	4:00	45.5	40.9	38.1	32.5	0	50	8
17/09/2014	5:00	47.3	43.8	41.7	36	0	80	5
17/09/2014	6:00	56.2	46.5	46.9	40	0	70	2
17/09/2014	7:00	65.1	49.2	52	43.7	0	80	8
17/09/2014	8:00	66.2	50	53.9	43.7	0	70	5
17/09/2014	9:00	63.2	48.3	50.2	41.7	0	90	8
17/09/2014	10:00	62.8	46.5	48.8	39.5	0	100	5
17/09/2014	11:00	60.6	45.5	47.7	38.2	0	180	11
17/09/2014	12:00	60.6	45.5	47.6	38.2	0	170	13
17/09/2014	13:00	59.7	45.5	48.2	38.8	0	170	13
17/09/2014	14:00	61.6	46.2	48.8	40.1	0	190	13
17/09/2014	15:00	61.4	46.9	49.3	40.9	0	220	18
17/09/2014	16:00	57.7	47.6	49	41.8	0	210	17
17/09/2014	17:00	63	47.7	49.8	41.6	0	210	11
17/09/2014	18:00	63.4	49	50.5	43.4	0	220	17
17/09/2014	19:00	59.4	48.6	48.5	42.8	0	220	11
17/09/2014	20:00	50.8	47	46.6	40.1	0	210	11
17/09/2014	21:00	49.6	45.4	43.2	38.7	0	190	13
17/09/2014	22:00	52.4	45.5	44	38.6	0	180	11
17/09/2014	23:00	47.9	43.9	41.2	36.5	0	170	11
17/09/2014	0:00	47.6	43.2	40.7	35.2	0	170	5

Hourly Noise Level Data

15 Davis Court, Morley

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
18/09/2014	18/09/2014	46.4	42.4	39.2	33.8	0	0	0
18/09/2014	2:00	44	39.9	37	31.9	0	0	0
18/09/2014	3:00	44.8	41	37.5	31.1	0	170	2
18/09/2014	4:00	45.2	41.6	38.3	32.1	0	190	4
18/09/2014	5:00	49	45.9	42.9	37.6	0	180	8
18/09/2014	6:00	57.6	49.0	48.4	41.7	0	180	5
18/09/2014	7:00	66.1	52.1	53.8	44.3	0	0	0
18/09/2014	8:00	64.8	51	52.6	44.1	0	170	2
18/09/2014	9:00	65.5	49.5	52.2	42.6	0	190	5
18/09/2014	10:00	63.6	48.8	50.1	41	0	180	11
18/09/2014	11:00	67	49.1	53	40.4	0	210	11
18/09/2014	12:00	65.5	50.1	51.8	41	0	190	11
18/09/2014	13:00	64.4	49	51.3	40.9	0	220	13
18/09/2014	14:00	61.2	48.6	51.4	41.9	0	240	17
18/09/2014	15:00	68.1	49.9	51.5	42.9	0	210	18
18/09/2014	16:00	62.6	50.1	50.7	43.7	0	210	21
18/09/2014	17:00	60.8	49	50.1	43.5	0	210	22
18/09/2014	18:00	63.9	50.4	51.5	43.6	0	220	17
18/09/2014	19:00	65	48.5	47.7	42.5	0	220	15
18/09/2014	20:00	49.2	46.1	43.9	39.4	0	220	17
18/09/2014	21:00	48.4	45	42.7	38.8	0	220	11
18/09/2014	22:00	47.9	44.8	42.9	38.3	0	200	9
18/09/2014	23:00	53.4	43.8	41.9	36.9	0	190	11
18/09/2014	0:00	47.5	43.2	40.9	34.9	0	150	5
19/09/2014	19/09/2014	47	42	40	33.2	0	150	2
19/09/2014	2:00	42.6	38.5	35.7	31.6	0	160	8
19/09/2014	3:00	46	40.4	37.9	31.9	0	0	0
19/09/2014	4:00	48.7	45.5	41.9	34.2	0	0	0
19/09/2014	5:00	53	49.8	46.9	39.4	0	0	0
19/09/2014	6:00	59.5	52.3	50.7	45.9	0	0	0
19/09/2014	7:00	65.9	54.7	54.4	46.9	0	0	0
19/09/2014	8:00	63.2	51	51.4	44.6	0	90	2
19/09/2014	9:00	64.8	51.1	52.1	42.5	0	90	5
19/09/2014	10:00	63.5	48.6	50.9	41.3	0	140	8
19/09/2014	11:00	63.5	48	49.6	39.8	0	150	5
19/09/2014	12:00	62.4	47.7	49	39.7	0	160	9
19/09/2014	13:00	64.3	47.5	47.5	39.1	0	110	8
19/09/2014	14:00	53.4	46.2	45.9	39.1	0	180	9
19/09/2014	15:00	55.9	46.6	46.9	39.8	0	190	13
19/09/2014	16:00	56.5	47.7	48.6	41.4	0	210	11
19/09/2014	17:00	65.2	49.1	48.3	42.8	0	230	13
19/09/2014	18:00	64.1	48.7	48	43.1	0	230	13
19/09/2014	19:00	53.7	48.2	47.5	42.6	0	230	9
19/09/2014	20:00	51.2	46.6	45.9	40	0	190	8
19/09/2014	21:00	50.3	45.5	43.7	38.7	0	170	9
19/09/2014	22:00	48.3	44.9	42.6	38.7	0	180	9
19/09/2014	23:00	49.2	44.9	43.9	37.9	0	160	9
19/09/2014	0:00	49.7	44.5	44.4	37.1	0	150	8

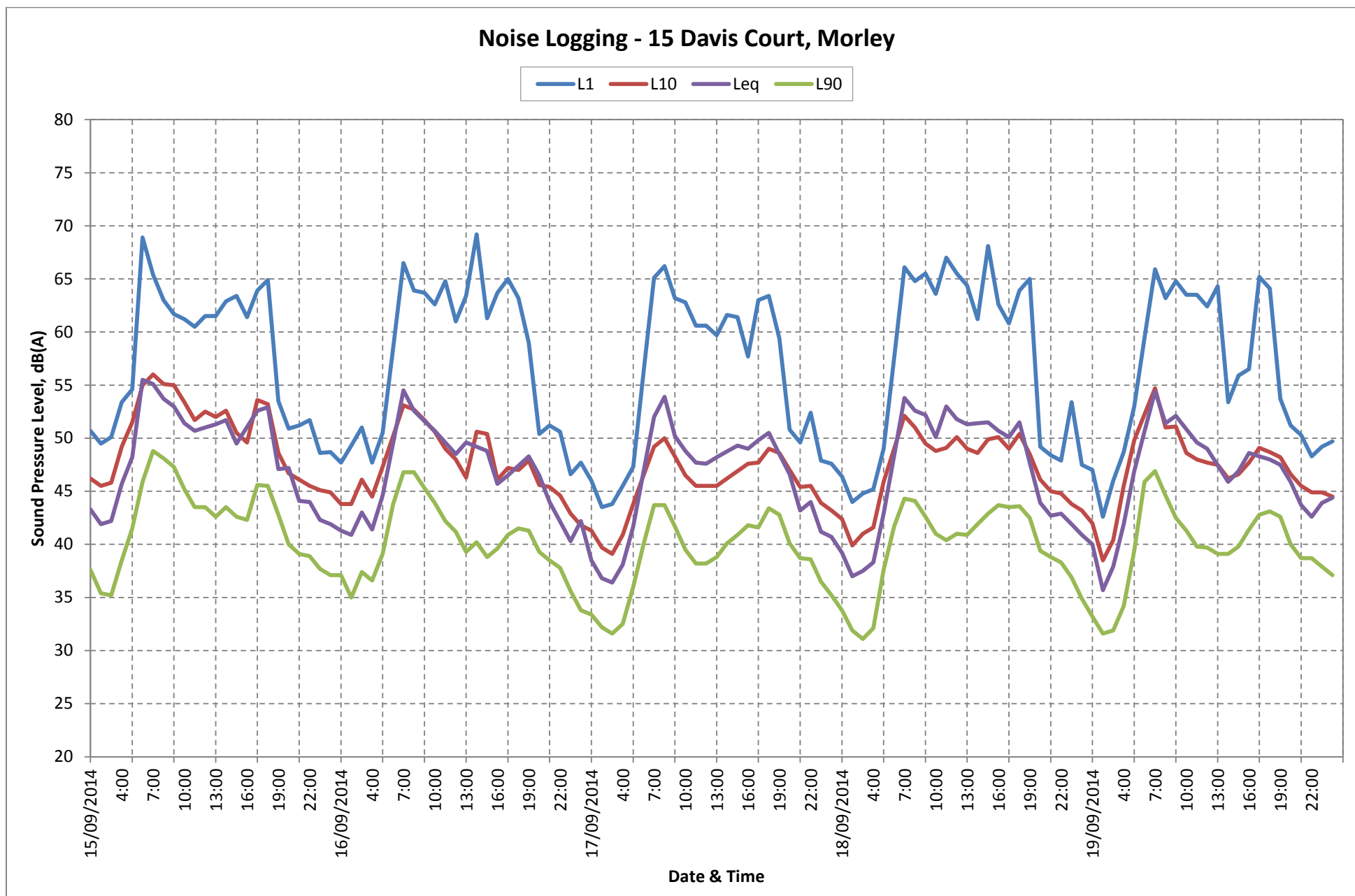


Table A10 – Results of Noise Logging 6 Acacia Court, Beechboro

Date	L _{A10,18hour} , dB	L _{Aeq,24hour} , dB	L _{Aeq(Day)} , dB	L _{Aeq(Night)} , dB
15 September 2014	57.4	54.2	55.2	51.1
16 September 2014	56.1	52.9	53.9	49.9
17 September 2014	57.3	54.0	55.1	50.2
18 September 2014	58.0	54.7	55.8	51.3
19 September 2014	57.1	54.0	54.7	52.1
Weekday Average	57.1	54.0	54.9	50.9



Photograph A10 – Noise Logger at 6 Acacia Court, Beechboro

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 6 Acacia Court.
Locality	Beechboro
Occupier	Ronnie 0423255585
Dates	15/9/2014 to 19/9/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	65m
Height of the road in relation to the ground	+2m
Road surface type	DGA
Speed zone	90 km/hr
Absorbing ground	60%
Angle of view	150
Road gradient	flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	2,4;
COMMENT	
Comment	Microphone placed on West façade at front of house House is near Pedestrian footbridge (over Tonkin) Earthen Bund/reserve between Tonkin and microphone.
REFERENCES	
AMG Z50 E/N	
Road name	Tonkin Highway.
EXCEL file	6 Acacia Ct MRWA Logger Sheet.xlsx
Raw data file	6 Acacia_sta.csv
EQUIPMENT	
Analyser number	15-203-505
Microphone number	15-203-505
Calibrator number	34883971
Calibrator values	93.6, 93.8
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 15/09/14 - Neg Winds <9 km/h before 2pm, Pos in afternoon <17km/h 16/09/14 - Neg winds, top of 17km/h at 10am for one hour 17/09/14 - Neg Winds <13 km/h before 2pm, Pos in afternoon <18km/h 18/09/14 - Positive winds up to 22km/h from 10am to 11pm. 19/09/14 - Var winds up to 13km/h, morning negative, afternoon positive dirn

Hourly Noise Level Data

6 Acacia Court, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
15/09/2014	15/09/2014	55.7	50.9	47.5	36.7	0	170	8
15/09/2014	2:00	55.3	49.5	45.7	32.5	0	170	5
15/09/2014	3:00	55.4	50.4	46	32.1	0	0	0
15/09/2014	4:00	58.8	53.9	49.9	37.1	0	0	0
15/09/2014	5:00	59.9	57.3	53.1	42.1	0	0	0
15/09/2014	6:00	63.6	59.3	56.4	47.4	0	0	0
15/09/2014	7:00	63.7	60.2	57.7	50.6	0	170	5
15/09/2014	8:00	63.6	59.3	56.7	49.7	0	150	5
15/09/2014	9:00	63.5	58.3	55.6	48.1	0	80	4
15/09/2014	10:00	63.1	58.0	55.2	44.8	0	120	9
15/09/2014	11:00	62.7	57.7	54.7	43.4	0	90	8
15/09/2014	12:00	64.1	58.5	55.5	44	0	100	8
15/09/2014	13:00	63.6	58.5	55.4	42.8	0	140	5
15/09/2014	14:00	62.7	58.4	55.2	44.8	0	140	8
15/09/2014	15:00	62.7	58.9	55.8	47.3	0	210	15
15/09/2014	16:00	62.4	58.3	55.3	47.5	0	220	15
15/09/2014	17:00	62	57.7	54.8	47.9	0	230	17
15/09/2014	18:00	62.1	58.4	55.8	50.2	0	220	17
15/09/2014	19:00	61.6	57.9	55.3	48.4	0	210	13
15/09/2014	20:00	59.7	56	52.8	42.7	0	190	13
15/09/2014	21:00	59.2	55.5	51.6	40.7	0	170	15
15/09/2014	22:00	58.3	55.1	51.2	40.8	0	170	13
15/09/2014	23:00	56.6	53.2	49.4	39.3	0	170	9
15/09/2014	0:00	56.6	52.6	48.6	37.6	0	170	8
16/09/2014	16/09/2014	54.5	49.4	46	37.8	0	170	9
16/09/2014	2:00	54.2	47.9	44.6	36.3	0	130	8
16/09/2014	3:00	55.3	50	46.4	38.2	0	110	9
16/09/2014	4:00	56.4	51.6	47.4	36	0	110	11
16/09/2014	5:00	58.9	56	51.9	41.1	0	90	11
16/09/2014	6:00	61.5	58.1	55.1	47.2	0	100	9
16/09/2014	7:00	62.5	58.8	56	48.4	0	90	11
16/09/2014	8:00	62	58.3	55.4	46.9	0	90	11
16/09/2014	9:00	61.3	57.3	54.5	46.5	0	120	9
16/09/2014	10:00	61.7	57.8	54.7	46.1	0	90	17
16/09/2014	11:00	62.5	57.8	54.9	45.9	0	90	13
16/09/2014	12:00	66.4	57.2	54.3	45.8	0	90	13
16/09/2014	13:00	61.6	56.6	53.7	44.4	0	110	11
16/09/2014	14:00	61.4	56.6	53.6	44.5	0	100	11
16/09/2014	15:00	62.4	56.8	54	44.5	0	100	11
16/09/2014	16:00	59.5	56.3	53.4	45.7	0	80	9
16/09/2014	17:00	59.5	55.8	52.8	46.1	0	70	9
16/09/2014	18:00	59.1	55.9	53.2	45.5	0	110	5
16/09/2014	19:00	59.6	56.6	53.8	47.6	0	110	8
16/09/2014	20:00	59.3	55.7	52.6	42.5	0	110	5
16/09/2014	21:00	58.2	55.2	51.3	40.3	0	140	5
16/09/2014	22:00	57.1	53.4	49.8	39.9	0	150	8
16/09/2014	23:00	57	52.3	49.4	37.8	0	120	4
16/09/2014	0:00	55.3	50.8	47.2	38.1	0	120	5
17/09/2014	17/09/2014	53.7	48.7	45.1	36.3	0	0	0
17/09/2014	2:00	54.4	47.7	44	31.9	0	50	5
17/09/2014	3:00	55.8	48.9	45.1	32.1	0	50	9
17/09/2014	4:00	56.9	52.3	48.1	35	0	50	8
17/09/2014	5:00	59	55.7	51.6	40.3	0	80	5
17/09/2014	6:00	62.9	58.5	55.6	45.8	0	70	2
17/09/2014	7:00	65.4	61.6	57.7	50.9	0	80	8
17/09/2014	8:00	64.4	58.9	56.8	47.5	0	70	5
17/09/2014	9:00	61.7	57.9	55.3	45.8	0	90	8
17/09/2014	10:00	62.3	57.8	54.7	44.2	0	100	5
17/09/2014	11:00	62.1	57.8	54.9	45.3	0	180	11
17/09/2014	12:00	61.8	57.9	54.8	45.4	0	170	13
17/09/2014	13:00	61.4	57.9	54.8	46.5	0	170	13
17/09/2014	14:00	61.7	58.3	55.2	46.8	0	190	13
17/09/2014	15:00	62	58.6	55.6	47	0	220	18
17/09/2014	16:00	61.6	58.1	55.5	48.9	0	210	17
17/09/2014	17:00	60.5	58.1	55.3	49.1	0	210	11
17/09/2014	18:00	61.4	58.3	55.4	48.8	0	220	17
17/09/2014	19:00	59.9	57.3	54.7	48.1	0	220	11
17/09/2014	20:00	59.6	56.6	53.3	42.8	0	210	11
17/09/2014	21:00	59.3	55.7	52.3	41.5	0	190	13
17/09/2014	22:00	58.1	54.7	51.1	40.3	0	180	11
17/09/2014	23:00	56.8	53.7	49.8	39.2	0	170	11
17/09/2014	0:00	57.1	52.1	48.7	38.2	0	170	5

Hourly Noise Level Data

6 Acacia Court, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
18/09/2014	18/09/2014	56.4	50.8	47.2	36.2	0	0	0
18/09/2014	2:00	55.4	50.1	46	33.4	0	0	0
18/09/2014	3:00	55.9	49.3	45.5	33.1	0	170	2
18/09/2014	4:00	57.7	53.5	49.1	35.4	0	190	4
18/09/2014	5:00	60.5	57.3	53.4	43.9	0	180	8
18/09/2014	6:00	64.5	59.5	56.5	47.7	0	180	5
18/09/2014	7:00	64.1	59.8	56.8	51.7	0	0	0
18/09/2014	8:00	63.7	60	57	49.5	0	170	2
18/09/2014	9:00	62.1	58.9	56.5	47.8	0	190	5
18/09/2014	10:00	62.8	58.9	56.3	44.9	0	180	11
18/09/2014	11:00	63.4	58.9	56.1	45.1	0	210	11
18/09/2014	12:00	63	58.6	55.8	45.7	0	190	11
18/09/2014	13:00	62.6	58.8	55.8	45.8	0	220	13
18/09/2014	14:00	62.9	59.2	56.6	47.9	0	240	17
18/09/2014	15:00	62.6	59.5	56.6	48.5	0	210	18
18/09/2014	16:00	63.4	59.2	56.6	50.6	0	210	21
18/09/2014	17:00	62.2	58.8	56.2	49.6	0	210	22
18/09/2014	18:00	61.3	58.5	55.5	49.7	0	220	17
18/09/2014	19:00	61.5	58.1	55.2	47.9	0	220	15
18/09/2014	20:00	59.7	57.3	53.7	43.9	0	220	17
18/09/2014	21:00	58.7	56.3	52.6	42.9	0	220	11
18/09/2014	22:00	58.9	55.6	52	41.1	0	200	9
18/09/2014	23:00	58.6	54.4	51.3	40.3	0	190	11
18/09/2014	0:00	57.3	52.6	49.1	38.2	0	150	5
19/09/2014	19/09/2014	57.2	51.7	48.3	36	0	150	2
19/09/2014	2:00	56	49.4	45.6	33	0	160	8
19/09/2014	3:00	57.9	50.6	46.9	31.6	0	0	0
19/09/2014	4:00	58.7	54.2	50.1	37.8	0	0	0
19/09/2014	5:00	60.8	57.3	53.4	42.1	0	0	0
19/09/2014	6:00	64.9	60.8	57.8	49.6	0	0	0
19/09/2014	7:00	63.9	60.4	57.7	49.8	0	0	0
19/09/2014	8:00	63.1	59.1	56.5	48.8	0	90	2
19/09/2014	9:00	61.9	58.2	55.3	45.9	0	90	5
19/09/2014	10:00	62.2	58.3	55.3	42.8	0	140	8
19/09/2014	11:00	62.4	58.3	55.3	45.5	0	150	5
19/09/2014	12:00	62.0	57.9	54.9	47.3	0	160	9
19/09/2014	13:00	61.5	57.4	54.4	46.6	0	110	8
19/09/2014	14:00	60.4	57.3	54.3	47.5	0	180	9
19/09/2014	15:00	60.2	56.5	53.8	46.2	0	190	13
19/09/2014	16:00	60.8	57.1	54.2	47.2	0	210	11
19/09/2014	17:00	60.9	57.4	54.4	48.4	0	230	13
19/09/2014	18:00	61	57.4	55.1	47.9	0	230	13
19/09/2014	19:00	60.1	56.8	54.1	50.2	0	230	9
19/09/2014	20:00	59.2	56.2	53	43.9	0	190	8
19/09/2014	21:00	58.1	55.6	51.8	41.8	0	170	9
19/09/2014	22:00	58	55.1	51.4	41.9	0	180	9
19/09/2014	23:00	58.1	54.7	50.9	40	0	160	9
19/09/2014	0:00	56.5	53.5	49.6	39.4	0	150	8

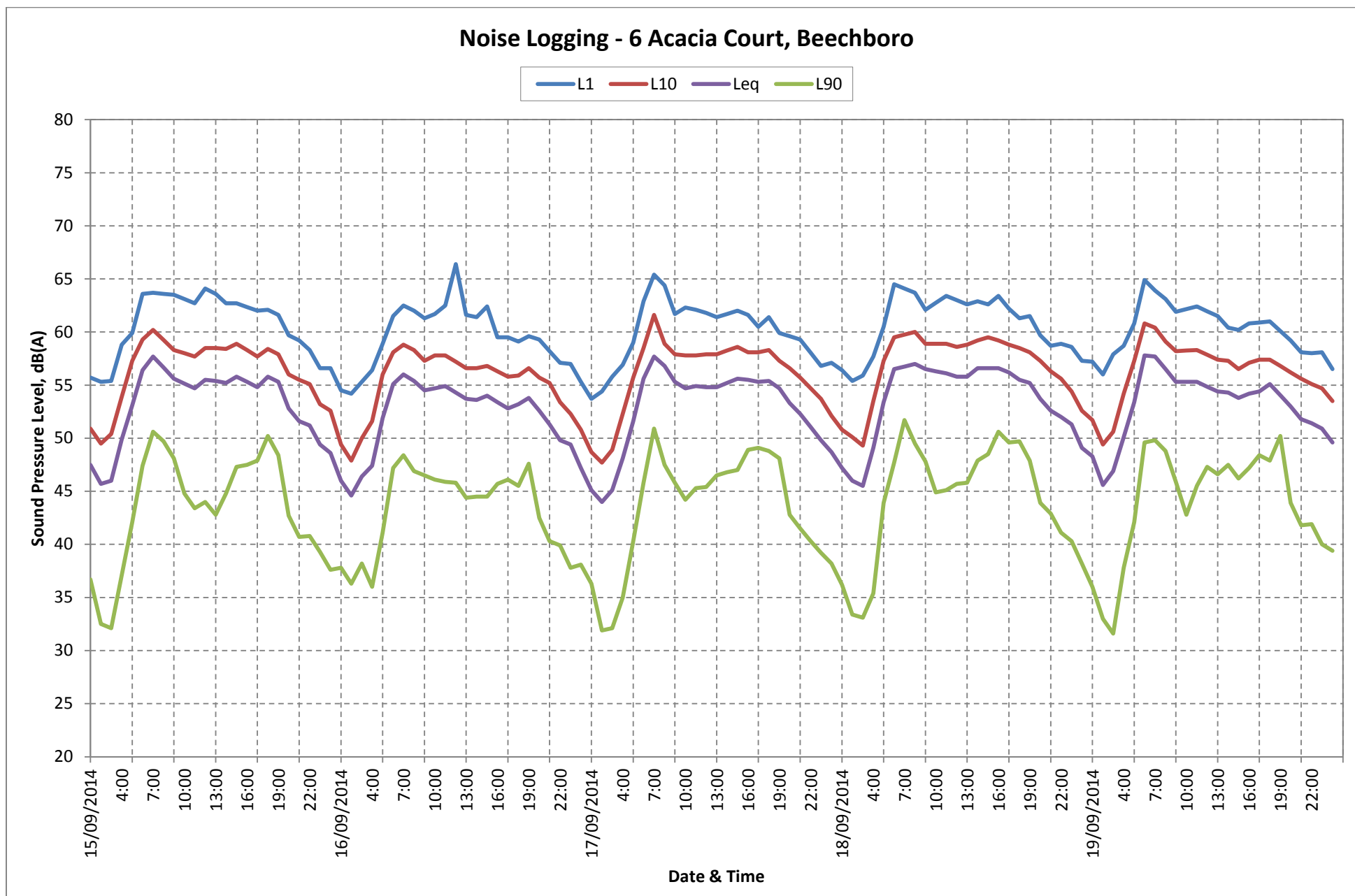


Table A11 – Results of Noise Logging 11 Willow Place, Beechboro

Date	L _{A10,18hour} , dB	L _{Aeq,24hour} , dB	L _{Aeq(Day)} , dB	L _{Aeq(Night)} , dB
27 October 2014	54.7	51.9	52.8	48.9
28 October 2014	53.7	51.1	52.1	48.1
29 October 2014	53.1	50.7	51.6	47.7
30 October 2014	54.4	51.6	52.9	47.1
31 October 2014	53.6	50.8	51.7	48.3
Weekday Average	53.9	51.2	52.2	48.0



Photograph A11– Noise Logger at 11 Willow Place, Beechboro

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 11 Willow Place
Locality	Beechboro
Occupier	Andrew Calvert 0499088630
Dates	27/10/2014 to 31/10/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	60m to Tonkin Hwy
Height of the road in relation to the ground	+2m
Road surface type	DGA
Speed zone	90 km/hr
Absorbing ground	60%
Angle of view	150
Road gradient	flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	2,4;
COMMENT	
Comment	Microphone placed on West façade at Rear of house Rear property fence between microphone and road. Earthen Bund and reserve between Tonkin and microphone. Pool to south of microphone position and small pergola to north.
REFERENCES	
AMG Z50 E/N	
Road name	Tonkin Highway.
EXCEL file	11 Willow Place MRWA Logger Sheet.xlsx
Raw data file	11 Willow Place_Sta.csv
EQUIPMENT	
Analyser number	15-203-999
Microphone number	15-203-999
Calibrator number	34883971
Calibrator values	93.8, 94.0
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 27/10/14 - Neg morning Winds <13 km/h, Pos in afternoon <24km/h 28/10/14 - Neg winds < 17km/h, Pos Afternoon <15 km/h 29/10/14 - Pos Winds <18 km/h most of the day 30/10/14 - Pos Winds <18 km/h most of the day 31/10/14 - Var winds up to 18km/h, one hour at 21 km/h

Hourly Noise Level Data

11 Willow Place, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
27/10/2014	27/10/2014	52.2	48.2	45.1	36.4	0	180	13
27/10/2014	2:00	51.1	45.6	42	31.3	0	180	9
27/10/2014	3:00	51.8	47.3	43.5	33.2	0	170	8
27/10/2014	4:00	54.3	50.1	46.4	37.2	0	170	9
27/10/2014	5:00	56	53.7	50.3	43.4	0	160	5
27/10/2014	6:00	60.6	57.3	54.6	47.6	0	0	0
27/10/2014	7:00	58.6	56.6	54.0	48.3	0	70	8
27/10/2014	8:00	59.3	55.8	53.3	47.6	0	100	13
27/10/2014	9:00	58.2	55	53.3	46.1	0	100	8
27/10/2014	10:00	59.3	55.8	52.7	44.7	0	100	5
27/10/2014	11:00	60.5	55.1	52.6	44.5	0	130	8
27/10/2014	12:00	60.9	55.5	52.9	45.3	0	220	11
27/10/2014	13:00	57.7	55.1	52.2	46.3	0	200	15
27/10/2014	14:00	59.6	56.3	53.5	47	0	210	18
27/10/2014	15:00	60.1	56.8	54	49.1	0	220	24
27/10/2014	16:00	60.6	56.4	53.6	47.4	0	220	21
27/10/2014	17:00	58.8	56	53.1	47.3	0	210	21
27/10/2014	18:00	60.3	56	53.7	46.5	0	210	15
27/10/2014	19:00	58.3	55.3	52.6	46.7	0	210	13
27/10/2014	20:00	58.6	54.6	52.4	45.3	0	180	15
27/10/2014	21:00	56.1	52.4	49.6	42.8	0	170	17
27/10/2014	22:00	54.5	52	48.8	42.5	0	170	17
27/10/2014	23:00	53.2	50.6	47.6	42.9	0	170	11
27/10/2014	0:00	52.4	49.3	47	42.5	0	160	8
28/10/2014	28/10/2014	51	47.8	44.8	38.1	0	170	13
28/10/2014	2:00	53	48.6	45.4	39.2	0	150	8
28/10/2014	3:00	53.4	49.2	45.5	35.4	0	0	0
28/10/2014	4:00	53.7	49.7	45.6	34.9	0	80	8
28/10/2014	5:00	55.7	53.2	49.5	41.7	0	80	8
28/10/2014	6:00	59.8	55.6	52.8	45.9	0	60	11
28/10/2014	7:00	60	56.3	54	47.7	0	80	13
28/10/2014	8:00	59	55.2	52.9	47.9	0	80	17
28/10/2014	9:00	61.3	55.2	53.2	46.6	0	100	13
28/10/2014	10:00	57.3	54.1	51.6	44.6	0	90	9
28/10/2014	11:00	58.3	53.8	51.1	44.2	0	110	9
28/10/2014	12:00	57.4	53.4	50.7	43.9	0	140	9
28/10/2014	13:00	57.9	54.4	51.4	43.7	0	10	9
28/10/2014	14:00	58.9	54.6	51.9	44.6	0	100	8
28/10/2014	15:00	61.2	54.9	52.4	45	0	190	11
28/10/2014	16:00	60.6	55.1	52.8	45.5	0	210	15
28/10/2014	17:00	59.2	54.6	53.2	46.8	0	210	13
28/10/2014	18:00	58.2	54.3	52.8	46.8	0	210	13
28/10/2014	19:00	57.2	54	52.3	45.7	0	200	13
28/10/2014	20:00	58.4	53.4	51.2	44.4	0	190	8
28/10/2014	21:00	56.4	52.7	50	42.9	0	190	13
28/10/2014	22:00	54.2	52.2	49.5	45.2	0	180	11
28/10/2014	23:00	53.3	50.7	48	44.1	0	190	9
28/10/2014	0:00	52.6	48.6	46.2	41.9	0	180	5
29/10/2014	29/10/2014	50.9	47	43.6	34.9	0	190	5
29/10/2014	2:00	50.6	45.2	41.6	31.7	0	170	9
29/10/2014	3:00	53	46.2	43	32.9	0	190	8
29/10/2014	4:00	53.6	48.5	45.6	34.8	0	210	13
29/10/2014	5:00	56	53.3	49.6	42.3	0	180	9
29/10/2014	6:00	60	56	53.3	46	0	190	8
29/10/2014	7:00	59.3	56.6	53.9	48.3	0	200	5
29/10/2014	8:00	60.2	56.0	53.6	47.4	0	170	8
29/10/2014	9:00	61	55.3	53.2	45.6	0	190	11
29/10/2014	10:00	59.5	54.9	52.6	45.3	0	210	8
29/10/2014	11:00	58	54.4	51.9	43.5	0	220	11
29/10/2014	12:00	58.6	54.9	52.3	43.4	0	210	11
29/10/2014	13:00	57.8	53.7	51.2	45.5	0	210	17
29/10/2014	14:00	56.9	52.4	50	42.2	0	230	13
29/10/2014	15:00	59.9	53.3	51.0	42.8	0	230	13
29/10/2014	16:00	62.9	54.2	52	45.2	0	220	15
29/10/2014	17:00	64.3	54	51.9	44.5	0	230	18
29/10/2014	18:00	56.4	53.4	51.7	44.4	0	230	13
29/10/2014	19:00	56.9	52.5	50.6	45.2	0	220	11
29/10/2014	20:00	55.2	51.9	49.4	45.1	0	240	17
29/10/2014	21:00	53.4	51.3	48.2	41.3	0	220	17
29/10/2014	22:00	54.8	50.9	48.4	41.6	0	210	11
29/10/2014	23:00	52.2	49.4	46.3	40.7	0	210	9
29/10/2014	0:00	50.9	47.5	44.7	40	0	230	11

Hourly Noise Level Data

11 Willow Place, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
30/10/2014	30/10/2014	50.9	46.6	43.2	33.8	0	220	15
30/10/2014	2:00	50	44.8	41.4	30.5	0	210	13
30/10/2014	3:00	50.7	45.4	42	32	0	210	9
30/10/2014	4:00	51.6	47.8	44.1	32.9	0	190	9
30/10/2014	5:00	54	51.4	48	40.7	0	190	8
30/10/2014	6:00	59.6	54	51.6	43.9	0	180	2
30/10/2014	7:00	58.1	54.1	52.2	45.6	0	150	9
30/10/2014	8:00	59.1	54.1	53	45.5	0	170	8
30/10/2014	9:00	60.1	53.7	52.5	45.3	0	200	4
30/10/2014	10:00	62.3	54.9	52.7	42.9	0	200	15
30/10/2014	11:00	60.7	54.3	52	44.2	0	210	13
30/10/2014	12:00	59.2	54.5	51.9	46.7	0	230	17
30/10/2014	13:00	57.6	54.6	51.8	45.7	0	240	18
30/10/2014	14:00	63.8	56.3	54	46.2	0	250	17
30/10/2014	15:00	60.6	57.7	55.1	50.5	0	230	18
30/10/2014	16:00	63.5	58.3	55.5	49.6	0	240	17
30/10/2014	17:00	61.3	56.5	54	47.9	0	240	18
30/10/2014	18:00	61.4	55.9	53.5	47.5	0	230	17
30/10/2014	19:00	59.2	55.2	52.4	47.3	0	240	18
30/10/2014	20:00	57.9	54	51.3	44.4	0	230	17
30/10/2014	21:00	55.4	52.6	49.6	43.8	0	240	13
30/10/2014	22:00	55.1	51.9	49.6	43.6	0	240	15
30/10/2014	23:00	57.5	51.4	49.2	42.5	0	240	15
30/10/2014	0:00	53.9	48.7	46.3	40.6	0	230	11
31/10/2014	31/10/2014	50.6	47.5	44	34.6	0	240	13
31/10/2014	2:00	51.0	45.6	43.1	34	0	240	8
31/10/2014	3:00	51.3	45.5	42.2	33.6	0	240	9
31/10/2014	4:00	51.7	47.8	43.9	34	0	240	9
31/10/2014	5:00	57.4	53.5	50.5	44.3	0	190	18
31/10/2014	6:00	59	56	53.2	47.1	0	170	11
31/10/2014	7:00	60.4	56.5	54.2	48.6	0	170	17
31/10/2014	8:00	60.4	56.5	53.7	47.7	0	170	15
31/10/2014	9:00	60.5	55.5	53.1	46.5	0	180	17
31/10/2014	10:00	58.6	55.2	52	44	0	180	15
31/10/2014	11:00	57.7	54.1	51.2	44.2	0	190	15
31/10/2014	12:00	55.4	52.5	49.7	42.1	0	160	13
31/10/2014	13:00	55.7	52.4	49.6	42.9	0	160	11
31/10/2014	14:00	58.5	54.6	51.7	44.6	0	290	13
31/10/2014	15:00	57.8	54.7	52	45.5	0	220	21
31/10/2014	16:00	64.7	55.2	52.5	46.4	0	210	17
31/10/2014	17:00	56.7	53.5	51	45	0	200	17
31/10/2014	18:00	60	54.1	52.1	45.5	0	210	18
31/10/2014	19:00	62	53.5	51.8	45.3	0	230	13
31/10/2014	20:00	55	52.1	49.8	43.2	0	220	9
31/10/2014	21:00	54	51.5	49.5	41.7	0	220	8
31/10/2014	22:00	53.9	51.3	49.0	43.2	0	230	5
31/10/2014	23:00	53.7	51	48.4	43.6	0	220	8
31/10/2014	0:00	53	50	47.7	42.1	0	0	0

Noise Logging - 11 Willow Place, Beechboro

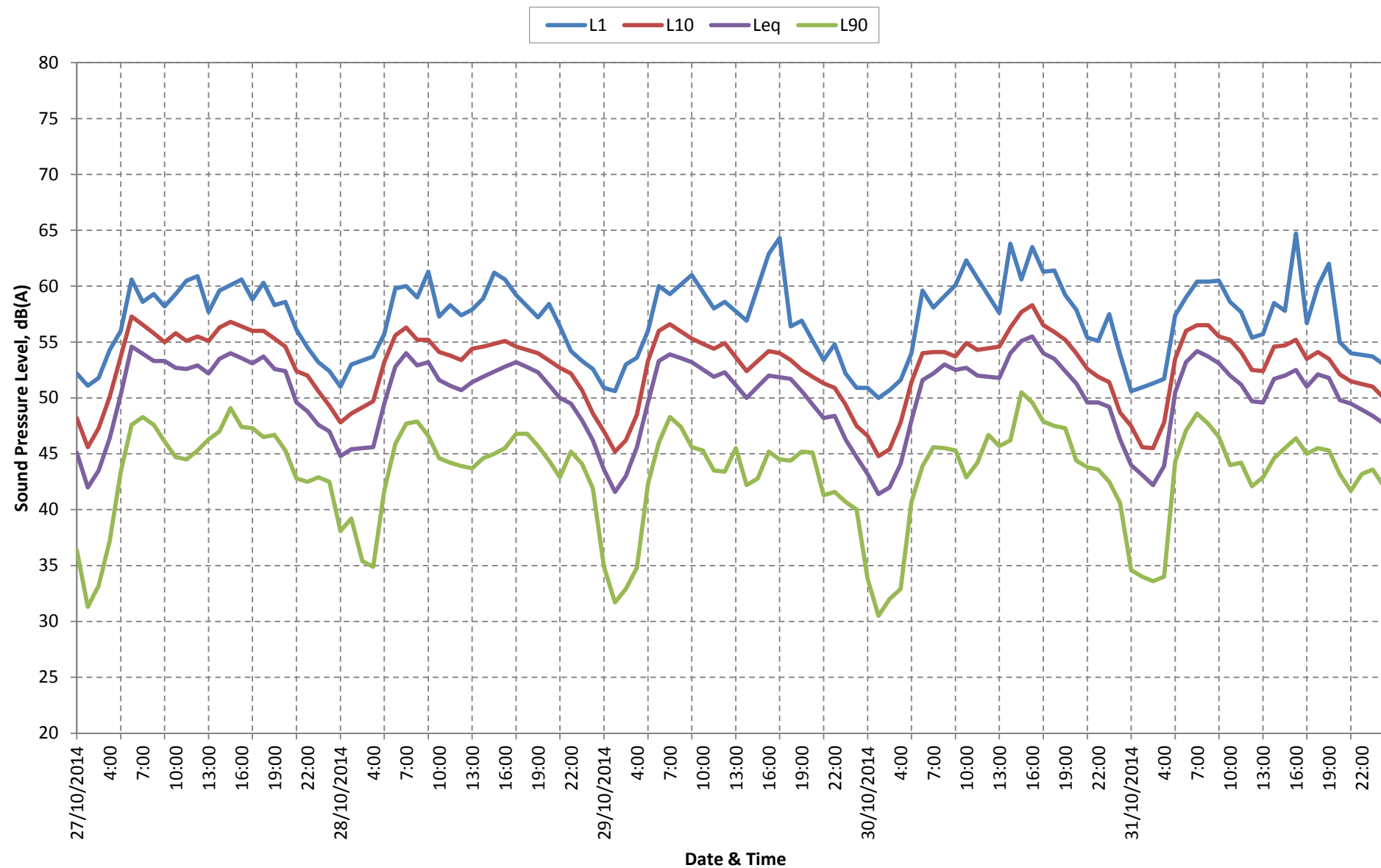


Table A12 – Results of Noise Logging 8 Jarrah Court, Beechboro

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
3 November 2014	52.0	49.8	50.7	46.8
4 November 2014	51.2	49.2	50.3	45.7
5 November 2014	51.7	49.3	50.7	44.0
6 November 2014*	57.5	55.2	56.7	48.1
7 November 2014*	55.8	54.1	55.1	50.9
Weekday Average	51.6	49.5	50.6	45.5

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A12 – Noise Logger at 8 Jarrah Court, Beechboro**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 8 Jarrah Court
Locality	Beechboro
Occupier	Christina D'Rozario 9377 7456
Dates	03/11/2014 to 07/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	100m to Reid Hwy
Height of the road in relation to the ground	+0m
Road surface type	DGA
Speed zone	70 km/h
Absorbing ground	70%
Angle of view	180
Road gradient	Flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	North West
Carriageways & lanes.	2,5
COMMENT	
Comment	Microphone placed on North West façade at Rear of house Rear property fence between microphone and road.
REFERENCES	
AMG Z50 E/N	
Road name	Reid Hwy
EXCEL file	8 Jarrah Ct MRWA Logger Sheet.xlsx
Raw data file	8 Jarrah_Sta.csv
EQUIPMENT	
Analyser number	87803a
Microphone number	87803a
Calibrator number	34883971
Calibrator values	94.0,94.1
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 3/11/14 - Var Winds <18 km/h, 3 hours of Neg at 21 km/h 4/11/14 - Pos Morning winds <11km/h, Afternoon <18 km/h 5/11/14 - Var Winds <18 km/h, 1 hour of Neg at 22 km/h 6/11/14 - Pos Winds 11 to 17 km/h, 2 hours at 21 km/h, night rain 7/11/14 - Continuous Pos winds up to 18km/h, one hour at 21 km/h

Hourly Noise Level Data

8 Jarrah Court, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
3/11/2014	3/11/2014	53	51.8	49.2	46.2	0	220	15
3/11/2014	2:00	52.4	48.3	46.6	40.5	0	230	13
3/11/2014	3:00	50.8	46.1	43	35.8	0	230	9
3/11/2014	4:00	50	46.3	43.4	37.6	0	190	8
3/11/2014	5:00	52.5	48.3	45.7	39.8	0	190	4
3/11/2014	6:00	59.9	53	50.2	47	0	190	2
3/11/2014	7:00	56.4	51.7	49.3	44.6	0	140	8
3/11/2014	8:00	55.4	49.8	47.6	43.4	0	160	11
3/11/2014	9:00	55.6	50.5	48.2	43.9	0	150	13
3/11/2014	10:00	55.1	50.5	48.3	43.8	0	190	11
3/11/2014	11:00	56.7	50.3	48	42.1	0	220	11
3/11/2014	12:00	55.9	52.5	49.7	44.7	0	210	15
3/11/2014	13:00	56.6	52.1	49.3	43.9	0	220	15
3/11/2014	14:00	55.2	52	49.6	44.5	0	210	21
3/11/2014	15:00	58	54.3	51.9	47.2	0	210	22
3/11/2014	16:00	59.2	55.4	52.9	47.8	0	210	18
3/11/2014	17:00	60.3	55.2	53.6	48.7	0	220	21
3/11/2014	18:00	57.8	55.1	52.9	48.7	0	220	17
3/11/2014	19:00	58.5	52.8	50.7	45.9	0	190	13
3/11/2014	20:00	54.9	53.3	52.2	49	0	200	13
3/11/2014	21:00	54.1	52.8	51.9	50.6	0	180	11
3/11/2014	22:00	53.5	51.4	48.9	45.2	0	170	13
3/11/2014	23:00	51.7	49.9	45.8	40.1	0	170	13
3/11/2014	0:00	49.3	46.7	44.5	42.9	0	170	9
4/11/2014	4/11/2014	48.7	44.8	42.3	38.7	0	190	9
4/11/2014	2:00	48.1	42.8	40.1	33.8	0	170	11
4/11/2014	3:00	48.6	42.8	40.5	33.6	0	160	9
4/11/2014	4:00	48.9	44.3	41.5	35.6	0	180	5
4/11/2014	5:00	56.9	52	48.9	41.2	0	0	0
4/11/2014	6:00	56.5	51.8	49.6	45.1	0	0	0
4/11/2014	7:00	56	50.4	48.6	44.7	0	80	9
4/11/2014	8:00	55.9	49.8	48.4	44	0	120	11
4/11/2014	9:00	53.9	48.8	46.5	41.8	0	130	9
4/11/2014	10:00	58.3	49.6	47.7	41.7	0	160	5
4/11/2014	11:00	53.6	49.7	47	41.8	0	40	9
4/11/2014	12:00	54	49.1	46.5	40.8	0	170	9
4/11/2014	13:00	55.1	50	47.5	41	0	250	17
4/11/2014	14:00	59.4	55.7	53	45.1	0	240	17
4/11/2014	15:00	58.3	54.7	52.3	48.5	0	200	18
4/11/2014	16:00	56.2	53.7	51.5	47.6	0	230	18
4/11/2014	17:00	58.1	53.7	52.1	48.3	0	220	15
4/11/2014	18:00	57.7	54.2	52.5	49.2	0	220	15
4/11/2014	19:00	57.1	54	52.1	48.2	0	210	15
4/11/2014	20:00	57.7	55	52.7	48.2	0	190	11
4/11/2014	21:00	52.7	50.5	48.7	44.7	0	180	15
4/11/2014	22:00	52.9	48.7	47	43.8	0	180	13
4/11/2014	23:00	50.6	47.2	46.1	43.7	0	190	13
4/11/2014	0:00	51	46.8	45.3	41.3	0	180	13
5/11/2014	5/11/2014	50.1	44.4	42.7	38.2	0	180	9
5/11/2014	2:00	48.9	41.9	40	35.1	0	160	8
5/11/2014	3:00	45.8	40.4	37.9	34.4	0	180	5
5/11/2014	4:00	49.1	46	43.4	38.5	0	190	2
5/11/2014	5:00	52.5	48.2	46.2	42.4	0	160	5
5/11/2014	6:00	55.2	49.7	47.8	46.2	0	150	5
5/11/2014	7:00	57.4	51.1	49.4	45.5	0	210	5
5/11/2014	8:00	58.4	51.6	49.6	45.8	0	190	8
5/11/2014	9:00	56.5	52.1	49.7	45.7	0	210	9
5/11/2014	10:00	60	52.1	49.6	45.5	0	210	13
5/11/2014	11:00	56	52	49.5	44.3	0	210	11
5/11/2014	12:00	57.4	52.1	49.7	43.6	0	230	9
5/11/2014	13:00	56.9	51.7	49.3	44.4	0	210	11
5/11/2014	14:00	55.8	52.9	50.5	46	0	240	13
5/11/2014	15:00	59	54.1	52.1	48.1	0	220	13
5/11/2014	16:00	57.3	54.2	52.1	48.3	0	230	15
5/11/2014	17:00	57.5	54.3	52.1	48.1	0	220	22
5/11/2014	18:00	59	56.1	54	50.2	0	220	18
5/11/2014	19:00	59.7	54.3	52.2	47.9	0	200	13
5/11/2014	20:00	57.7	52.0	50.2	47	0	210	13
5/11/2014	21:00	53.6	49.6	48.2	45.6	0	190	11
5/11/2014	22:00	59.9	48.9	46.3	44.3	0	180	13
5/11/2014	23:00	49.7	46.5	44.4	41.2	0	170	9
5/11/2014	0:00	48.3	44.3	42.2	39.1	0	170	2

Hourly Noise Level Data

8 Jarrah Court, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
6/11/2014	6/11/2014	48.1	44	41.8	37.6	0	170	5
6/11/2014	2:00	48.9	41.9	39.9	35.1	0	170	9
6/11/2014	3:00	45.8	40.4	37.9	32.8	0	150	8
6/11/2014	4:00	50.2	44.9	42.2	34.4	0	0	0
6/11/2014	5:00	59.7	48.7	46.7	41.4	0	170	2
6/11/2014	6:00	58.4	53.2	51.1	45.8	0	0	0
6/11/2014	7:00	55.7	51.8	49.6	45.4	0	0	0
6/11/2014	8:00	58.3	52.6	50.2	45.5	0	80	5
6/11/2014	9:00	57.3	54.1	51.8	47.7	0	260	9
6/11/2014	10:00	60.6	55.2	53.1	51.5	0	300	11
6/11/2014	11:00	59.2	56.3	54.4	51	0	320	11
6/11/2014	12:00	59.1	56.6	54.4	50.3	0	290	13
6/11/2014	13:00	62.2	59.2	56.7	52.1	0	280	13
6/11/2014	14:00	61.9	59.1	57.1	53.4	0	310	17
6/11/2014	15:00	62.9	60.3	58.4	55	0	310	17
6/11/2014	16:00	65.4	61.2	59.3	55.7	0	300	21
6/11/2014	17:00	63.3	60.9	59	56.3	0	300	17
6/11/2014	18:00	64.8	61.5	59.7	56.4	0	300	15
6/11/2014	19:00	63.2	60.7	58.3	53.9	0	300	13
6/11/2014	20:00	61.5	58.9	56.8	53.4	0	300	17
6/11/2014	21:00	62.9	59.1	57	52.8	0	310	21
6/11/2014	22:00	61.5	58.9	56.1	51.6	1.4	270	5
6/11/2014	23:00	56.2	54	51.8	48	0.2	240	15
6/11/2014	0:00	56.9	53.9	51.4	46.7	0.6	240	11
7/11/2014	7/11/2014	54	51.1	48.1	43.1	0	250	15
7/11/2014	2:00	54.4	51	47.9	41.8	0	250	15
7/11/2014	3:00	54.6	51.1	48.2	42.2	0	250	15
7/11/2014	4:00	57	53.3	50.4	44.2	0	240	17
7/11/2014	5:00	57.7	55	52.4	47.8	0	250	13
7/11/2014	6:00	60.8	58.7	56.4	51.9	0	250	9
7/11/2014	7:00	60.5	58.6	56.6	53.5	0	250	15
7/11/2014	8:00	61.5	59.3	57.1	53.6	0	250	15
7/11/2014	9:00	62.5	59.3	57.5	53.3	0	230	17
7/11/2014	10:00	62.6	59.9	57.6	53.8	0	250	17
7/11/2014	11:00	60.6	58.2	55.8	51.9	0	250	17
7/11/2014	12:00	62.2	58	56	50.4	0	230	18
7/11/2014	13:00	60.6	57	54.6	50.2	0	230	17
7/11/2014	14:00	61.2	57	54.8	50.3	0	210	15
7/11/2014	15:00	59.4	56.8	54.2	49.5	0	220	17
7/11/2014	16:00	58	55.7	53.1	48.2	0	250	17
7/11/2014	17:00	59.5	56.6	54.3	49.6	0	230	21
7/11/2014	18:00	59.2	55.9	53.3	48.7	0	210	17
7/11/2014	19:00	59.8	55	53	48.6	0	210	11
7/11/2014	20:00	60.2	56.5	53.5	46.7	0	200	9
7/11/2014	21:00	56.8	54	53.7	52.6	0	190	11
7/11/2014	22:00	56.2	52.9	49.1	43.4	0	170	9
7/11/2014	23:00	52.6	47.9	46.2	43	0	170	8
7/11/2014	0:00	51.8	46.4	44.9	41.1	0	160	8

Noise Logging - 8 Jarrah Court, Beechboro

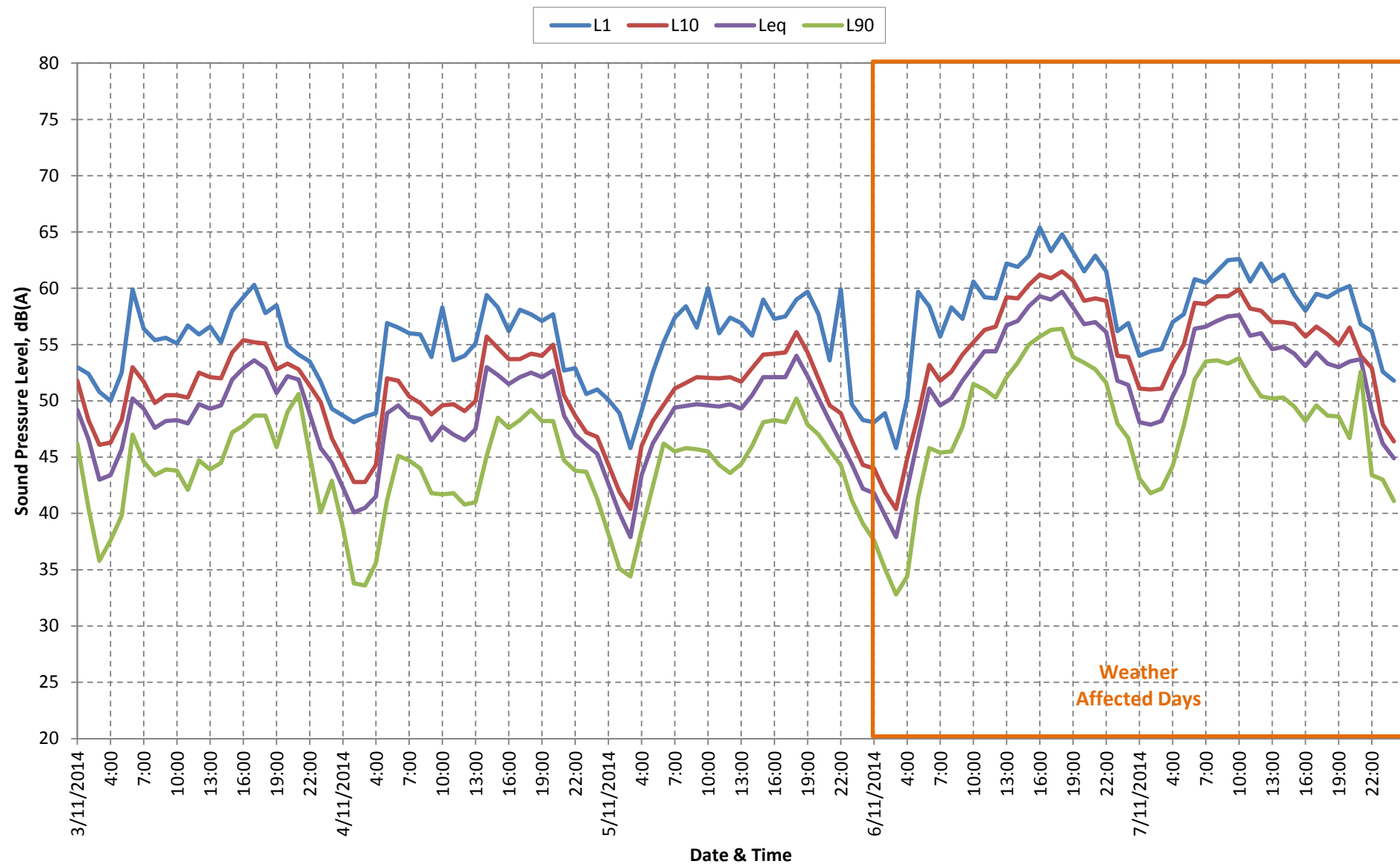


Table A13 – Results of Noise Logging 43 Mitra Loop, Beechboro

Date	L _{A10,18hour} , dB	L _{Aeq,24hour} , dB	L _{Aeq(Day)} , dB	L _{Aeq(Night)} , dB
27 October 2014	50.5	51.1	49.2	53.4
28 October 2014	50.9	51.4	50.9	52.2
29 October 2014	51.9	52.9	50.9	55.4
30 October 2014	50.1	49.2	49.2	49.3
31 October 2014	50.9	51.8	50.2	53.9
Weekday Average	50.9	51.3	50.1	52.8



Photograph A13– Noise Logger at 43 Mitra Loop, Beechboro

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 43 Mitra Loop
Locality	Beechboro
Occupier	Paul Griffiths 0407980045
Dates	27/10/2014 to 31/10/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	road yet to be constructed
Height of the road in relation to the ground	road yet to be constructed
Road surface type	road yet to be constructed
Speed zone	road yet to be constructed
Absorbing ground	road yet to be constructed
Angle of view	road yet to be constructed
Road gradient	road yet to be constructed
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	road yet to be constructed
COMMENT	
Comment	Microphone placed on West façade at Rear of house Rear property fence between microphone and future road.
REFERENCES	
AMG Z50 E/N	
Road name	Future Tonkin Highway.
EXCEL file	43 Mitra Lp MRWA Logger Sheet.xlsx
Raw data file	43 Mitra Loop 87802B_Sta.csv
EQUIPMENT	
Analyser number	15-203-999
Microphone number	15-203-999
Calibrator number	34883971
Calibrator values	94.0,93.8
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 27/10/14 - Neg morning Winds <13 km/h, Pos in afternoon <24km/h 28/10/14 - Neg winds < 17km/h, Pos Afternoon <15 km/h 29/10/14 - Pos Winds <18 km/h most of the day 30/10/14 - Pos Winds <18 km/h most of the day 31/10/14 - Var winds up to 18km/h, one hour at 21 km/h

Hourly Noise Level Data

43 Mitra Loop, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
27/10/2014	27/10/2014	52.8	50.8	46.2	35.8	0	180	13
27/10/2014	2:00	42.4	39.8	36.5	30	0	180	9
27/10/2014	3:00	43.6	39.4	38.1	31.3	0	170	8
27/10/2014	4:00	42.9	39.9	38.1	33	0	170	9
27/10/2014	5:00	61.2	61.1	57.5	51.5	0	160	5
27/10/2014	6:00	51.9	44.7	43.6	38.7	0	0	0
27/10/2014	7:00	48.2	45.1	43.6	40.9	0	70	8
27/10/2014	8:00	47.7	43.8	42.2	38.9	0	100	13
27/10/2014	9:00	56	45.8	44.9	37.7	0	100	8
27/10/2014	10:00	58.3	47	46.6	38.4	0	100	5
27/10/2014	11:00	51.2	43.5	44	36.6	0	130	8
27/10/2014	12:00	54.8	47.6	45.9	38.6	0	220	11
27/10/2014	13:00	51.2	48.6	45.3	39.9	0	200	15
27/10/2014	14:00	54.5	51.7	49.5	46	0	210	18
27/10/2014	15:00	55.4	52.9	51.1	48.2	0	220	24
27/10/2014	16:00	55.6	52.9	51	48.1	0	220	21
27/10/2014	17:00	55.3	49.3	47.9	44.1	0	210	21
27/10/2014	18:00	52.5	48.4	46.8	43.9	0	210	15
27/10/2014	19:00	55.6	50.9	48.6	44.2	0	210	13
27/10/2014	20:00	55.9	53.4	52	49.5	0	180	15
27/10/2014	21:00	54.6	53.6	52	49.9	0	170	17
27/10/2014	22:00	58.1	57.3	54.6	50.1	0	170	17
27/10/2014	23:00	62.7	61.9	59.2	55.8	0	170	11
27/10/2014	0:00	56.7	55.3	54.5	53.5	0	160	8
28/10/2014	28/10/2014	55.8	55.4	54.8	53.9	0	170	13
28/10/2014	2:00	55.5	53.4	52.1	49.6	0	150	8
28/10/2014	3:00	53.3	52	50.8	49.2	0	0	0
28/10/2014	4:00	50.7	50.1	49.3	48.1	0	80	8
28/10/2014	5:00	53.8	50.8	45.6	32.9	0	80	8
28/10/2014	6:00	54.2	45.7	45.2	38.4	0	60	11
28/10/2014	7:00	56.2	46.9	46.4	41.1	0	80	13
28/10/2014	8:00	51.9	48.9	46.5	42.8	0	80	17
28/10/2014	9:00	65.3	50.3	51.4	39.8	0	100	13
28/10/2014	10:00	51.6	42.7	42.1	37.5	0	90	9
28/10/2014	11:00	60.3	47.1	47.5	38.3	0	110	9
28/10/2014	12:00	60.3	49	48.1	36.1	0	140	9
28/10/2014	13:00	60.1	53.6	48.9	35.5	0	10	9
28/10/2014	14:00	61.9	52.3	48.9	36.7	0	100	8
28/10/2014	15:00	51.3	46.7	43.4	37.3	0	190	11
28/10/2014	16:00	55	49.2	47.4	43	0	210	15
28/10/2014	17:00	53.2	47.8	46.2	43.2	0	210	13
28/10/2014	18:00	52.2	47.3	45.7	42.8	0	210	13
28/10/2014	19:00	67.1	56.4	56.9	43.3	0	200	13
28/10/2014	20:00	61.4	57.5	56.2	51.4	0	190	8
28/10/2014	21:00	56	55.2	53.6	50.6	0	190	13
28/10/2014	22:00	53.3	52.9	52.2	50.9	0	180	11
28/10/2014	23:00	54.7	54.3	53.2	51.4	0	190	9
28/10/2014	0:00	58.5	57.7	55.8	52.9	0	180	5
29/10/2014	29/10/2014	57.6	56.5	54.6	52.2	0	190	5
29/10/2014	2:00	57.3	56.6	55.9	54.8	0	170	9
29/10/2014	3:00	59.4	58.6	57.2	55.5	0	190	8
29/10/2014	4:00	57.1	56.4	54.4	48.1	0	210	13
29/10/2014	5:00	61.1	60.9	57.7	52.8	0	180	9
29/10/2014	6:00	54.3	49.5	47.1	42.7	0	190	8
29/10/2014	7:00	51.3	48.4	46.6	43.9	0	200	5
29/10/2014	8:00	55.3	47	47.1	42.2	0	170	8
29/10/2014	9:00	61.2	55.7	51.9	41.3	0	190	11
29/10/2014	10:00	58	49.4	47.3	40.5	0	210	8
29/10/2014	11:00	54.8	48.7	47	42.6	0	220	11
29/10/2014	12:00	50.8	48.4	46.3	43.3	0	210	11
29/10/2014	13:00	52.7	47.9	46.4	43.3	0	210	17
29/10/2014	14:00	55.4	51.2	49.1	45.7	0	230	13
29/10/2014	15:00	52.4	49.5	47.9	45.5	0	230	13
29/10/2014	16:00	67.4	59.3	56.4	47.8	0	220	15
29/10/2014	17:00	54.3	50.3	48.4	45.2	0	230	18
29/10/2014	18:00	56.1	49.1	48.2	44.2	0	230	13
29/10/2014	19:00	61.1	55.1	51.2	43.9	0	220	11
29/10/2014	20:00	58.9	57.5	56.3	54.8	0	240	17
29/10/2014	21:00	56.5	54.2	52.8	49.3	0	220	17
29/10/2014	22:00	52.9	49.4	47.9	44.4	0	210	11
29/10/2014	23:00	61.2	60.8	57.4	52.3	0	210	9
29/10/2014	0:00	54.5	52.1	49.3	44.6	0	230	11

Hourly Noise Level Data

43 Mitra Loop, Beechboro

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
30/10/2014	30/10/2014	55.2	53.3	51.4	47.3	0	220	15
30/10/2014	2:00	54.9	54.3	50.7	42.1	0	210	13
30/10/2014	3:00	56.1	55.2	52.4	44	0	210	9
30/10/2014	4:00	54.7	53.1	49.8	40.4	0	190	9
30/10/2014	5:00	55.6	52.5	48.4	39.7	0	190	8
30/10/2014	6:00	51.3	49.5	46.1	38.7	0	180	2
30/10/2014	7:00	50.1	46	43.7	39.8	0	150	9
30/10/2014	8:00	50.7	46.3	44.5	40.3	0	170	8
30/10/2014	9:00	57.1	49.3	48.2	41.7	0	200	4
30/10/2014	10:00	56.5	49.9	48	42.7	0	200	15
30/10/2014	11:00	54	49.4	47.3	42.9	0	210	13
30/10/2014	12:00	57.1	52.6	51.1	48	0	230	17
30/10/2014	13:00	54.1	50.7	48.7	45.5	0	240	18
30/10/2014	14:00	57.1	52.4	50.4	46.6	0	250	17
30/10/2014	15:00	58.9	54.6	52.4	48.9	0	230	18
30/10/2014	16:00	56.8	53.4	51.6	48.4	0	240	17
30/10/2014	17:00	54.1	51.4	49.9	47.5	0	240	18
30/10/2014	18:00	59.7	52.2	51	46.8	0	230	17
30/10/2014	19:00	54	50.8	48.8	45.2	0	240	18
30/10/2014	20:00	53.5	50.7	47.7	43.5	0	230	17
30/10/2014	21:00	53.5	51.2	47.8	44.7	0	240	13
30/10/2014	22:00	53.5	49.5	46.2	40.8	0	240	15
30/10/2014	23:00	54.3	47.7	45.7	40.7	0	240	15
30/10/2014	0:00	47.7	44.4	41.7	38.2	0	230	11
31/10/2014	31/10/2014	47.3	44.9	41.6	37.1	0	240	13
31/10/2014	2:00	64.2	45.4	49.8	36.2	0	240	8
31/10/2014	3:00	46.8	45.3	40.9	35.7	0	240	9
31/10/2014	4:00	51.2	49.3	45	36.7	0	240	9
31/10/2014	5:00	63.3	63.1	59.1	51.8	0	190	18
31/10/2014	6:00	55.4	49.7	47.7	43.2	0	170	11
31/10/2014	7:00	52.8	49.5	47.5	44.5	0	170	17
31/10/2014	8:00	54.8	50	48.5	45	0	170	15
31/10/2014	9:00	53.6	48.3	46.8	43.1	0	180	17
31/10/2014	10:00	53.9	47.7	46.1	41.9	0	180	15
31/10/2014	11:00	54.6	47.2	46	41.3	0	190	15
31/10/2014	12:00	48.5	43.7	41.4	37.1	0	160	13
31/10/2014	13:00	49.1	42.8	40.5	35.7	0	160	11
31/10/2014	14:00	54.9	52	49.4	40.2	0	290	13
31/10/2014	15:00	57.9	52.7	51.8	47.8	0	220	21
31/10/2014	16:00	56.7	49.8	48.8	45.2	0	210	17
31/10/2014	17:00	59	50.3	49.1	44.1	0	200	17
31/10/2014	18:00	54.7	48.9	48.1	43.5	0	210	18
31/10/2014	19:00	57.5	53.2	49.6	43.6	0	230	13
31/10/2014	20:00	60.3	58.8	57.5	55.4	0	220	9
31/10/2014	21:00	56.8	53.9	51.8	45.4	0	220	8
31/10/2014	22:00	52.6	51.9	50.8	48.9	0	230	5
31/10/2014	23:00	63.4	63.2	59.3	53.1	0	220	8
31/10/2014	0:00	53.7	51.5	48.6	44.2	0	0	0

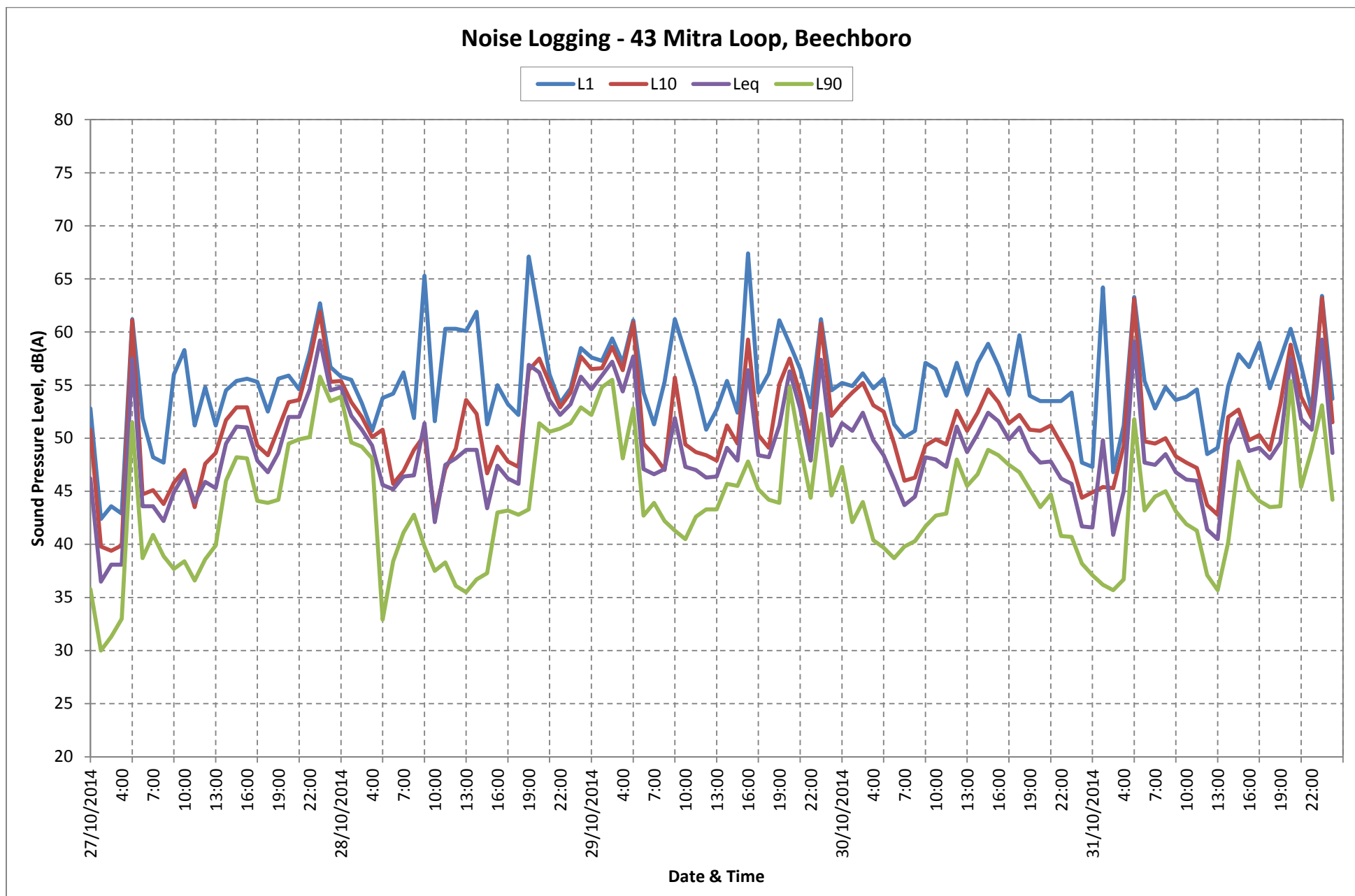


Table A14 – Results of Noise Logging 10 Cootha Court, Ballajura

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq}(Day), dB	L_{Aeq}(Night), dB
3 November 2014	48.4	46.8	47.9	42.8
4 November 2014	48.1	47.1	48.0	44.3
5 November 2014	47.0	45.2	46.2	42.4
6 November 2014*	46.4	44.6	45.5	41.6
7 November 2014*	47.8	45.0	46.1	41.5
Weekday Average	47.8	46.4	47.4	43.2

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A14 – Noise Logger at 10 Cootha Court, Ballajura**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 10 Cootha Court
Locality	Ballajura
Occupier	Cuong Diep 0402003411
Dates	3/11/2014 to 7/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	80m to Hepburn
Height of the road in relation to the ground	+0m
Road surface type	DGA
Speed zone	60 km/h
Absorbing ground	70%
Angle of view	180
Road gradient	Flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	East
Carriageways & lanes.	1,2
COMMENT	
Comment	Microphone placed on East façade at Rear of house Rear property fence between microphone and road.
REFERENCES	
AMG Z50 E/N	
Road name	Hepburn Ave
EXCEL file	10 Cootha Ct MRWA Logger Sheet.xlsx
Raw data file	10 Cootha_Sta.csv
EQUIPMENT	
Analyser number	16-004-041
Microphone number	16-004-041
Calibrator number	34883971
Calibrator values	93.8,93.8
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 3/11/14 - Var Winds <18 km/h, 3 hours of Neg at 21 km/h 4/11/14 - Pos morning winds <11km/h, Neg Afternoon <18 km/h 5/11/14 - Var Winds <18 km/h, 1 hour of Neg at 22 km/h 6/11/14 - Neg Winds 11 to 17 km/h, 2 hours at 21 km/h, night rain 7/11/14 - Neg winds up to 18km/h, one hour at 21 km/h

Hourly Noise Level Data

10 Cootha Court, Ballajura

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
3/11/2014	3/11/2014	42.9	36.7	34.7	30.5	0	220	15
3/11/2014	2:00	41.4	35.8	34.0	29.7	0	230	13
3/11/2014	3:00	39.8	34.8	33.2	29.4	0	230	9
3/11/2014	4:00	45.7	38.1	36.1	30.9	0	190	8
3/11/2014	5:00	50.8	46.1	43	36.1	0	190	4
3/11/2014	6:00	58.2	52.2	49.9	44.8	0	190	2
3/11/2014	7:00	64.6	55.1	54.1	49.5	0	140	8
3/11/2014	8:00	58.7	51.7	49.4	44.5	0	160	11
3/11/2014	9:00	57.8	49.8	48	42.2	0	150	13
3/11/2014	10:00	58.2	48.9	47.4	40.3	0	190	11
3/11/2014	11:00	56.4	47.8	46.7	39.1	0	220	11
3/11/2014	12:00	53.3	46.6	43.9	38.2	0	210	15
3/11/2014	13:00	52.8	47.2	44	38.4	0	220	15
3/11/2014	14:00	55.3	48.1	45.8	40.1	0	210	21
3/11/2014	15:00	58.9	49.6	47	42.1	0	210	22
3/11/2014	16:00	57.9	50.2	48.2	43.2	0	210	18
3/11/2014	17:00	55.6	51	48.4	44.3	0	220	21
3/11/2014	18:00	55.3	50.2	47.8	43.5	0	220	17
3/11/2014	19:00	54.8	49.1	46.8	42.3	0	190	13
3/11/2014	20:00	53.9	48.1	46.2	41.6	0	200	13
3/11/2014	21:00	52.9	46.8	44.9	41.1	0	180	11
3/11/2014	22:00	51.3	45.5	43.5	40.3	0	170	13
3/11/2014	23:00	48.5	43.9	41.9	38.8	0	170	13
3/11/2014	0:00	46.8	41.7	39.6	36.1	0	170	9
4/11/2014	4/11/2014	49.7	40.6	39	33.6	0	190	9
4/11/2014	2:00	45.7	38.4	36.5	31.8	0	170	11
4/11/2014	3:00	47	40.9	38.1	32.1	0	160	9
4/11/2014	4:00	45.7	40.7	38.1	33.1	0	180	5
4/11/2014	5:00	54.7	48.3	45.9	39.3	0	0	0
4/11/2014	6:00	57.2	53.1	50.9	46.6	0	0	0
4/11/2014	7:00	62.8	54.2	53.8	47.9	0	80	9
4/11/2014	8:00	59	53.4	51.2	46.8	0	120	11
4/11/2014	9:00	59.7	50.2	47.9	42.8	0	130	9
4/11/2014	10:00	54.4	46.9	44.5	39.5	0	160	5
4/11/2014	11:00	56.1	46.0	43.7	39	0	40	9
4/11/2014	12:00	52.4	45.1	42.8	35.4	0	170	9
4/11/2014	13:00	55.2	44.8	43.5	34.8	0	250	17
4/11/2014	14:00	57.7	46.4	45.0	36.2	0	240	17
4/11/2014	15:00	55.9	48	46.4	40.8	0	200	18
4/11/2014	16:00	57.3	49.8	47.6	42.1	0	230	18
4/11/2014	17:00	55.6	50.7	48.7	43.7	0	220	15
4/11/2014	18:00	54.7	50.5	49	47.1	0	220	15
4/11/2014	19:00	55.1	49.7	48.9	46.7	0	210	15
4/11/2014	20:00	55.8	48.5	47.8	42	0	190	11
4/11/2014	21:00	55.1	47.2	45.8	41.7	0	180	15
4/11/2014	22:00	52.9	47.3	45	41.1	0	180	13
4/11/2014	23:00	50.7	45	43	39.2	0	190	13
4/11/2014	0:00	47.8	42.5	40.2	36.7	0	180	13
5/11/2014	5/11/2014	47.9	41.2	38.1	35.7	0	180	9
5/11/2014	2:00	44.4	38	35.9	32	0	160	8
5/11/2014	3:00	46.4	38	36.4	32	0	180	5
5/11/2014	4:00	44.4	40.3	37.7	33.2	0	190	2
5/11/2014	5:00	50.8	46.5	43.7	38.4	0	160	5
5/11/2014	6:00	54.7	50.8	48.5	43.9	0	150	5
5/11/2014	7:00	55.6	50.5	48.6	43.7	0	210	5
5/11/2014	8:00	58.7	51.3	49.5	41.8	0	190	8
5/11/2014	9:00	53.5	46.9	44.7	39.3	0	210	9
5/11/2014	10:00	56.7	46.4	44.5	37	0	210	13
5/11/2014	11:00	50.8	44.4	41.9	37.3	0	210	11
5/11/2014	12:00	52.2	44.7	42.4	35.5	0	230	9
5/11/2014	13:00	54.9	45.3	43.3	36	0	210	11
5/11/2014	14:00	53.3	44.7	42.6	35.6	0	240	13
5/11/2014	15:00	53.9	46.3	43.8	37.2	0	220	13
5/11/2014	16:00	55.7	48.1	45.7	39.4	0	230	15
5/11/2014	17:00	53.8	48.9	48.1	42	0	220	22
5/11/2014	18:00	54.6	50.2	48.1	43.5	0	220	18
5/11/2014	19:00	56.1	49.8	47.7	43.6	0	200	13
5/11/2014	20:00	54.9	49.6	47.6	42.5	0	210	13
5/11/2014	21:00	53.8	46.9	44.9	40.2	0	190	11
5/11/2014	22:00	56.4	47.2	45.6	39.3	0	180	13
5/11/2014	23:00	50.4	43.1	41.3	36.8	0	170	9
5/11/2014	0:00	50.1	41.1	39.7	34.9	0	170	2

Hourly Noise Level Data

10 Cootha Court, Ballajura

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
6/11/2014	6/11/2014	47.1	39.9	38.1	33.6	0	170	5
6/11/2014	2:00	45.3	38.3	36.8	31.7	0	170	9
6/11/2014	3:00	44.3	39.1	36.6	32.4	0	150	8
6/11/2014	4:00	44.8	38.8	37.5	32.1	0	0	0
6/11/2014	5:00	49.9	43.8	40.7	32.8	0	170	2
6/11/2014	6:00	53.9	50.5	47.4	42.2	0	0	0
6/11/2014	7:00	59.7	52	51	42.1	0	0	0
6/11/2014	8:00	54.8	48.3	45.5	39.1	0	80	5
6/11/2014	9:00	53.3	45.4	42.8	35.4	0	260	9
6/11/2014	10:00	52.7	44.3	41.6	34	0	300	11
6/11/2014	11:00	52	42.9	41	34.5	0	320	11
6/11/2014	12:00	51.6	43.2	40.9	34.1	0	290	13
6/11/2014	13:00	54.1	45.2	43.7	35.5	0	280	13
6/11/2014	14:00	53.1	46.2	43.5	36.4	0	310	17
6/11/2014	15:00	54.3	47.7	45.5	38.5	0	310	17
6/11/2014	16:00	58.4	49.2	47.5	39.9	0	300	21
6/11/2014	17:00	54.6	48.3	46.3	40.9	0	300	17
6/11/2014	18:00	54.3	47.3	45.1	40.2	0	300	15
6/11/2014	19:00	54.4	46.6	44.8	38.9	0	300	13
6/11/2014	20:00	54.5	45.9	44.5	38.6	0	300	17
6/11/2014	21:00	51.9	45.7	43.3	36.7	0	310	21
6/11/2014	22:00	59.2	50	47.6	36.7	1.4	270	5
6/11/2014	23:00	49.1	41.5	39.2	33.1	0.2	240	15
6/11/2014	0:00	51.7	45.5	42.6	36.4	0.6	240	11
7/11/2014	7/11/2014	46	39.2	37.1	31.5	0	250	15
7/11/2014	2:00	47.3	40.2	38.1	32.5	0	250	15
7/11/2014	3:00	50.1	42.7	40.3	32.9	0	250	15
7/11/2014	4:00	48.7	42.3	39.7	33.9	0	240	17
7/11/2014	5:00	48.9	41.9	40.2	34.8	0	250	13
7/11/2014	6:00	49.8	44.8	42.6	38.5	0	250	9
7/11/2014	7:00	54.9	46.8	45.1	40.1	0	250	15
7/11/2014	8:00	54.1	47.7	45.4	40.7	0	250	15
7/11/2014	9:00	54.5	48.2	45.6	40	0	230	17
7/11/2014	10:00	53.9	48.4	46.1	40.9	0	250	17
7/11/2014	11:00	53.9	47.5	45.1	39	0	250	17
7/11/2014	12:00	54.1	46.8	44.6	38.9	0	230	18
7/11/2014	13:00	55.1	47.2	44.8	39.9	0	230	17
7/11/2014	14:00	54.2	47.5	44.9	39.5	0	210	15
7/11/2014	15:00	54.5	47.6	45.1	40	0	220	17
7/11/2014	16:00	56.7	49.1	46.7	41.2	0	250	17
7/11/2014	17:00	55.7	49.6	48.2	41.7	0	230	21
7/11/2014	18:00	58	50.1	48.3	43.2	0	210	17
7/11/2014	19:00	58.6	50.4	48.4	41.2	0	210	11
7/11/2014	20:00	55.2	47.7	46.2	40.7	0	200	9
7/11/2014	21:00	54.4	47.5	45.1	39.5	0	190	11
7/11/2014	22:00	54.2	46.5	44.8	39.8	0	170	9
7/11/2014	23:00	52.8	45.7	44	39.9	0	170	8
7/11/2014	0:00	53.4	45.8	44.4	39.8	0	160	8

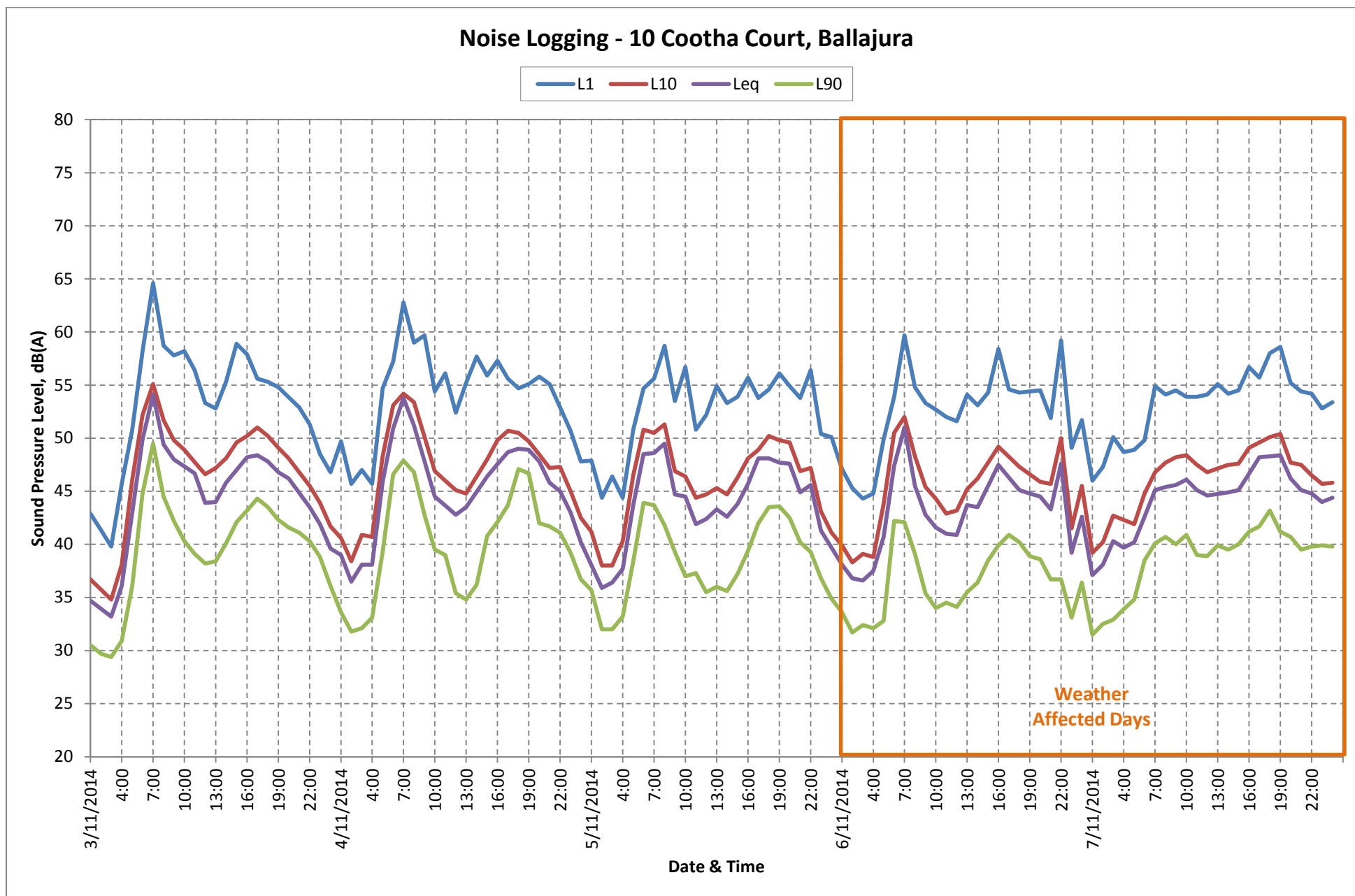


Table A15 – Results of Noise Logging 21 Madura Close, Ballajura

Date	L _{A10,18hour} , dB	L _{Aeq,24hour} , dB	L _{Aeq(Day)} , dB	L _{Aeq(Night)} , dB
20 November 2014	48.4	47.5	47.8	46.9
21 November 2014*	46.7	45.0	46.4	39.1
24 November 2014	49.6	48.2	49.2	45.4
25 November 2014	52.1	50.1	50.5	49.2
26 November 2014*	56.0	54.8	56.1	49.3
27 November 2014	51.0	49.3	50.3	46.3
Weekday Average	50.3	48.8	49.4	47.0

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A15 – Noise Logger at 21 Madura Close, Ballajura**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 21 Madura Close
Locality	Ballajura
Occupier	Florence
Dates	20/11/2014 to 27/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	85m to Hepburn
Height of the road in relation to the ground	+0m
Road surface type	DGA
Speed zone	60 km/h
Absorbing ground	70%
Angle of view	170
Road gradient	Flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	East
Carriageways & lanes.	2,5
COMMENT	
Comment	Microphone placed on East façade at Rear of house Rear property fence between microphone and road.
REFERENCES	
AMG Z50 E/N	
Road name	Hepburn Ave
EXCEL file	21 Madura Close MRWA Logger Sheet.xlsx
Raw data file	21 Madura_Sta.csv
EQUIPMENT	
Analyser number	15-301-468
Microphone number	15-301-468
Calibrator number	34883971
Calibrator values	94.0,94.0
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Mt Lawley Data 20/11/14 - Neg Winds <18 km/h from 9am, Morning <9km/h Pos winds 21/11/14 - Neg Winds <18 km/h continuous. 24/11/14 - Var Winds <18 km/h, 3 hour of Neg at 21 km/h 25/11/14 - Pos Winds 15 km/h, 1 hour at 18 km/h, night rain 26/11/14 - Pos winds all day, up to 21km/h, Evening Rain 27/11/14 - Var winds up to 18km/h, Morning Showers

Hourly Noise Level Data

21 Madura Close, Ballajura

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
20/11/2014	20/11/2014	52.8	48	44.5	31.7	0	0	0
20/11/2014	2:00	49.9	43.7	39.3	28.1	0	270	5
20/11/2014	3:00	55.2	46.4	42.9	28.7	0	0	0
20/11/2014	4:00	53.3	47.1	42.8	29.5	0	50	5
20/11/2014	5:00	57.8	52.9	49.4	38.5	0	40	4
20/11/2014	6:00	58.2	54.1	53.3	45.2	0	20	2
20/11/2014	7:00	56.9	52.5	49.9	44.8	0	0	0
20/11/2014	8:00	55	50.2	47.5	42.8	0	30	8
20/11/2014	9:00	57.2	53.4	50.1	41.7	0	300	13
20/11/2014	10:00	59.1	52.4	49.6	43.2	0	310	17
20/11/2014	11:00	56.8	51.4	49.1	42.1	0	290	17
20/11/2014	12:00	57	51.9	50.9	44.8	0	320	18
20/11/2014	13:00	57.6	52.3	49.5	41.3	0	290	18
20/11/2014	14:00	55.9	50.9	48	40.6	0	260	17
20/11/2014	15:00	52.9	47.6	45.1	40.2	0	270	15
20/11/2014	16:00	53.8	49.4	46.6	41.6	0	290	17
20/11/2014	17:00	61	51.1	48.1	43	0	260	15
20/11/2014	18:00	55.6	50.5	47.5	43.7	0	270	18
20/11/2014	19:00	52.5	47.5	44.6	40	0	270	17
20/11/2014	20:00	50.8	45.4	42.9	36.1	0	270	11
20/11/2014	21:00	52.8	42.2	41.0	34.8	0	270	9
20/11/2014	22:00	51.2	42	39	34.6	0	280	11
20/11/2014	23:00	47.2	40.9	38.5	32.4	0	280	13
20/11/2014	0:00	45.8	39.5	36.5	30.2	0	270	11
21/11/2014	21/11/2014	48.5	37.8	34.8	28.8	0	280	8
21/11/2014	2:00	51.2	37	34	27.9	0	270	8
21/11/2014	3:00	42.5	35	32.9	27.7	0	260	9
21/11/2014	4:00	38.6	34.7	32	28.2	0	260	9
21/11/2014	5:00	49.5	41.6	39.8	33	0	280	8
21/11/2014	6:00	53.5	48	45.3	38.9	0	280	8
21/11/2014	7:00	55.3	49.5	47.7	42.4	0	260	9
21/11/2014	8:00	64.8	54.5	52.5	43.9	0	250	13
21/11/2014	9:00	65.3	50	47	40.8	0	260	9
21/11/2014	10:00	56.8	48	45.9	39.3	0	240	11
21/11/2014	11:00	58	47.3	46.9	38.7	0	260	13
21/11/2014	12:00	56.2	47.6	46.1	40.8	0	230	17
21/11/2014	13:00	54.4	47.8	45.2	39.3	0	240	18
21/11/2014	14:00	52.3	46.7	44	38.7	0	250	17
21/11/2014	15:00	53.4	48.5	45.6	40.3	0	250	17
21/11/2014	16:00	54.1	48.8	46.2	41.2	0	250	17
21/11/2014	17:00	53.3	48.5	46	41.8	0	220	18
21/11/2014	18:00	53.5	47.6	45.7	40.8	0	250	13
21/11/2014	19:00	53.1	47.1	44.6	38.4	0	240	15
21/11/2014	20:00	66.8	46.5	43.5	37.3	0	240	13
21/11/2014	21:00	50.5	41.5	40	34.1	0	240	9
21/11/2014	22:00	54.3	41.0	39.2	34	0	230	13
21/11/2014	23:00	49.7	40.5	38.4	33.6	0	220	11
21/11/2014	0:00	48.6	38.9	38	31.8	0	220	9
24/11/2014	24/11/2014	46.9	42.7	40	32.1	0	170	15
24/11/2014	2:00	51.6	42.4	39.4	31.4	0	170	13
24/11/2014	3:00	48.6	40.6	39.4	29.2	0	160	11
24/11/2014	4:00	48.6	43.8	40.6	33.9	0	160	11
24/11/2014	5:00	54.8	50.1	47	39.9	0	140	11
24/11/2014	6:00	57.6	54.1	51.9	47.8	0	140	11
24/11/2014	7:00	61.4	56.2	54.7	50.8	0	110	9
24/11/2014	8:00	58.8	55.6	53.6	50.5	0	90	11
24/11/2014	9:00	59.2	54	52	48.1	0	100	13
24/11/2014	10:00	57	51.9	49.4	44	0	100	13
24/11/2014	11:00	56.5	50.1	47.6	41.8	0	110	11
24/11/2014	12:00	55.9	50	47.2	40.6	0	90	11
24/11/2014	13:00	52.5	47.6	44.7	38.7	0	100	9
24/11/2014	14:00	55.1	49.7	46.7	40	0	160	9
24/11/2014	15:00	56.8	48.2	45.2	39.5	0	200	15
24/11/2014	16:00	55.2	50.3	48.8	43.3	0	220	21
24/11/2014	17:00	55.8	51.2	48.8	44.7	0	230	21
24/11/2014	18:00	58.3	50.0	47.7	44.2	0	200	21
24/11/2014	19:00	54.6	48.7	46.6	42.3	0	210	18
24/11/2014	20:00	51.7	46.8	44.7	41.1	0	190	15
24/11/2014	21:00	50.4	46	43.8	39.8	0	180	13
24/11/2014	22:00	52	45.8	43.9	39	0	170	11
24/11/2014	23:00	54.1	45.3	43.0	38.4	0	170	11
24/11/2014	0:00	51.4	44.8	42.1	34.4	0	160	9

Hourly Noise Level Data

21 Madura Close, Ballajura

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
25/11/2014	25/11/2014	52.7	45.9	43.1	34.1	0	0	0
25/11/2014	2:00	54	47	44	31.6	0	170	2
25/11/2014	3:00	52.7	46.8	43.8	36.1	0	90	9
25/11/2014	4:00	51.3	46.6	43.6	37.3	0	90	9
25/11/2014	5:00	55.5	51.4	48.3	40.6	0	90	9
25/11/2014	6:00	61.6	56.9	54.7	50.3	0	90	11
25/11/2014	7:00	62.2	57.5	55.6	52.2	0	80	15
25/11/2014	8:00	59.9	55.7	53.9	50.2	0	90	13
25/11/2014	9:00	58.5	53.7	51.5	48.7	0	90	13
25/11/2014	10:00	57	51.6	49.1	44.3	0	110	13
25/11/2014	11:00	57.6	51.2	48.4	42.3	0	100	11
25/11/2014	12:00	57.5	51	48.4	42	0	120	11
25/11/2014	13:00	57.5	51.1	48.3	41.4	0	120	11
25/11/2014	14:00	57.4	51.2	48.2	41.3	0	110	11
25/11/2014	15:00	55.4	50	47.8	42	0	120	9
25/11/2014	16:00	56.9	51	48.6	43.7	0	120	11
25/11/2014	17:00	56.9	52.3	50.4	45.9	0	130	9
25/11/2014	18:00	56.9	53.6	52.1	47.5	0	130	13
25/11/2014	19:00	55.7	52.7	50.2	46.2	0	140	15
25/11/2014	20:00	54.5	50.7	48.3	44.5	0	140	13
25/11/2014	21:00	52.3	48.4	46.2	42	0	150	9
25/11/2014	22:00	55.4	49.8	48.2	42.3	0	140	9
25/11/2014	23:00	58.5	52.8	50.1	44.1	0	130	13
25/11/2014	0:00	58.6	54.1	50.6	44	0	110	18
26/11/2014	26/11/2014	58.9	53.8	50.8	45.2	0	100	21
26/11/2014	2:00	58.1	50.7	48.2	40.6	0	100	21
26/11/2014	3:00	57.3	47.6	45.6	36.8	0	100	11
26/11/2014	4:00	57.5	49.5	47.5	42.8	0	90	17
26/11/2014	5:00	56.1	51.4	49.3	43.9	0	110	11
26/11/2014	6:00	60.5	56.1	53.8	48.8	0	90	18
26/11/2014	7:00	63.1	57.4	56.4	52.1	0	90	15
26/11/2014	8:00	60.4	56.4	54.8	48.7	0	100	9
26/11/2014	9:00	60.1	55.3	53.1	49.2	0	100	11
26/11/2014	10:00	59.8	55.2	52.9	48.3	0	80	9
26/11/2014	11:00	58.2	53.4	50.8	45.8	0	110	13
26/11/2014	12:00	59.6	54.8	52.3	44.9	0	100	9
26/11/2014	13:00	62.8	56.2	53.8	46	0	70	15
26/11/2014	14:00	64.3	59.7	56.3	48.6	0	80	9
26/11/2014	15:00	66	59.6	58.5	52.9	0	150	11
26/11/2014	16:00	66.8	59.4	58.4	53.3	0.2	130	13
26/11/2014	17:00	67	62.7	60.9	56.8	1.6	60	11
26/11/2014	18:00	66.9	61.4	60.2	57.3	2.8	70	17
26/11/2014	19:00	61.9	59.1	55.9	50.4	2	80	11
26/11/2014	20:00	57.6	55.7	53.1	49.1	0.4	70	8
26/11/2014	21:00	57.2	53.6	50.5	44	1	110	15
26/11/2014	22:00	56.6	52.1	49.8	44.5	0.4	100	5
26/11/2014	23:00	53.6	49.6	46.8	41.3	0	90	9
26/11/2014	0:00	52.5	47.2	45.2	36.8	0	90	11
27/11/2014	27/11/2014	51.4	46.2	43.4	36	0	60	9
27/11/2014	2:00	54.6	43.4	42.1	30.8	0	50	17
27/11/2014	3:00	50.7	44.9	41.3	32.1	0	50	13
27/11/2014	4:00	51.6	44.9	42.3	34.2	0	50	9
27/11/2014	5:00	57.5	50.7	47.4	40.9	0	40	11
27/11/2014	6:00	63.4	56.5	52.5	48.5	2	10	13
27/11/2014	7:00	59.3	56.1	53.5	48.8	0.2	10	8
27/11/2014	8:00	60	54	52.9	45.6	0.8	220	5
27/11/2014	9:00	58.6	52.5	50.1	42.8	0	220	4
27/11/2014	10:00	58	52.5	49.8	42.3	0	170	11
27/11/2014	11:00	56.8	52.2	48.7	42.6	0	230	9
27/11/2014	12:00	55	50.5	47.5	42.3	0	170	11
27/11/2014	13:00	58	50.5	47.8	42.4	0	150	17
27/11/2014	14:00	57.4	50.2	48	42.3	0	190	13
27/11/2014	15:00	57.3	51.3	49.1	44.6	0.4	200	9
27/11/2014	16:00	57.1	52.3	50.2	46.4	1	160	13
27/11/2014	17:00	60.8	54.2	53.2	47.3	0	150	17
27/11/2014	18:00	58.5	52.2	51.2	46.3	0	150	13
27/11/2014	19:00	56.1	50.1	49.1	44.5	0	100	9
27/11/2014	20:00	55.5	53.4	51.4	46.3	0	150	2
27/11/2014	21:00	56.9	50.0	47.7	43.1	0	0	0
27/11/2014	22:00	50.1	46.6	44	40	0	0	0
27/11/2014	23:00	51.1	45.4	43.1	36.8	0	200	8
27/11/2014	0:00	52	44.1	42.2	34.7	0	150	5

Noise Logging - 21 Madura Close, Ballajura

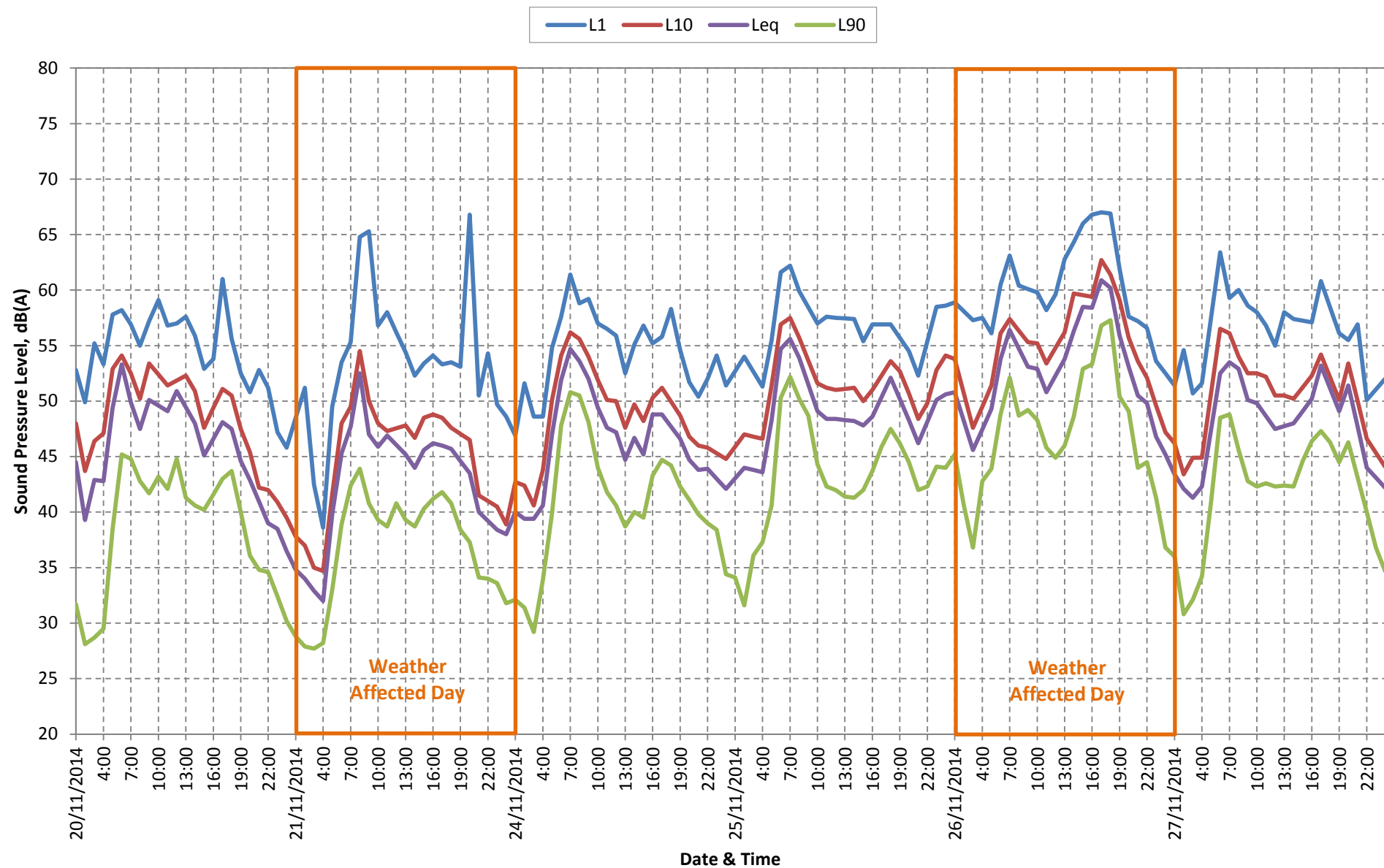


Table A16 – Results of Noise Logging 12 Fewson Turn, Ellenbrook

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
20 November 2014	46.1	50.9	52.2	46.0
21 November 2014*	43.3	43.7	44.3	42.0
24 November 2014	45.3	48.7	50.1	42.5
25 November 2014	47.7	48.9	49.8	46.0
26 November 2014*	46.1	50.9	52.2	46.0
Weekday Average	45.6	48.0	49.1	44.1

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A16 – Noise Logger at 12 Fewson Turn, Ellenbrook**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 12 Fewson Turn
Locality	Ellenbrook
Occupier	Paul Miller, 0450 733 714
Dates	20/11/2014 to 27/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	Road yet to be constructed
Height of the road in relation to the ground	Road yet to be constructed
Road surface type	Road yet to be constructed
Speed zone	Road yet to be constructed
Absorbing ground	Road yet to be constructed
Angle of view	Road yet to be constructed
Road gradient	Road yet to be constructed
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	Road yet to be constructed
COMMENT	
Comment	No major road traffic source currently nearby. Microphone placed on West façade at Rear of house. Noise is primarily weather related and local sources (eg. Pool). Large balcony at rear of property, to the south of logger position. Pool located near logger position.
REFERENCES	
AMG Z50 E/N	
Road name	Future Tonkin Highway
EXCEL file	12 Fewson Turn MRWA Logger Sheet.xlsx
Raw data file	12 Fewson_Sta.csv
EQUIPMENT	
Analyser number	16-707-041
Microphone number	16-707-041
Calibrator number	34883971
Calibrator values	94.3, 94.2
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Pearce RAAF Data 20/11/14 - Pos Winds >18 km/h for 12 hours of day, rest of day calm 21/11/14 - 4 hours neg Winds <11 km/h, rest of day Pos winds <24km/h 24/11/14 - Var Winds <18 km/h, 6 hours above 21 km/h 25/11/14 - Neg Winds; morning 15 to 33 km/h, Afternoon 13-40 km/h 26/11/14 - Neg high winds all day, over 18km/h, Evening Rain

Hourly Noise Level Data

12 Fewson Turn, Ellenbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
20/11/2014	20/11/2014	32.1	26.8	25.4	23.6	0	0	0
20/11/2014	2:00	33.4	25.5	25.2	23.5	0	350	4
20/11/2014	3:00	29.6	27.9	26.4	24.3	0	90	4
20/11/2014	4:00	35.3	27.9	35.8	24.3	0	350	5
20/11/2014	5:00	50.8	44.5	41.2	26.9	0	10	5
20/11/2014	6:00	65.3	52.6	54.8	34.6	0	0	0
20/11/2014	7:00	60.2	58.5	54.5	37.6	0	340	9
20/11/2014	8:00	60.1	55.1	54.4	53.3	0	340	17
20/11/2014	9:00	57	44.8	45.5	40.4	0	290	24
20/11/2014	10:00	55.1	40.5	41.8	30.5	0	310	28
20/11/2014	11:00	60.3	45.3	57.7	35.2	0	310	26
20/11/2014	12:00	58.2	47.4	46.6	37.1	0	300	31
20/11/2014	13:00	58	48.6	46.7	38.6	0	280	31
20/11/2014	14:00	60.4	53.3	49.7	34.4	0	260	35
20/11/2014	15:00	59.9	41.7	47.5	31.2	0	280	22
20/11/2014	16:00	58.8	58.1	55.7	38	0	280	28
20/11/2014	17:00	59.9	55.2	57.9	41.1	0	280	28
20/11/2014	18:00	63	53.9	52.5	39.2	0	260	26
20/11/2014	19:00	53.6	43.7	42.1	30.2	0	260	18
20/11/2014	20:00	49.4	46.2	42.8	35.2	0	320	9
20/11/2014	21:00	42.4	34.9	33.3	28.9	0	340	9
20/11/2014	22:00	46.6	38.1	35.6	27	0	360	11
20/11/2014	23:00	36.4	32.1	30	26.9	0	350	13
20/11/2014	0:00	35.5	32.1	29.8	26.7	0	340	8
21/11/2014	21/11/2014	36.5	33	30.5	27.1	0	350	13
21/11/2014	2:00	50.5	35.2	41.3	27.9	0	360	13
21/11/2014	3:00	59.6	36.5	44.8	32.8	0	10	11
21/11/2014	4:00	37.6	35.8	33.4	26.3	0	10	11
21/11/2014	5:00	54	46.2	43.1	25.5	0	10	11
21/11/2014	6:00	57.8	47.3	46.3	30.7	0	350	15
21/11/2014	7:00	58.1	46.1	45.5	35.9	0	340	17
21/11/2014	8:00	58.8	52.1	48.1	36.7	0	220	24
21/11/2014	9:00	58.6	44.4	47.5	31	0	230	24
21/11/2014	10:00	55	44.7	43.4	30.8	0	250	22
21/11/2014	11:00	56.5	42.8	45.5	30.1	0	250	21
21/11/2014	12:00	55.8	42.3	44.5	34.5	0	220	22
21/11/2014	13:00	53.2	41.7	42.3	32.8	0	230	21
21/11/2014	14:00	55.8	42.9	43.5	30.6	0	230	22
21/11/2014	15:00	56.2	43.4	43.8	32	0	230	21
21/11/2014	16:00	52.8	44.2	44.1	37.2	0	260	31
21/11/2014	17:00	55	42.3	42.3	31.2	0	220	22
21/11/2014	18:00	54.1	38.6	40.8	29.3	0	250	21
21/11/2014	19:00	53.1	41.6	42.6	29.3	0	240	17
21/11/2014	20:00	50	47	44.8	39.5	0	230	9
21/11/2014	21:00	47.3	43.8	42.5	35.5	0	270	8
21/11/2014	22:00	47.3	42.5	39.8	32.5	0	340	8
21/11/2014	23:00	46.2	41.6	38.3	32.2	0	350	5
21/11/2014	0:00	42.5	38.1	39.7	31.8	0	360	8
24/11/2014	24/11/2014	50.7	28.5	39.8	23.6	0	180	11
24/11/2014	2:00	48.6	32.6	36.1	24.9	0	180	13
24/11/2014	3:00	38.4	34.5	33.5	30.7	0	170	13
24/11/2014	4:00	35.3	33.8	30.3	24.6	0	170	15
24/11/2014	5:00	52.2	42.9	40.5	28.7	0	170	15
24/11/2014	6:00	59.3	54.5	50.1	31.4	0	200	8
24/11/2014	7:00	55.3	44.2	44.7	41.4	0	170	9
24/11/2014	8:00	52.4	45.3	44.6	42.6	0	120	11
24/11/2014	9:00	52.8	44.2	42.1	30.9	0	90	28
24/11/2014	10:00	57.3	45.4	44.8	30.4	0	70	13
24/11/2014	11:00	64.1	53	52.4	30.3	0	70	21
24/11/2014	12:00	66.9	48	53.1	32.7	0	70	21
24/11/2014	13:00	54.6	48.8	45.9	29.6	0	110	17
24/11/2014	14:00	55.1	41.9	48.2	30.2	0	90	18
24/11/2014	15:00	72.2	55.3	58.8	33	0	130	13
24/11/2014	16:00	60.7	44.7	50	37.8	0	140	9
24/11/2014	17:00	52.7	45.2	45.3	36.6	0	100	11
24/11/2014	18:00	52	42	42.5	34.1	0	200	30
24/11/2014	19:00	52.7	43.8	43.4	33.9	0	200	28
24/11/2014	20:00	49.8	47.7	46.3	43.8	0	200	21
24/11/2014	21:00	49.1	47.7	46	42.4	0	180	15
24/11/2014	22:00	48.1	46.6	43.7	36.7	0	170	13
24/11/2014	23:00	43	38.4	36.9	33.7	0	150	9
24/11/2014	0:00	36	33.2	38.2	25.1	0	150	9

Hourly Noise Level Data
12 Fewson Turn, Ellenbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
25/11/2014	25/11/2014	50.8	32.2	39.2	24	0	150	5
25/11/2014	2:00	53.4	43.8	43.9	26.8	0	150	15
25/11/2014	3:00	55.1	39.6	41.6	25.7	0	90	24
25/11/2014	4:00	29.1	27	25.5	23.7	0	90	24
25/11/2014	5:00	50.8	41.4	39.6	25.5	0	90	31
25/11/2014	6:00	59.6	56.1	52.3	30.6	0	90	30
25/11/2014	7:00	60.1	58.2	55.3	41.9	0	90	33
25/11/2014	8:00	59.9	54.3	52.8	43.3	0	90	33
25/11/2014	9:00	50.7	45.5	43.4	33.3	0	100	22
25/11/2014	10:00	54.8	39.8	41.9	31.2	0	100	17
25/11/2014	11:00	53	41.9	41.1	30.7	0	130	21
25/11/2014	12:00	56.8	43.1	44.2	35.8	0	90	18
25/11/2014	13:00	61.6	40	47.5	29.6	0	90	13
25/11/2014	14:00	50.5	38.3	38.9	29	0	130	26
25/11/2014	15:00	57.7	45.8	45.2	28.4	0	100	15
25/11/2014	16:00	60.3	57.6	55.1	40.6	0	70	15
25/11/2014	17:00	53.7	53.2	50.1	39.8	0	110	15
25/11/2014	18:00	56.7	44.6	45	33.8	0	130	21
25/11/2014	19:00	61.5	51	50.2	33.6	0	140	21
25/11/2014	20:00	62.7	53.2	52.5	46	0	150	17
25/11/2014	21:00	59	48.1	48	43.4	0	120	18
25/11/2014	22:00	50.7	47	45.6	43.4	0	110	30
25/11/2014	23:00	52.2	49.5	47.5	44.4	0	110	37
25/11/2014	0:00	51.6	48.1	45.7	42.1	0	110	41
26/11/2014	26/11/2014	50.9	45.9	46	40.9	0	100	35
26/11/2014	2:00	46.4	44.7	41.3	36.3	0	100	37
26/11/2014	3:00	48.1	46	41	32.1	0	90	35
26/11/2014	4:00	51.2	39.6	40.3	32	0	90	31
26/11/2014	5:00	52	43.2	40.9	29.6	0	90	26
26/11/2014	6:00	56.9	48.3	46.3	38.2	0	100	30
26/11/2014	7:00	58.4	49.6	46.7	37.1	0	90	31
26/11/2014	8:00	54.7	46	44.2	37.8	0	90	26
26/11/2014	9:00	50.4	41.1	40.2	34.3	0	90	28
26/11/2014	10:00	55.9	42.6	42.9	33.7	0	80	28
26/11/2014	11:00	62.4	49.2	56.7	34.1	0	90	28
26/11/2014	12:00	65.4	56.9	56.3	39.1	0	80	22
26/11/2014	13:00	72.5	58	68.2	36.2	0	50	18
26/11/2014	14:00	74.3	67.2	64.8	42.5	0	100	21
26/11/2014	15:00	69.2	56.4	60.8	38.5	2.4	210	30
26/11/2014	16:00	65.6	55.8	54.1	41.3	1.4	170	21
26/11/2014	17:00	64.1	56	54.8	43.8	2.4	60	18
26/11/2014	18:00	59.6	53.7	52	46.9	2.6	90	24
26/11/2014	19:00	56.3	53.9	51.5	43.1	2.8	80	21
26/11/2014	20:00	55.8	48.6	47.1	42.2	1.8	60	24
26/11/2014	21:00	47	44.5	42.8	40.1	0.6	110	22
26/11/2014	22:00	50.3	47.6	46.2	42.7	0	120	13
26/11/2014	23:00	59.3	47.9	48.2	42.4	0.2	100	31
26/11/2014	0:00	50.3	49.1	47	43.8	0	80	26

Noise Logging - 12 Fewson Turn, Ellenbrook

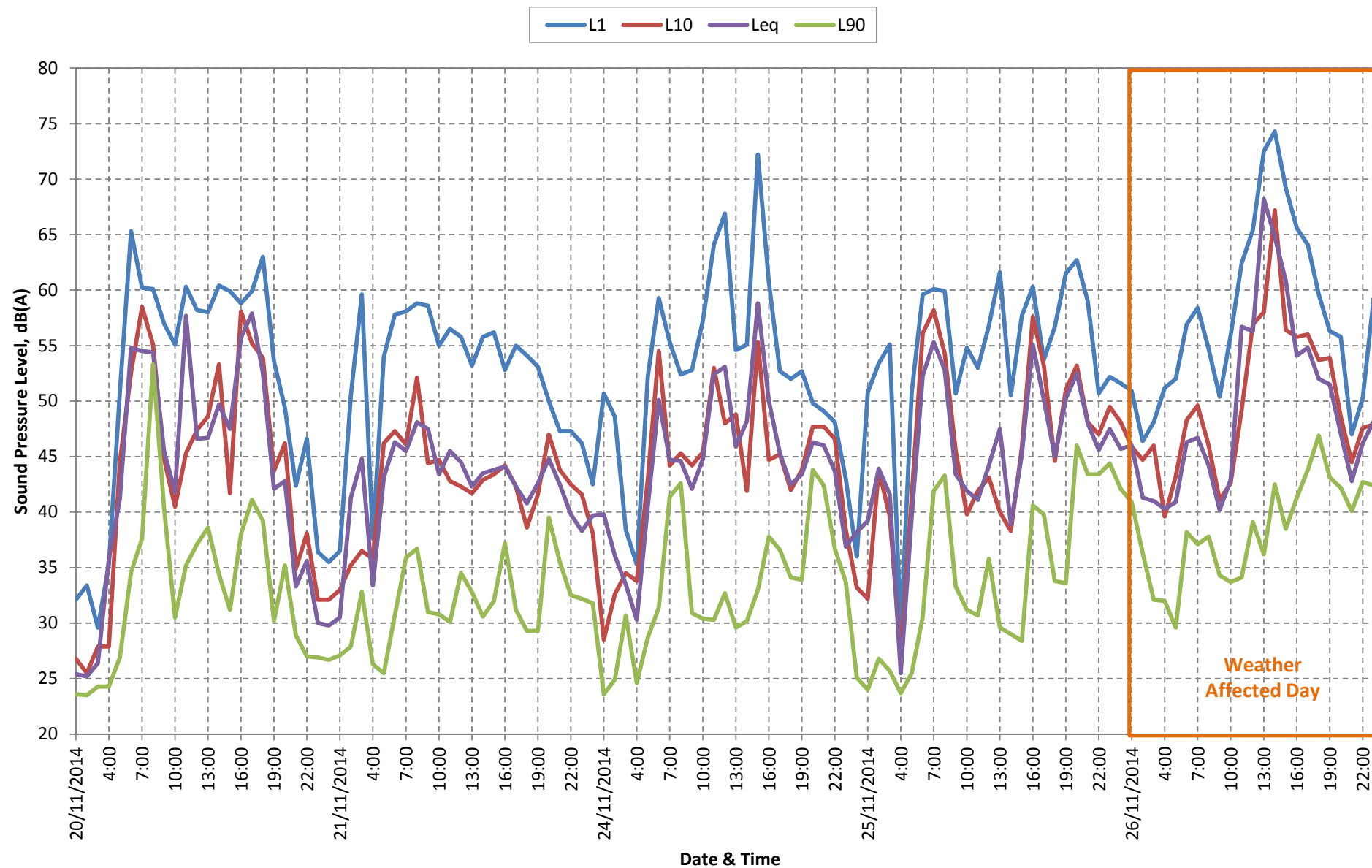


Table A17 – Results of Noise Logging 32 Stock Road West, Bullsbrook

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
20 November 2014	51.2	51.9	53.2	46.6
21 November 2014*	53.8	59.9	61.6	47.7
24 November 2014	50.5	52.6	53.8	47.8
25 November 2014	51.8	54.3	55.5	50.3
26 November 2014*	56.0	59.7	61.3	50.2
Weekday Average	51.1	52.9	54.2	48.2

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A17 – Noise Logger at 32 Stock Road West, Bullsbrook**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 32 Stock West Road
Locality	Bullsbrook
Occupier	Cody and Diane Lambert. 0448711330
Dates	20/11/2014 to 27/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	Road yet to be constructed
Height of the road in relation to the ground	Road yet to be constructed
Road surface type	Road yet to be constructed
Speed zone	Road yet to be constructed
Absorbing ground	Road yet to be constructed
Angle of view	Road yet to be constructed
Road gradient	Road yet to be constructed
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	Road yet to be constructed
COMMENT	
Comment	No major road traffic source currently nearby. Microphone placed on West façade at side of house. Noise is primarily weather related and local sources (dogs).
REFERENCES	
AMG Z50 E/N	
Road name	Future Tonkin Highway
EXCEL file	32 Stock West Rd MRWA Logger Sheet.xlsx
Raw data file	32 Stock West Rd_Sta.csv
EQUIPMENT	
Analyser number	16-004-041
Microphone number	16-004-041
Calibrator number	34883971
Calibrator values	94.2, 94.2
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Pearce RAAF Data 20/11/14 - Pos Winds >18 km/h for 12 hours of day, rest of day calm 21/11/14 - 4 hours neg Winds <11 km/h, rest of day Pos winds <24km/h 24/11/14 - Var Winds <18 km/h, 6 hours above 21 km/h 25/11/14 - Neg Winds; morning 15 to 33 km/h, Afternoon 13-40 km/h 26/11/14 - Neg high winds all day, over 18km/h, Evening Rain

Hourly Noise Level Data
32 Stock West Road, Bullsbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
20/11/2014	20/11/2014	39.1	34.8	32.7	29.4	0	0	0
20/11/2014	2:00	51.1	30.5	38.2	26.8	0	350	4
20/11/2014	3:00	39.5	30.4	34.9	26.8	0	90	4
20/11/2014	4:00	53.6	28.7	39.4	25.4	0	350	5
20/11/2014	5:00	61.7	55.1	50.6	29	0	10	5
20/11/2014	6:00	64.3	58	53.5	34.1	0	0	0
20/11/2014	7:00	63.8	57.4	53.4	34.6	0	340	9
20/11/2014	8:00	65.4	58.1	56.5	35	0	340	17
20/11/2014	9:00	63	55.5	52.6	36.9	0	290	24
20/11/2014	10:00	61.8	51.7	54	37.1	0	310	28
20/11/2014	11:00	65.3	56.3	53.9	41.9	0	310	26
20/11/2014	12:00	65.2	57.2	55.8	45.4	0	300	31
20/11/2014	13:00	62.5	56.6	53.9	45.9	0	280	31
20/11/2014	14:00	64.6	59.1	55.9	46.5	0	260	35
20/11/2014	15:00	64.1	56.8	53.7	42.3	0	280	22
20/11/2014	16:00	62.7	55.6	52.6	41.1	0	280	28
20/11/2014	17:00	62.8	54.4	53.5	43.7	0	280	28
20/11/2014	18:00	63.3	54.4	52.1	39.9	0	260	26
20/11/2014	19:00	62.8	52.9	52	38.4	0	260	18
20/11/2014	20:00	50.4	41.2	42	30.9	0	320	9
20/11/2014	21:00	49.6	41.1	39.7	30.4	0	340	9
20/11/2014	22:00	43.6	39.7	37.1	31	0	360	11
20/11/2014	23:00	47.3	39.6	36.5	28.1	0	350	13
20/11/2014	0:00	39.6	33.1	31.6	28.4	0	340	8
21/11/2014	21/11/2014	35.7	31	28.9	26.4	0	350	13
21/11/2014	2:00	43.6	31.1	34.9	27.6	0	360	13
21/11/2014	3:00	35	28.9	29.6	26.5	0	10	11
21/11/2014	4:00	56.9	30.9	43.3	26.7	0	10	11
21/11/2014	5:00	62.3	56.5	51.5	27.3	0	10	11
21/11/2014	6:00	65.7	58.5	54.6	34.7	0	350	15
21/11/2014	7:00	67.9	59	56.9	33.9	0	340	17
21/11/2014	8:00	70.8	61.5	58.1	32.9	0	220	24
21/11/2014	9:00	63.1	55.1	52.3	37.7	0	230	24
21/11/2014	10:00	68.4	57.1	57.1	41.6	0	250	22
21/11/2014	11:00	77.4	72.9	69.4	42.5	0	250	21
21/11/2014	12:00	77.2	74.2	69.6	50.7	0	220	22
21/11/2014	13:00	65.6	57.8	60	40.9	0	230	21
21/11/2014	14:00	71.5	57.1	60.4	40.1	0	230	22
21/11/2014	15:00	62.8	54	51.2	37.3	0	230	21
21/11/2014	16:00	62.5	54.9	53	42.2	0	260	31
21/11/2014	17:00	65.2	59.9	55.8	41.6	0	220	22
21/11/2014	18:00	61.2	52.9	50	35.9	0	250	21
21/11/2014	19:00	65	52.6	55	35	0	240	17
21/11/2014	20:00	56.3	39.5	44.4	31.8	0	230	9
21/11/2014	21:00	50.9	40.6	42.6	34.2	0	270	8
21/11/2014	22:00	51.9	40.9	43.5	36.5	0	340	8
21/11/2014	23:00	48.5	39.5	38.4	34.1	0	350	5
21/11/2014	0:00	40.8	39.6	37.6	33.3	0	360	8
24/11/2014	24/11/2014	54.1	31.2	40.5	25.3	0	180	11
24/11/2014	2:00	41.5	33.3	34.2	25.7	0	180	13
24/11/2014	3:00	37	26.5	27.1	24.5	0	170	13
24/11/2014	4:00	52.2	29.5	39.2	25.1	0	170	15
24/11/2014	5:00	61	54.4	49.7	25.4	0	170	15
24/11/2014	6:00	65.6	57.6	55.3	32.4	0	200	8
24/11/2014	7:00	64.8	57.5	54.3	36.6	0	170	9
24/11/2014	8:00	63.7	55.7	56.4	35.8	0	120	11
24/11/2014	9:00	62.6	54.3	52.9	37.2	0	90	28
24/11/2014	10:00	69.3	59	56.8	37.4	0	70	13
24/11/2014	11:00	61.8	54.8	50.9	35.7	0	70	21
24/11/2014	12:00	59.2	51.2	49.6	35	0	70	21
24/11/2014	13:00	69.4	56.5	61.2	41.1	0	110	17
24/11/2014	14:00	63.1	53.2	51.9	39.5	0	90	18
24/11/2014	15:00	61.5	51.4	50.1	39.2	0	130	13
24/11/2014	16:00	67.9	55.4	55.7	32.4	0	140	9
24/11/2014	17:00	60.2	52.8	50.4	42.2	0	100	11
24/11/2014	18:00	60.6	50.3	48.9	39.2	0	200	30
24/11/2014	19:00	61.1	51.3	49.5	35.5	0	200	28
24/11/2014	20:00	53.3	41.4	41.3	30	0	200	21
24/11/2014	21:00	49.6	40.1	39.3	30.7	0	180	15
24/11/2014	22:00	47.5	39.9	39.1	31.9	0	170	13
24/11/2014	23:00	50.3	45.9	44.5	33.4	0	150	9
24/11/2014	0:00	47.9	37.5	36.6	32.3	0	150	9

Hourly Noise Level Data
32 Stock West Road, Bullsbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
25/11/2014	25/11/2014	48.7	36.4	39.7	28.6	0	150	5
25/11/2014	2:00	46.6	40.5	38	31.3	0	150	15
25/11/2014	3:00	48.3	40.8	37.3	28.5	0	90	24
25/11/2014	4:00	55.5	48.8	45.8	36.9	0	90	24
25/11/2014	5:00	61.2	55.9	51.2	35.8	0	90	31
25/11/2014	6:00	65.9	58.5	55.4	38.5	0	90	30
25/11/2014	7:00	64	55.3	52.7	38.3	0	90	33
25/11/2014	8:00	64.3	55.1	54.9	35	0	90	33
25/11/2014	9:00	65.8	53.5	54	34.3	0	100	22
25/11/2014	10:00	65.2	53.4	53.6	34.7	0	100	17
25/11/2014	11:00	65	55.1	53.2	35.8	0	130	21
25/11/2014	12:00	69.3	56.4	60.9	46.5	0	90	18
25/11/2014	13:00	71	57.5	63.4	43.7	0	90	13
25/11/2014	14:00	60.6	51.6	49.2	33.5	0	130	26
25/11/2014	15:00	57.2	47.9	45.6	31.6	0	100	15
25/11/2014	16:00	67.5	52.3	57.2	32.3	0	70	15
25/11/2014	17:00	57.5	48.3	45.8	31.9	0	110	15
25/11/2014	18:00	56.1	42.8	42.9	31.7	0	130	21
25/11/2014	19:00	61.8	52.8	52.8	33.3	0	140	21
25/11/2014	20:00	58.3	44.1	47.3	35.5	0	150	17
25/11/2014	21:00	48.6	47.1	45.2	40.4	0	120	18
25/11/2014	22:00	53.1	49.7	48.3	45	0	110	30
25/11/2014	23:00	59.3	53.9	51.1	45.9	0	110	37
25/11/2014	0:00	59.7	54.9	52.6	42.7	0	110	41
26/11/2014	26/11/2014	59.2	57.2	53.7	46.3	0	100	35
26/11/2014	2:00	57.2	49.4	48	40.8	0	100	37
26/11/2014	3:00	53.6	52.2	48.5	39.2	0	90	35
26/11/2014	4:00	55.7	49.7	48.6	45.4	0	90	31
26/11/2014	5:00	60.8	54.1	50.2	31.6	0	90	26
26/11/2014	6:00	64	57.4	54	38.9	0	100	30
26/11/2014	7:00	64	56.6	53.3	35.8	0	90	31
26/11/2014	8:00	61.1	54.3	50.3	35.2	0	90	26
26/11/2014	9:00	59.7	53.5	49.6	37.1	0	90	28
26/11/2014	10:00	61.9	54.8	52.1	38.1	0	80	28
26/11/2014	11:00	64.3	55.3	52.9	37.5	0	90	28
26/11/2014	12:00	66.5	57.1	54.5	39.3	0	80	22
26/11/2014	13:00	84	70.3	69.8	35.2	0	50	18
26/11/2014	14:00	75.8	71.7	67.8	51.7	0	100	21
26/11/2014	15:00	73.3	65.1	62.4	43.8	2.4	210	30
26/11/2014	16:00	70	62.5	60.1	45.5	1.4	170	21
26/11/2014	17:00	66.3	61.8	59	44.9	2.4	60	18
26/11/2014	18:00	63.6	60.1	57.9	53.8	2.6	90	24
26/11/2014	19:00	63.3	60.9	57.2	44.9	2.8	80	21
26/11/2014	20:00	57.6	53.7	50.6	40.1	1.8	60	24
26/11/2014	21:00	49.7	40.1	38.2	31.5	0.6	110	22
26/11/2014	22:00	46.2	42.3	37.1	28.2	0	120	13
26/11/2014	23:00	56.8	43.5	43.1	28.7	0.2	100	31
26/11/2014	0:00	51.4	44.9	41.5	30.9	0	80	26

Noise Logging - 32 Stock West Road, Bullsbrook

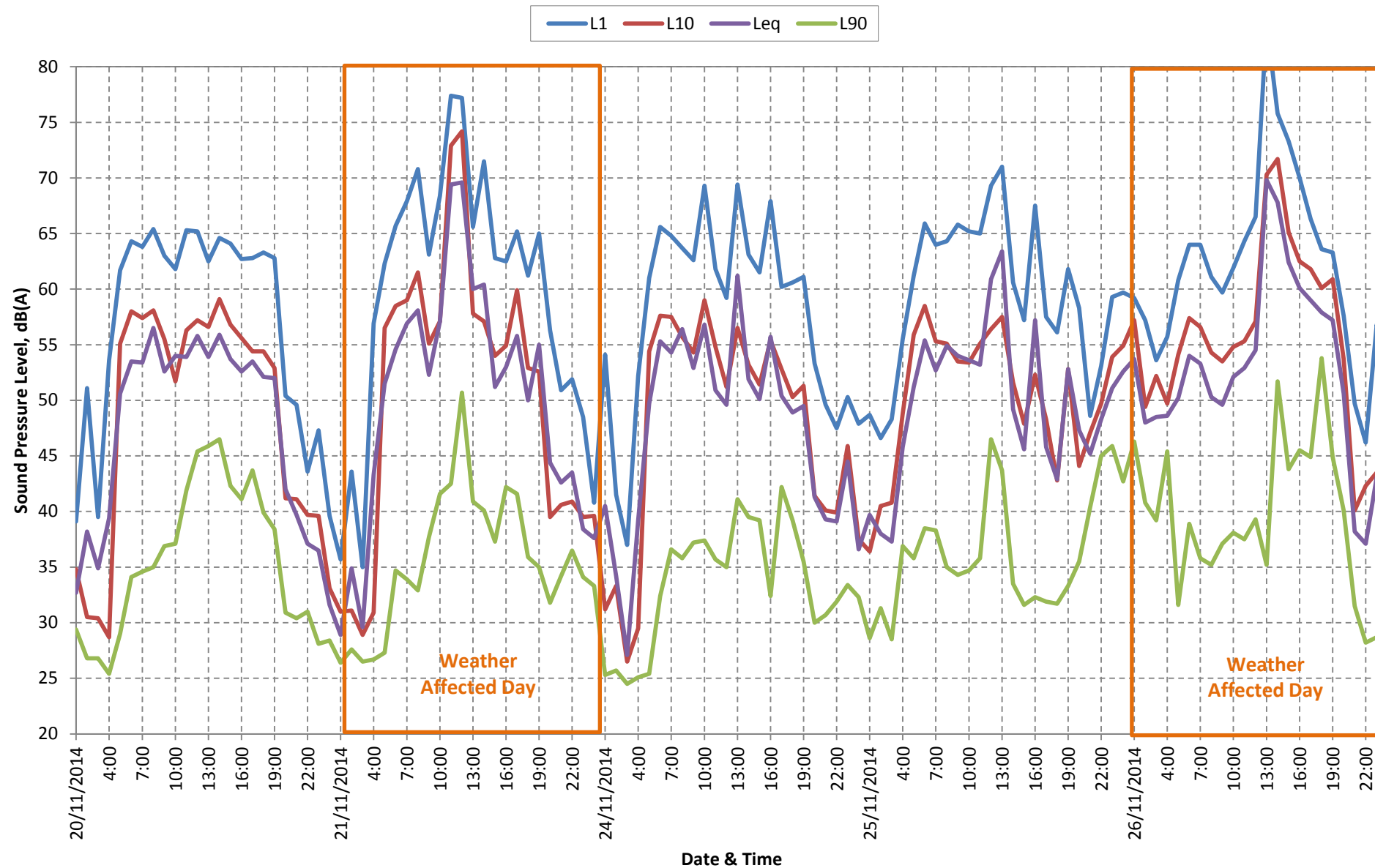


Table A18 – Results of Noise Logging 144 Strachan Road, Bullsbrook

Date	L_{A10,18hour}, dB	L_{Aeq,24hour}, dB	L_{Aeq(Day)}, dB	L_{Aeq(Night)}, dB
20 November 2014	45.3	47.6	48.4	45.2
21 November 2014	44.6	45.3	46.8	37.4
24 November 2014	45.4	47.8	48.0	47.5
25 November 2014	47.0	46.4	47.5	42.6
26 November 2014*	54.5	59.6	61.4	44.2
Weekday Average	45.6	46.8	47.7	43.2

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A18 – Noise Logger at 144 Strachan Road, Bullsbrook**

Traffic Noise Measurement Data

Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 144 Strachan Road
Locality	Bullsbrook
Occupier	Bill Hayes 0407 443 856
Dates	20/11/2014 to 27/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	Road yet to be constructed
Height of the road in relation to the ground	Road yet to be constructed
Road surface type	Road yet to be constructed
Speed zone	Road yet to be constructed
Absorbing ground	Road yet to be constructed
Angle of view	Road yet to be constructed
Road gradient	Road yet to be constructed
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	West
Carriageways & lanes.	Road yet to be constructed
COMMENT	
Comment	No major road traffic source nearby. Microphone placed on West façade at Side of house. Noise is primarily weather related and ambient/livestock. Solid verandah wraps around entire dwelling. Microphone placed under verandah.
REFERENCES	
AMG Z50 E/N	
Road name	Future Tonkin Highway
EXCEL file	144 Strachan Rd MRWA Logger Sheet.xlsx
Raw data file	144 Stachan Rd Bullsbrook_Sta.csv
EQUIPMENT	
Analyser number	15-203-505
Microphone number	15-203-505
Calibrator number	34883971
Calibrator values	94.1, 94.0
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Pearce RAAF Data 20/11/14 - Pos Winds >18 km/h for 12 hours of day, rest of day calm 21/11/14 - 4 hours neg Winds <11 km/h, rest of day Pos winds <24km/h 24/11/14 - Var Winds <18 km/h, 6 hours above 21 km/h 25/11/14 - Neg Winds; morning 15 to 33 km/h, Afternoon 13-40 km/h 26/11/14 - Neg high winds all day, over 18km/h, Evening Rain

Hourly Noise Level Data
144 Strachan Road, Bullsbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
20/11/2014	20/11/2014	38.8	34.3	33	28.6	0	0	0
20/11/2014	2:00	39.1	33.6	32.2	28.1	0	350	4
20/11/2014	3:00	38.8	32.9	31.3	27.7	0	90	4
20/11/2014	4:00	51.3	31.6	37.9	27.5	0	350	5
20/11/2014	5:00	52.5	40	40	28.7	0	10	5
20/11/2014	6:00	66.1	51.2	53.8	32.6	0	0	0
20/11/2014	7:00	64.5	48.2	52.1	35.6	0	340	9
20/11/2014	8:00	57.8	43.9	47	32.6	0	340	17
20/11/2014	9:00	51	39.8	40.6	32.6	0	290	24
20/11/2014	10:00	59.4	44.5	47.7	34.8	0	310	28
20/11/2014	11:00	58.6	51.5	49	37.1	0	310	26
20/11/2014	12:00	60	50.8	50	40.2	0	300	31
20/11/2014	13:00	56.4	54.6	51.9	43.7	0	280	31
20/11/2014	14:00	56.4	53.6	50.5	44.3	0	260	35
20/11/2014	15:00	55.7	49.9	47.2	34	0	280	22
20/11/2014	16:00	56.2	52.6	47.6	35	0	280	28
20/11/2014	17:00	59.9	57.1	53.4	42.7	0	280	28
20/11/2014	18:00	52.8	47.7	45.2	38.9	0	260	26
20/11/2014	19:00	52.5	42.8	42.5	32.7	0	260	18
20/11/2014	20:00	45.3	40.5	37.7	30.7	0	320	9
20/11/2014	21:00	36.3	33.2	31.4	29.1	0	340	9
20/11/2014	22:00	36.9	33.7	31.5	28.6	0	360	11
20/11/2014	23:00	38.4	34.9	32.4	28.6	0	350	13
20/11/2014	0:00	43.2	36.9	34.6	28.6	0	340	8
21/11/2014	21/11/2014	36.9	34.1	31.5	28.1	0	350	13
21/11/2014	2:00	40.1	32	30.9	27.5	0	360	13
21/11/2014	3:00	40.7	34.6	31.6	27	0	10	11
21/11/2014	4:00	36.5	31.1	29.9	26.7	0	10	11
21/11/2014	5:00	54.4	43.3	42.1	27.7	0	10	11
21/11/2014	6:00	54.5	43.4	42.8	31.8	0	350	15
21/11/2014	7:00	53.3	42.7	42.2	34.1	0	340	17
21/11/2014	8:00	57.4	45.8	45.5	33.2	0	220	24
21/11/2014	9:00	55.1	46.3	45.4	36.8	0	230	24
21/11/2014	10:00	57.2	49.1	47.1	37.2	0	250	22
21/11/2014	11:00	62.9	48.5	53.6	35.4	0	250	21
21/11/2014	12:00	55.2	48	45.2	35.8	0	220	22
21/11/2014	13:00	54.8	44.8	44	32.5	0	230	21
21/11/2014	14:00	55.2	53.2	47.7	35	0	230	22
21/11/2014	15:00	52	45.4	42.7	34.8	0	230	21
21/11/2014	16:00	52.7	49	45.4	38	0	260	31
21/11/2014	17:00	59.9	56.6	52.3	37.2	0	220	22
21/11/2014	18:00	48.8	42.7	40.5	33.9	0	250	21
21/11/2014	19:00	47.2	39.5	38.1	31.7	0	240	17
21/11/2014	20:00	51.4	49.6	46	32	0	230	9
21/11/2014	21:00	39.6	37.7	33.9	28.5	0	270	8
21/11/2014	22:00	36.8	34.1	32.2	28.8	0	340	8
21/11/2014	23:00	37.5	34.8	32.5	28.9	0	350	5
21/11/2014	0:00	38.1	34.6	32.2	28.3	0	360	8
24/11/2014	24/11/2014	45.7	33.1	33.9	27.5	0	180	11
24/11/2014	2:00	41.5	35.4	32.2	27.2	0	180	13
24/11/2014	3:00	35.7	30.1	28.8	27	0	170	13
24/11/2014	4:00	39.5	30.2	31	27.3	0	170	15
24/11/2014	5:00	53.8	38.2	40.6	28.1	0	170	15
24/11/2014	6:00	68.7	58.4	56.2	30.8	0	200	8
24/11/2014	7:00	62	46.2	50.3	33.3	0	170	9
24/11/2014	8:00	57.3	46.5	46.5	34.4	0	120	11
24/11/2014	9:00	56.8	47	46	36.2	0	90	28
24/11/2014	10:00	59.7	54	49.2	34.6	0	70	13
24/11/2014	11:00	58	46.2	45.5	33.5	0	70	21
24/11/2014	12:00	51.9	42.2	41.1	32.4	0	70	21
24/11/2014	13:00	56	46.5	43.9	31.4	0	110	17
24/11/2014	14:00	57.7	47.6	45.9	32.4	0	90	18
24/11/2014	15:00	50.3	42.6	39.8	31.3	0	130	13
24/11/2014	16:00	55.9	46.7	44.2	31.8	0	140	9
24/11/2014	17:00	59.9	56.7	52.8	41.2	0	100	11
24/11/2014	18:00	52.9	46	43.7	37.7	0	200	30
24/11/2014	19:00	51.1	44.3	42.4	35.9	0	200	28
24/11/2014	20:00	52.2	50.3	46.9	34.5	0	200	21
24/11/2014	21:00	46.9	39.8	54.7	31.1	0	180	15
24/11/2014	22:00	43.8	37.6	34.8	28.8	0	170	13
24/11/2014	23:00	47.3	43.3	39.6	32.6	0	150	9
24/11/2014	0:00	36.9	33.9	31.4	27.9	0	150	9

Hourly Noise Level Data
144 Strachan Road, Bullsbrook

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
25/11/2014	25/11/2014	42.9	34.7	33.6	27.8	0	150	5
25/11/2014	2:00	46.9	41.3	37.9	31	0	150	15
25/11/2014	3:00	41.9	34.6	31.8	27.4	0	90	24
25/11/2014	4:00	40.7	34.5	32.8	28.8	0	90	24
25/11/2014	5:00	56.6	46.5	44.6	28.8	0	90	31
25/11/2014	6:00	52	41.6	40.8	32	0	90	30
25/11/2014	7:00	57.8	47.9	46.5	34.8	0	90	33
25/11/2014	8:00	55.5	49.3	46.1	37.9	0	90	33
25/11/2014	9:00	54	46.7	43.8	33.1	0	100	22
25/11/2014	10:00	60.4	50.9	48.7	32.6	0	100	17
25/11/2014	11:00	58.5	48.7	47.6	33.9	0	130	21
25/11/2014	12:00	64.6	45.7	54.2	32.2	0	90	18
25/11/2014	13:00	58.2	47.4	45.9	31.7	0	90	13
25/11/2014	14:00	55.4	46.2	43.5	31.8	0	130	26
25/11/2014	15:00	54.9	39.9	42.5	30.5	0	100	15
25/11/2014	16:00	57.8	47.3	45.9	31.2	0	70	15
25/11/2014	17:00	59.6	56	51.7	32.6	0	110	15
25/11/2014	18:00	49	39.6	40.3	31.9	0	130	21
25/11/2014	19:00	51	41.6	40	31.9	0	140	21
25/11/2014	20:00	56.3	51.8	48.9	31.5	0	150	17
25/11/2014	21:00	45.5	41.5	38.4	32.8	0	120	18
25/11/2014	22:00	52.9	45.7	42.6	33.6	0	110	30
25/11/2014	23:00	56.2	50.8	47.5	39.9	0	110	37
25/11/2014	0:00	55.5	48.5	45.5	37.1	0	110	41
26/11/2014	26/11/2014	56.5	49.5	46	37	0	100	35
26/11/2014	2:00	50.8	43.1	40	29.9	0	100	37
26/11/2014	3:00	39.9	31.8	30.5	27.5	0	90	35
26/11/2014	4:00	49.6	32	36.4	27.5	0	90	31
26/11/2014	5:00	55.8	44.1	43	28.9	0	90	26
26/11/2014	6:00	59.9	48.8	50.5	31.2	0	100	30
26/11/2014	7:00	60.3	49.4	49.1	33.4	0	90	31
26/11/2014	8:00	59.3	46.8	47.3	32.7	0	90	26
26/11/2014	9:00	54.3	46.6	45.8	34.7	0	90	28
26/11/2014	10:00	65.9	50.4	57.1	34.8	0	80	28
26/11/2014	11:00	61.3	52.2	49.9	35.6	0	90	28
26/11/2014	12:00	61.6	50.3	49.4	34.3	0	80	22
26/11/2014	13:00	66.9	54.6	53.6	31.6	0	50	18
26/11/2014	14:00	78.8	74.3	69.6	52.6	0	100	21
26/11/2014	15:00	79.4	71.2	68.1	42.3	2.4	210	30
26/11/2014	16:00	72.7	66.7	62.2	44.3	1.4	170	21
26/11/2014	17:00	66	63.8	60.8	46.6	2.4	60	18
26/11/2014	18:00	63.7	61.9	59.9	56.3	2.6	90	24
26/11/2014	19:00	64.7	62.9	58.6	47.7	2.8	80	21
26/11/2014	20:00	62.7	61.1	57.7	49.2	1.8	60	24
26/11/2014	21:00	59.2	40.6	43.8	32.2	0.6	110	22
26/11/2014	22:00	48.7	42.9	38.8	29.7	0	120	13
26/11/2014	23:00	52.4	43	41.2	32.8	0.2	100	31
26/11/2014	0:00	46.6	42.5	39.6	35.2	0	80	26

Noise Logging - 144 Strachan Road, Bullsbrook

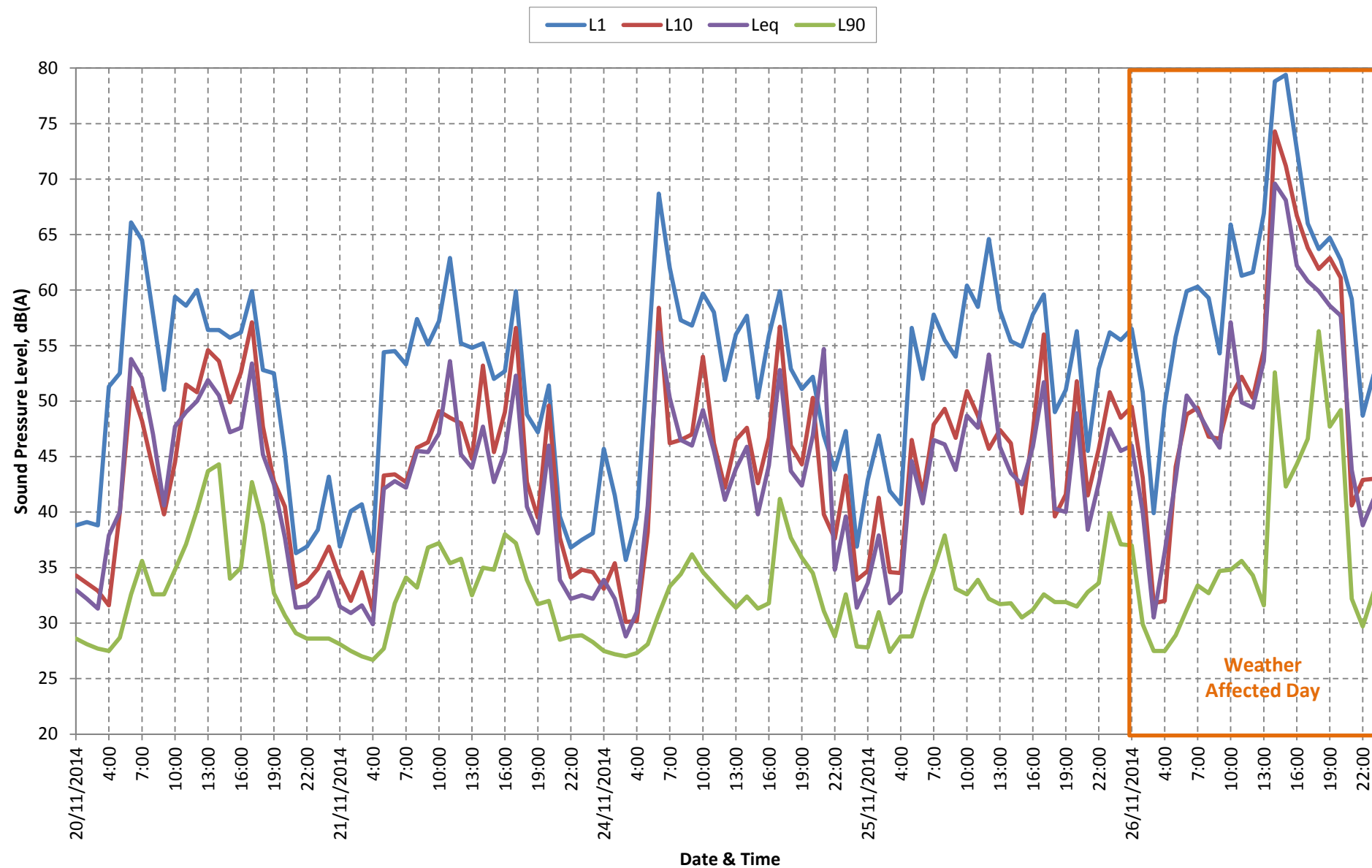


Table A19 – Results of Noise Logging 591 Muchea South Road, Muchea

Date	L _{A10,18hour} , dB	L _{Aeq,24hour} , dB	L _{Aeq(Day)} , dB	L _{Aeq(Night)} , dB
20 November 2014	51.6	50.3	51.3	46.8
21 November 2014*	49.9	55.3	56.8	48.2
24 November 2014	51.1	49.8	49.9	49.6
25 November 2014	53.6	51.1	51.0	51.3
26 November 2014*	55.6	55.0	55.3	54.3
Weekday Average	52.1	50.4	50.7	49.3

*Day excluded from the Average due to unacceptable weather conditions.

**Photograph A19 – Noise Logger at 591 Muchea South Road, Muchea**

Traffic Noise Measurement Data

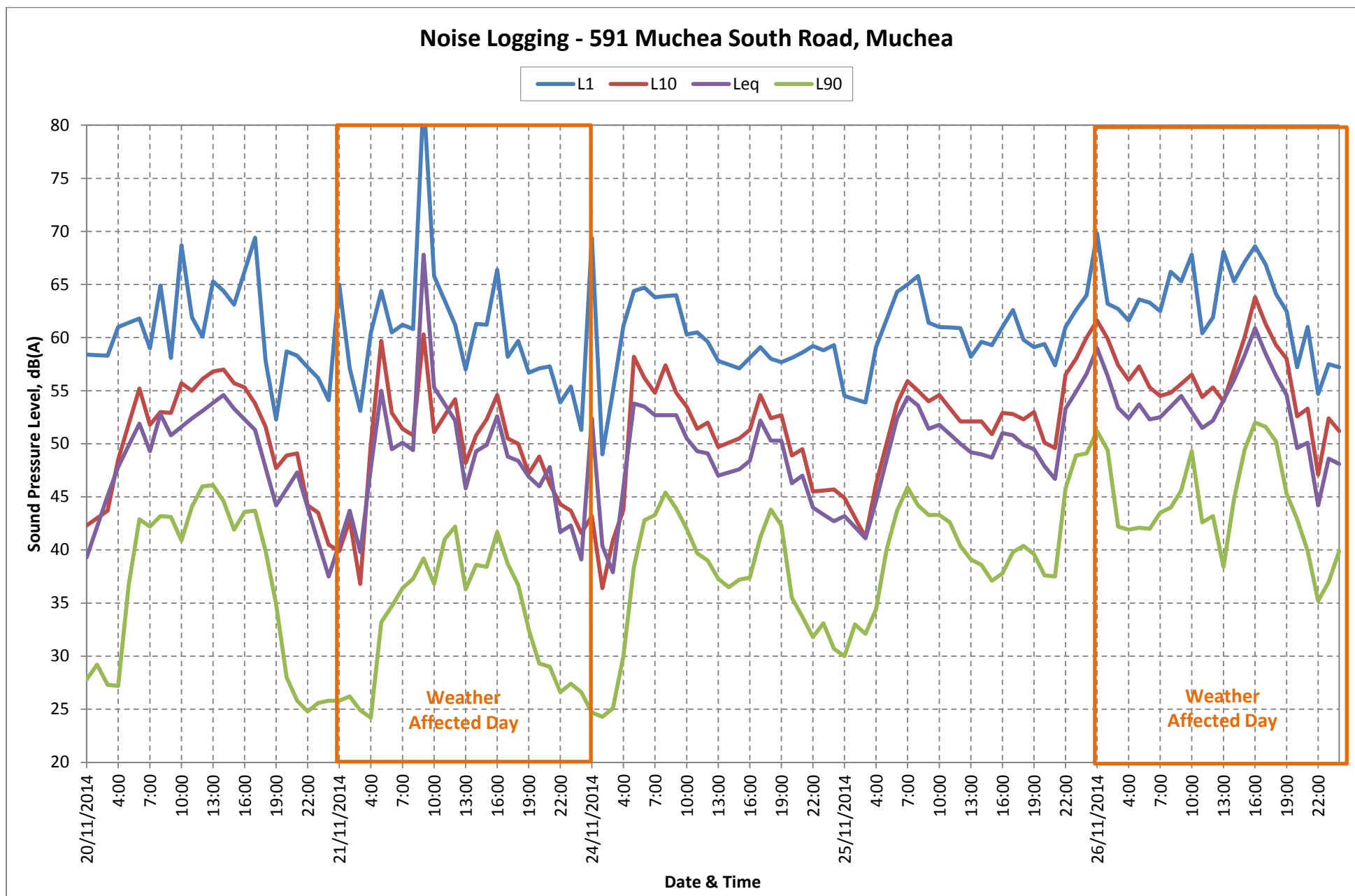
Item	Details
LOCATION	
Project	Perth-Darwin Highway NorthlinkWA
Street address	No. 591 Muchea South Road
Locality	Ballajura
Occupier	Pam and Ian Taylor, 0418480117 & 0409480117
Dates	20/11/2014 to 27/11/2014.
Category	Main Roads will provide this information if required.
SITE	
Distance from the microphone to the kerb	125m to Muchea South Road
Height of the road in relation to the ground	+0m
Road surface type	DGA
Speed zone	60 km/h
Absorbing ground	80%
Angle of view	170
Road gradient	Flat
Traffic flow	Vehicles per day. Main Roads to provide this information
Heavy vehicles	Percentage. Main Roads to provide this information
House-Road orientation.	East
Carriageways & lanes.	2,5
COMMENT	
Comment	Microphone placed on East façade at Front of house Freight Rail line is at 160m from Microphone (in same direction as road) Rail movements are audible from microphone.
REFERENCES	
AMG Z50 E/N	
Road name	Muchea South Road
EXCEL file	591 Muchea Rd MRWA Logger Sheet.xlsx
Raw data file	591 Muchea Rd_Sta.csv
EQUIPMENT	
Analyser number	16-707-043
Microphone number	16-707-043
Calibrator number	34883971
Calibrator values	94.0,94.1
Operator	Lloyd George Acoustics Pty Ltd - Matt Moyle
WEATHER	
Wind	Wind acceptability based on Pearce RAAF Data 20/11/14 - Neg Winds >18 km/h for 12 hours of day, rest of day calm 21/11/14 - 4 hours pos Winds <11 km/h, rest of day Neg winds <24km/h 24/11/14 - Var Winds <18 km/h, 6 hours above 21 km/h 25/11/14 - Pos Winds; morning 15 to 33 km/h, Afternoon 13-40 km/h 26/11/14 - Pos high winds all day, over 18km/h, Evening Rain

Hourly Noise Level Data
591 Muchea South Road, Muchea

Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
20/11/2014	20/11/2014	58.4	42.3	39.3	27.8	0	0	0
20/11/2014	2:00	58.4	43.0	42.2	29.2	0	350	4
20/11/2014	3:00	58.3	43.7	45.1	27.3	0	90	4
20/11/2014	4:00	61	48.5	47.8	27.2	0	350	5
20/11/2014	5:00	61.4	51.9	49.9	36.7	0	10	5
20/11/2014	6:00	61.8	55.2	51.9	42.9	0	0	0
20/11/2014	7:00	59	51.8	49.3	42.2	0	340	9
20/11/2014	8:00	64.9	53	52.8	43.2	0	340	17
20/11/2014	9:00	58.1	52.9	50.8	43.1	0	290	24
20/11/2014	10:00	68.7	55.7	51.6	40.9	0	310	28
20/11/2014	11:00	61.9	55	52.4	44.1	0	310	26
20/11/2014	12:00	60.1	56.1	53.1	46	0	300	31
20/11/2014	13:00	65.3	56.8	53.9	46.1	0	280	31
20/11/2014	14:00	64.4	57	54.6	44.6	0	260	35
20/11/2014	15:00	63.1	55.7	53.3	41.9	0	280	22
20/11/2014	16:00	66.3	55.3	52.3	43.6	0	280	28
20/11/2014	17:00	69.4	53.8	51.3	43.7	0	280	28
20/11/2014	18:00	57.8	51.6	47.8	39.9	0	260	26
20/11/2014	19:00	52.3	47.7	44.2	34.9	0	260	18
20/11/2014	20:00	58.7	48.9	45.8	28	0	320	9
20/11/2014	21:00	58.3	49.1	47.3	25.8	0	340	9
20/11/2014	22:00	57.2	44.2	44	24.8	0	360	11
20/11/2014	23:00	56.2	43.5	40.8	25.6	0	350	13
20/11/2014	0:00	54.1	40.5	37.5	25.8	0	340	8
21/11/2014	21/11/2014	65	39.9	40.6	25.8	0	350	13
21/11/2014	2:00	57.1	42.8	43.7	26.2	0	360	13
21/11/2014	3:00	53.1	36.8	39.8	24.9	0	10	11
21/11/2014	4:00	60.4	49.9	47.7	24.2	0	10	11
21/11/2014	5:00	64.4	59.7	55	33.2	0	10	11
21/11/2014	6:00	60.5	52.9	49.5	34.7	0	350	15
21/11/2014	7:00	61.2	51.4	50.1	36.4	0	340	17
21/11/2014	8:00	60.8	50.8	49.4	37.3	0	220	24
21/11/2014	9:00	82.7	60.3	67.8	39.2	0	230	24
21/11/2014	10:00	65.8	51.1	55.3	36.8	0	250	22
21/11/2014	11:00	63.5	52.7	53.8	41	0	250	21
21/11/2014	12:00	61.2	54.2	52.2	42.2	0	220	22
21/11/2014	13:00	57	48.2	45.8	36.3	0	230	21
21/11/2014	14:00	61.3	50.8	49.3	38.6	0	230	22
21/11/2014	15:00	61.2	52.3	49.9	38.4	0	230	21
21/11/2014	16:00	66.4	54.6	52.6	41.7	0	260	31
21/11/2014	17:00	58.2	50.5	48.8	38.7	0	220	22
21/11/2014	18:00	59.7	50	48.4	36.7	0	250	21
21/11/2014	19:00	56.7	47.2	46.9	32.5	0	240	17
21/11/2014	20:00	57.1	48.8	46	29.3	0	230	9
21/11/2014	21:00	57.3	46.2	47.8	29	0	270	8
21/11/2014	22:00	53.9	44.3	41.7	26.6	0	340	8
21/11/2014	23:00	55.4	43.7	42.3	27.4	0	350	5
21/11/2014	0:00	51.3	41.6	39.1	26.6	0	360	8
24/11/2014	24/11/2014	69.4	43.2	52.4	24.7	0	180	11
24/11/2014	2:00	49	36.4	40.4	24.3	0	180	13
24/11/2014	3:00	54.9	40.9	37.9	25.1	0	170	13
24/11/2014	4:00	61.1	43.8	45.9	30	0	170	15
24/11/2014	5:00	64.4	58.2	53.8	38.4	0	170	15
24/11/2014	6:00	64.7	56.2	53.5	42.8	0	200	8
24/11/2014	7:00	63.8	54.8	52.7	43.3	0	170	9
24/11/2014	8:00	63.9	57.4	52.7	45.4	0	120	11
24/11/2014	9:00	64	54.8	52.7	43.9	0	90	28
24/11/2014	10:00	60.3	53.5	50.5	42	0	70	13
24/11/2014	11:00	60.5	51.4	49.3	39.7	0	70	21
24/11/2014	12:00	59.6	52	49.1	39	0	70	21
24/11/2014	13:00	57.8	49.7	47	37.3	0	110	17
24/11/2014	14:00	57.5	50.1	47.3	36.5	0	90	18
24/11/2014	15:00	57.1	50.5	47.6	37.2	0	130	13
24/11/2014	16:00	58.1	51.3	48.4	37.4	0	140	9
24/11/2014	17:00	59.1	54.6	52.2	41.2	0	100	11
24/11/2014	18:00	58	52.4	50.3	43.8	0	200	30
24/11/2014	19:00	57.7	52.7	50.3	42.3	0	200	28
24/11/2014	20:00	58.1	48.9	46.3	35.5	0	200	21
24/11/2014	21:00	58.6	49.5	47	33.7	0	180	15
24/11/2014	22:00	59.2	45.5	44	31.8	0	170	13
24/11/2014	23:00	58.8	45.6	43.4	33.1	0	150	9
24/11/2014	0:00	59.3	45.7	42.7	30.7	0	150	9

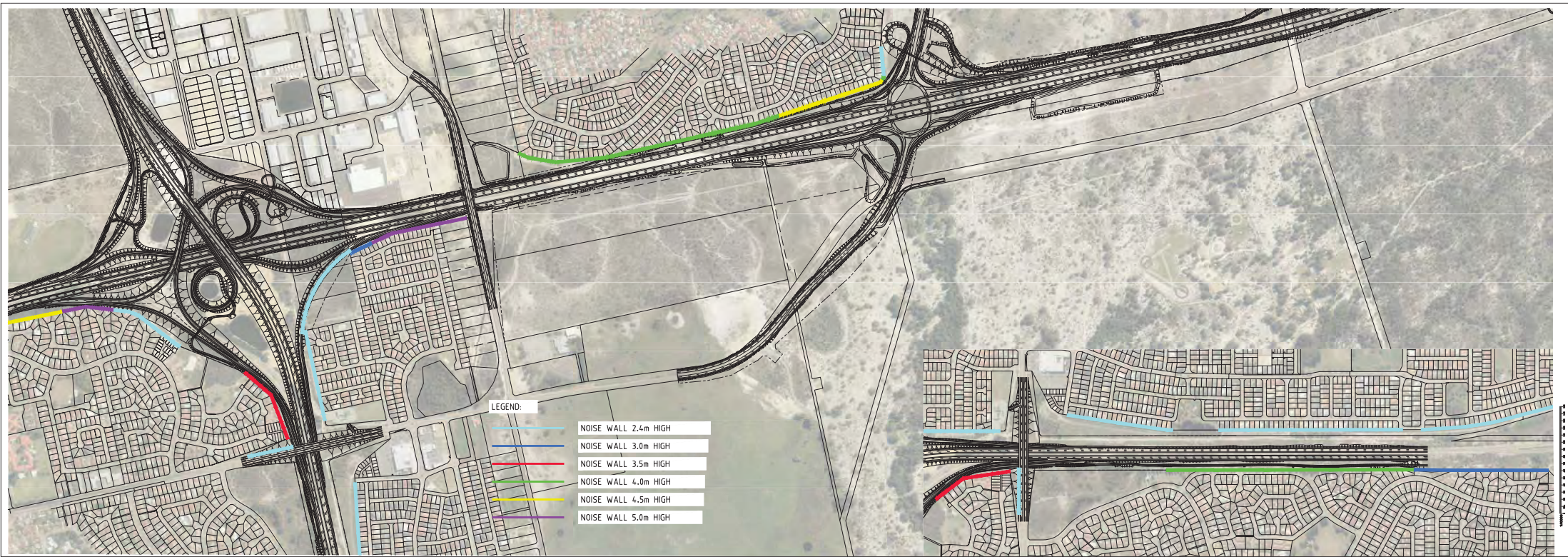
Hourly Noise Level Data
591 Muchea South Road, Muchea

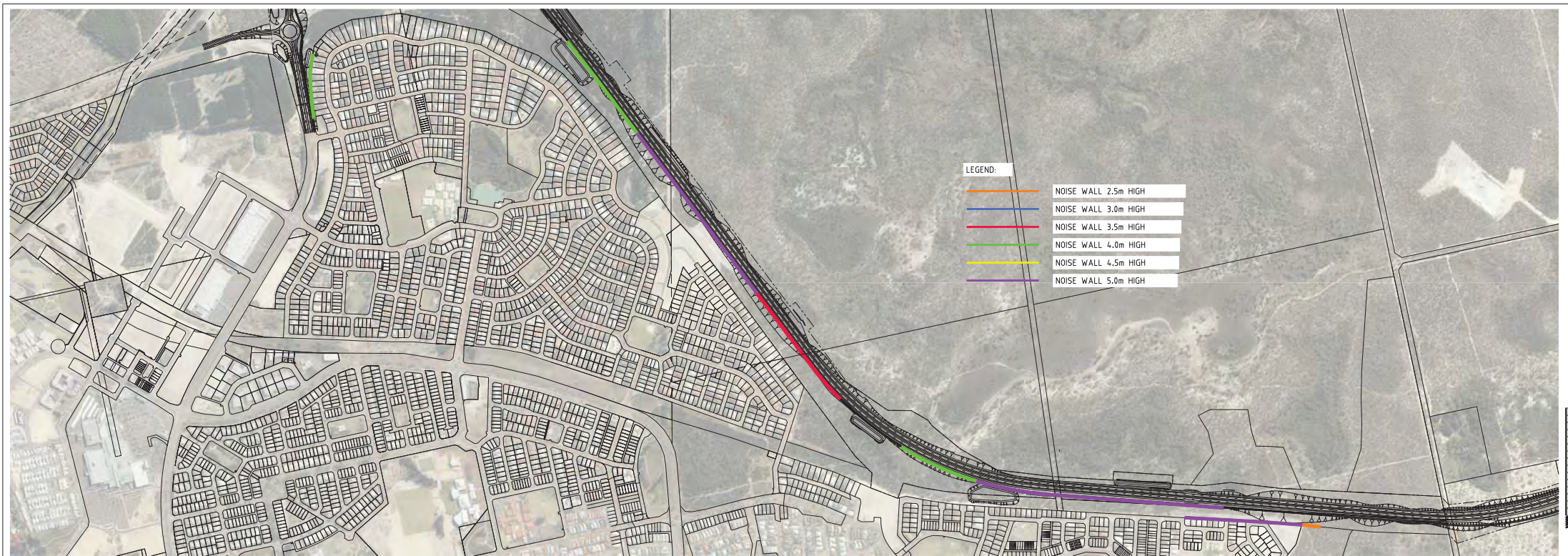
Date	Time	L1	L10	Leq	L90	Rain mm	Wind degrees	Wind km/h
25/11/2014	25/11/2014	54.5	44.9	43.2	30	0	150	5
25/11/2014	2:00	54.2	43.1	42.2	33	0	150	15
25/11/2014	3:00	53.9	41.2	41.1	32.1	0	90	24
25/11/2014	4:00	59.1	46.2	44.6	34.4	0	90	24
25/11/2014	5:00	61.7	50.0	48.5	40	0	90	31
25/11/2014	6:00	64.3	53.8	52.4	43.7	0	90	30
25/11/2014	7:00	65	55.9	54.4	45.9	0	90	33
25/11/2014	8:00	65.8	55	53.6	44.2	0	90	33
25/11/2014	9:00	61.4	54	51.4	43.3	0	100	22
25/11/2014	10:00	61	54.6	51.8	43.3	0	100	17
25/11/2014	11:00	61.0	53.4	50.9	42.6	0	130	21
25/11/2014	12:00	60.9	52.1	50	40.4	0	90	18
25/11/2014	13:00	58.2	52.1	49.2	39.1	0	90	13
25/11/2014	14:00	59.6	52.1	49	38.6	0	130	26
25/11/2014	15:00	59.3	50.9	48.7	37.1	0	100	15
25/11/2014	16:00	61	52.9	51	37.8	0	70	15
25/11/2014	17:00	62.6	52.8	50.8	39.8	0	110	15
25/11/2014	18:00	59.8	52.3	49.9	40.4	0	130	21
25/11/2014	19:00	59.1	53	49.5	39.6	0	140	21
25/11/2014	20:00	59.4	50.1	47.9	37.6	0	150	17
25/11/2014	21:00	57.4	49.6	46.7	37.5	0	120	18
25/11/2014	22:00	61	56.5	53.3	45.8	0	110	30
25/11/2014	23:00	62.6	58	54.9	48.9	0	110	37
25/11/2014	0:00	64	60	56.6	49.1	0	110	41
26/11/2014	26/11/2014	69.8	61.6	59	51.2	0	100	35
26/11/2014	2:00	63.2	59.9	56.4	49.4	0	100	37
26/11/2014	3:00	62.7	57.4	53.4	42.2	0	90	35
26/11/2014	4:00	61.6	56	52.4	41.9	0	90	31
26/11/2014	5:00	63.6	57.3	53.7	42.1	0	90	26
26/11/2014	6:00	63.3	55.3	52.3	42	0	100	30
26/11/2014	7:00	62.5	54.5	52.5	43.5	0	90	31
26/11/2014	8:00	66.2	54.8	53.5	44	0	90	26
26/11/2014	9:00	65.3	55.7	54.5	45.6	0	90	28
26/11/2014	10:00	67.8	56.5	53.0	49.3	0	80	28
26/11/2014	11:00	60.4	54.4	51.5	42.6	0	90	28
26/11/2014	12:00	61.9	55.3	52.2	43.2	0	80	22
26/11/2014	13:00	68.1	54	54.1	38.4	0	50	18
26/11/2014	14:00	65.3	57.0	56	44.8	0	100	21
26/11/2014	15:00	67.1	60	58.3	49.4	2.4	210	30
26/11/2014	16:00	68.6	63.8	60.9	52	1.4	170	21
26/11/2014	17:00	66.9	61.3	58.5	51.6	2.4	60	18
26/11/2014	18:00	64.1	59.3	56.4	50.2	2.6	90	24
26/11/2014	19:00	62.5	58	54.6	45.3	2.8	80	21
26/11/2014	20:00	57.2	52.6	49.6	42.9	1.8	60	24
26/11/2014	21:00	61	53.3	50.1	39.9	0.6	110	22
26/11/2014	22:00	54.7	47.1	44.2	35.2	0	120	13
26/11/2014	23:00	57.5	52.4	48.6	37	0.2	100	31
26/11/2014	0:00	57.2	51.2	48.1	39.9	0	80	26



Appendix C

Noise Wall Details





Appendix D

Predicted Noise Levels With and Without Noise Walls

Perth Darwin National Highway Project

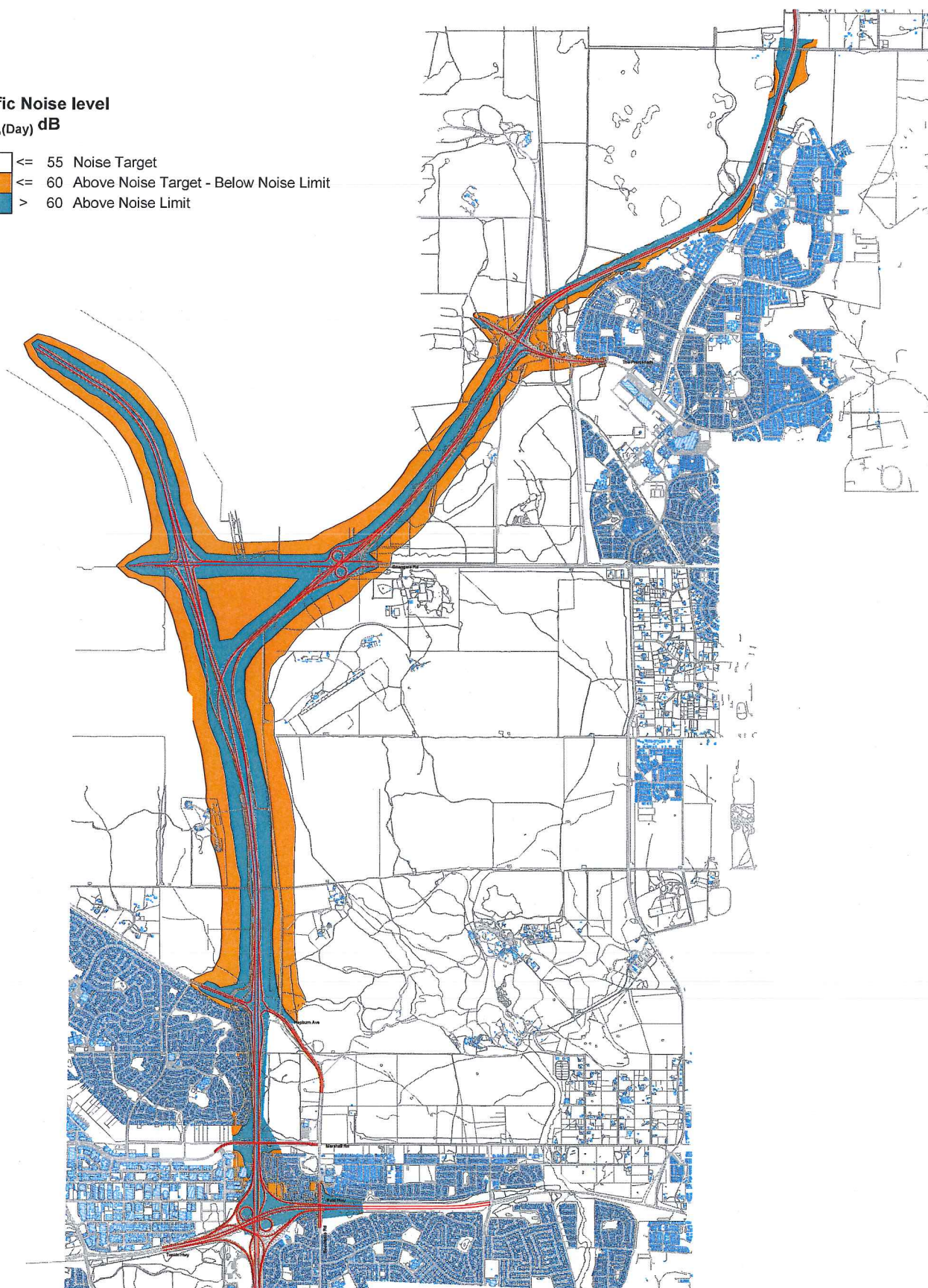
L_{Aeq,Day} Noise Level Contours - With Noise Mitigation

Figure D-1

Traffic Noise level

L_{Aeq,(Day)} dB

	<= 55 Noise Target
	<= 60 Above Noise Target - Below Noise Limit
	> 60 Above Noise Limit



Scale

0 350 700 1400 2100 m



Signs and symbols

-  Road Source
-  Building
-  Noise Wall



Lloyd George Acoustics
by Terry George
terry@lgacoustics.com.au
(08) 9401 7770

Perth Darwin National Highway Project

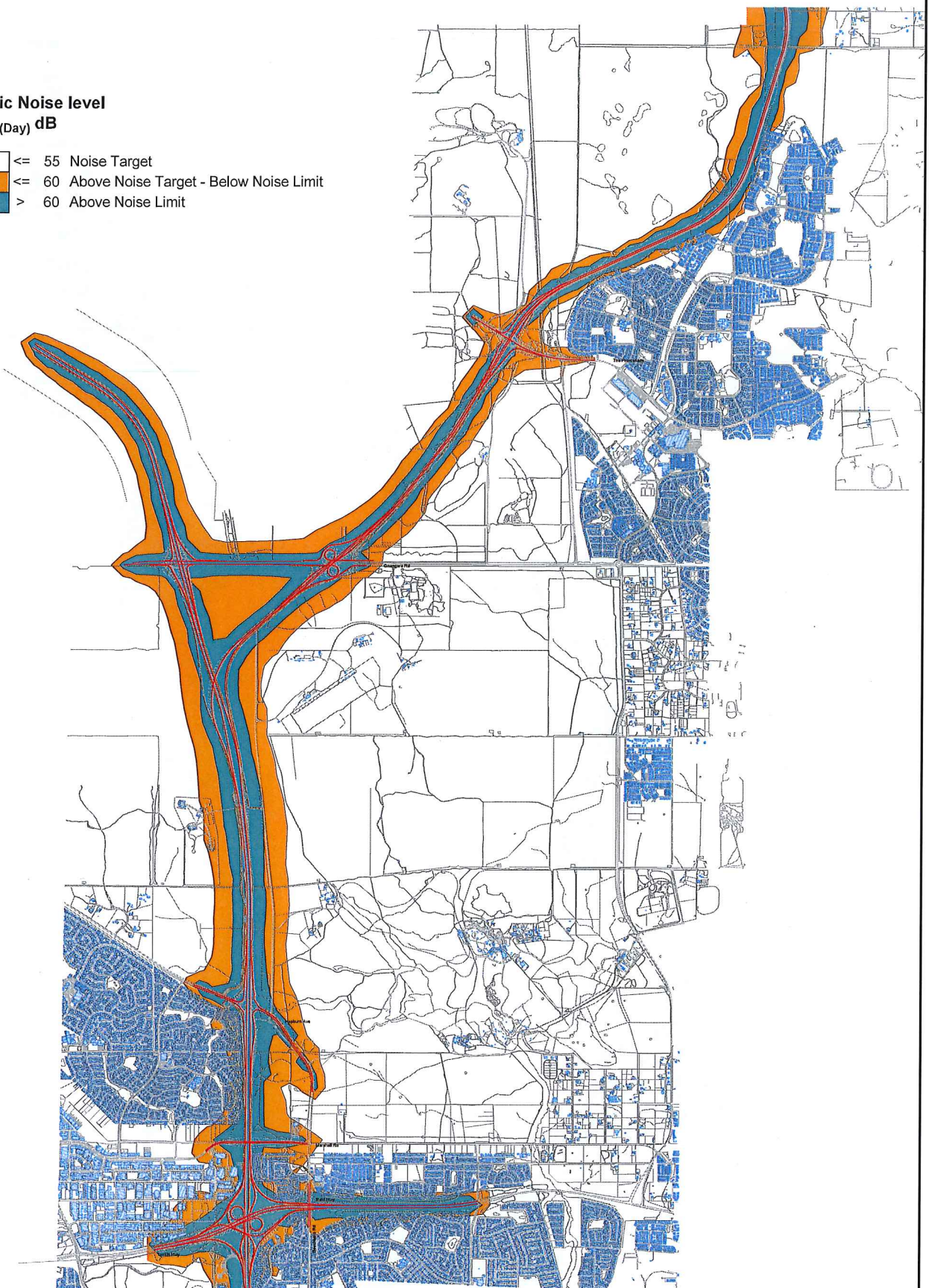
L_{Aeq,Day} Noise Level Contours - Without Noise Mitigation

Figure D-2

Traffic Noise level

L_{Aeq,Day} dB

	≤ 55	Noise Target
	≤ 60	Above Noise Target - Below Noise Limit
	> 60	Above Noise Limit



Scale

0 350 700 1400 2100 m



Signs and symbols

-  Road Source
-  Building
-  Noise Wall



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Appendix E

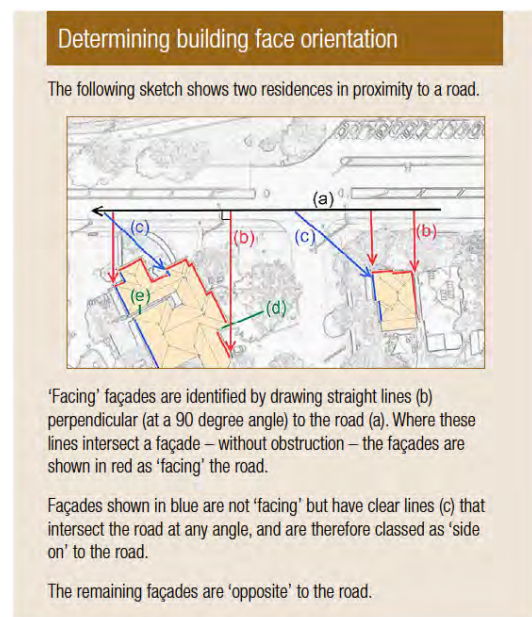
Package B Architectural Treatment Package

The packages and information provided on the following pages are taken from *Implementation Guidelines for State Planning Policy 5.4 Road and Rail Transport Noise and freight Considerations in Land Use Planning*; December 2014.

Any departures from the acceptable treatment specifications need to be supported by professional advice from a competent person that the proposal will achieve the requirements of the Policy.

With regards to the packages, the following definitions are provided:

- **Facing** the transport corridor: Any part of a building façade is 'facing' the transport corridor if any straight line drawn perpendicular to its nearest road lane or railway line intersects that part of the façade without obstruction (ignoring any fence).
- **Side-on** to transport corridor: Any part of a building façade that is not 'facing' is 'side-on' to the transport corridor if any straight line can be drawn from it to intersect the nearest road lane or railway line without obstruction (ignoring any fence).
- **Opposite** to transport corridor: Neither 'side on' nor 'facing', as defined above.



Package B

Area	Orientation to Road	Package B
Bedrooms	Facing	Windows systems: Glazing up to 40% of floor area (minimum $R_w + C_{tr}$ 31) – 10mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings.
	Side	Windows systems: As above.
	Opposite	Windows systems: Glazing up to 40% of floor area (minimum $R_w + C_{tr}$ 25) – 4mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings. Alternatively, 6mm thick glass (monolithic, toughened or laminated) in sliding frame.
Other Habitable Rooms Including Kitchens	Facing	Windows and external door systems: Glazing up to 60% of floor area (minimum $R_w + C_{tr}$ 31) – 10mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings. Doors to be either 35mm thick solid timber core door with full perimeter acoustic seals. Glazed inserts to match the above. Sliding glass doors to have laboratory certificate confirming $R_w + C_{tr}$ 31 performance. Alternative, change to hinged door with perimeter acoustic seals and 10mm thick glass.
	Side	Windows and external door systems: Glazing up to 60% of floor area (minimum $R_w + C_{tr}$ 28) – 6mm thick glass (monolithic, toughened or laminated) in fixed sash, awning or casement opening with seals to openings. Doors to be either 35mm thick solid timber core door with full perimeter acoustic seals. Glazed inserts to match the above. Glass doors to be same performance ($R_w + C_{tr}$ 28) including brush seals.
	Opposite	No requirements
General	Any	- Roof and ceiling - Standard roof construction with 10mm plasterboard ceiling and minimum R2.5 insulation between ceiling joists. - Eaves to be closed using 4mm thick compressed fibre cement sheet. - Mechanical ventilation – Refer following page.

Mechanical Ventilation requirements

It is noted that natural ventilation must be provided in accordance with F4.6 and F4.7 of Volume One and 3.8.5.2 of Volume Two of the National Construction Code. Where the noise *limit* is likely to be exceeded, a mechanical ventilation system is usually required. Mechanical ventilation systems will need to comply with AS 1668.2 – *The use of mechanical ventilation and air-conditioning in buildings*.

In implementing the acceptable treatment packages, the following must be observed:

- Evaporative air conditioning systems will meet the requirements for Packages A and B provided attenuated air vents are provided in the ceiling space and designed so that windows do not need to be opened.
- Refrigerant based air conditioning systems need to be designed to achieve fresh air ventilation requirements.
- External openings (e.g. air inlets, vents) need to be positioned facing away from the transport corridor where practicable.
- Ductwork needs to be provided with adequate silencing to prevent noise intrusion.

Appendix F

Terminology

The following is an explanation of the terminology used throughout this report.

Decibel (dB)

The decibel is the unit that describes the sound pressure and sound power levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

A-Weighting

An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A dB.

L_1

An L_1 level is the noise level which is exceeded for 1 per cent of the measurement period and is considered to represent the average of the maximum noise levels measured.

L_{10}

An L_{10} level is the noise level which is exceeded for 10 per cent of the measurement period and is considered to represent the “intrusive” noise level.

L_{90}

An L_{90} level is the noise level which is exceeded for 90 per cent of the measurement period and is considered to represent the “background” noise level.

L_{eq}

The L_{eq} level represents the average noise energy during a measurement period.

$L_{A10,18hour}$

The $L_{A10,18hour}$ level is the arithmetic average of the hourly L_{A10} levels between 6.00 am and midnight. The *CoRTN* algorithms were developed to calculate this parameter.

$L_{Aeq,24hour}$

The $L_{Aeq,24hour}$ level is the logarithmic average of the hourly L_{Aeq} levels for a full day (from midnight to midnight).

$L_{Aeq,8hour} / L_{Aeq} (Night)$

The $L_{Aeq} (Night)$ level is the logarithmic average of the hourly L_{Aeq} levels from 10.00 pm to 6.00 am on the same day.

$L_{Aeq,16hour} / L_{Aeq} (Day)$

The $L_{Aeq} (Day)$ level is the logarithmic average of the hourly L_{Aeq} levels from 6.00 am to 10.00 pm on the same day. This value is typically 1-3 dB less than the $L_{A10,18hour}$.

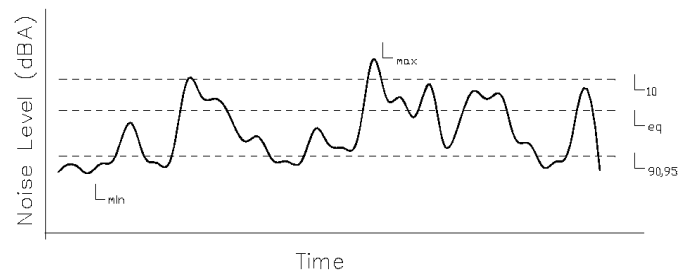
Satisfactory Design Sound Level

The level of noise that has been found to be acceptable by most people for the environment in question and also to be not intrusive.

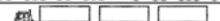
Maximum Design Sound Level

The level of noise above which most people occupying the space start to become dissatisfied with the level of noise.

Chart of Noise Level Descriptors



Austrorads Vehicle Class

AUSTROADS Vehicle Classification System									
Level 1	Level 2	Level 3	AUSTROADS Classification						
Length (m/feet)	Axes and Axle Groups	Vehicle Type	Class	Parameters		Typical Configuration			
		Typical Description							
Short up to 5.5m	1 or 2	Short Sedan, Wagon, 4WD Utility, Light van, Bicycle, Motorhome, etc.	1	d(1) < 3.2m and axles = 2					
		Short - Trailing Trailer, Caravan, Boat, etc.	2	groups = 3 d(1) < 2.1m, d(1) < 3.2m, d(2) < 2.1m and axles = 3, 4 or 5					
Medium 5.5m to 14.5m	3	Two Axle Truck or Bus	3	d(1) > 3.2m and axles = 2					
		Three Axle Truck or Bus	4	axles = 3 and groups = 2					
		Four Axle Truck	5	axles = 3 and groups = 2					
		Three Axle Articulated Three axle articulated vehicle, or Rigid vehicle and trailer	6	d(1) > 3.2m, axles = 3 and groups = 3					
Long 14.5m to 19.5m	4	Four Axle Articulated Four axle articulated vehicle, or Rigid vehicle and trailer	7	d(2) < 2.1m or d(1) < 2.1m or d(2) < 3.2m axles = 4 and groups = 2					
		Five Axle Articulated Five axle articulated vehicle, or Rigid vehicle and trailer	8	d(2) < 2.1m or d(1) < 2.1m or d(2) < 3.2m axles = 5 and groups = 2					
		Six Axle Articulated Six axle articulated vehicle, or Rigid vehicle and trailer	9	axles = 6 and groups = 2 or axles = 6 and groups = 3					
		8 Double 8 Double, or Heavy truck and trailer	10	groups = 4 and axles = 6					
Medium Combination 17.5m to 36.5m	5 or 6	Double Road Train Two road train, or Medium articulated vehicle and one dog trailer (M.A.D.)	11	groups = 5 or 6 and axles = 6					
Large Combination Over 33.5m	6	Triple Road Train Three road train, or Heavy truck and three trailers	12	groups = 6 and axles = 6					
Definitions:			d(1): Distance between first and second axle d(2): Distance between second and third axle						
Group: Number of axle groups Axles: Number of axles (maximum axle spacing of 10.5m)									

Typical Noise Levels

