

Acoustics Technical Note

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Copies to	Ian Roach	Date	01/08/11
Subject	Devonport EfW Facility: Ambient Noise Monitoring for Construction and Operational Traffic Assessment.		

Introduction

This technical note provides measured noise level data at receptors surrounding the Devonport EfW site subject to road traffic noise and an assessment of the impact of proposed EfW traffic on those receptors. It has been compiled based on a request by the planning officer. The section of Weston Mill Drive (St Budeaux Bypass) between Wolseley Road and Carlton Terrace has been identified by DEFRA through their Noise Action Planning process as exhibiting excessive road traffic noise levels. This acoustic technical note addresses the following comments:

The section of Weston Mill Drive (St Budeaux Bypass) between Wolseley Road and Carlton Terrace has been identified by DEFRA through their Noise Action Planning process as exhibiting excessive road traffic noise levels and as such will be the main focus of these comments.

- 1. No noise sensitive receptor was identified for the section of Weston Mill Drive between Wolseley Road and Carlton Terrace where the DEFRA mapping identifies excessive traffic noise.*
- 2. All of the noise monitoring sites were located west of the proposed facility without any sites located along Weston Mill Drive/St Budeaux Bypass. Without any existing traffic noise level data from east of the facility particularly from Weston Mill Drive, it is difficult to understand how the assessment of construction traffic or the modelling for operational traffic could adequately predict the impact of the noise directly generated by the facility and the increased traffic noise related to the facility, in the area, and in particular along Weston Mill Drive.*
- 3. Because the noise modelling undertaken does not extend as far as Weston Mill Drive between Wolseley Road and Carlton Terrace this area is not therefore shown on figures 14.3-14.5.*
- 4. The short term noise monitoring at ST1, ST2 and ST3 was all undertaken between 12:50 and 14:35. This is probably appropriate in terms of when the facility will be working at its maximum and so will generate the highest noise output however this is outside of the peak traffic periods (8-9am and 4-6pm) so again it is uncertain if the impact of the road traffic noise could be fully and accurately incorporated into the construction traffic assessment and the operational traffic modelling processes.*

There is an existing, identified traffic noise problem along Weston Mill Drive. As such for such a significant development that will result in a significant increase in HGV movements to and from the site and on the local road network and a worsening of the noise environment, mitigation measures should be provided for the residential housing and sensitive receptors within and adjacent to the area of concern. This could include low noise road surfacing, noise attenuation barriers and/or improved window glazing.

In a follow up telephone conversation with PCC following the provision of these comments, it was agreed that further noise measurements at ST1, ST2 and ST3 were not required. It was agreed to carry out short term noise measurements at representative residential receptors on Weston Mill Drive and Wolseley Road during both peak hour times and during inter-peak times, and to provide an assessment of the impact of the additional traffic due to the proposed EfW site.

Noise Measurements

Noise levels were measured at three residential receptor locations to the east of the Devonport EfW site on Thursday 21st July and Friday 22nd July 2011. These locations were:

- R1 – 3 Weston Mill Drive;

- R2 – 392 Wolseley Road; and
- R3 – 458 Wolseley Road.

The measurements positions are shown in Figure 01 in Appendix 1.

A brief summary of the weather conditions is as follows:

- 21st July Wind < 2 ms⁻¹ from NW, 18°C, sunny.
- 22nd July No wind, 16°C, overcast.

Measurements were taken at one metre from the façade of the properties during the AM peak (07:00-09:00), PM peak (16:00-18:00) and interpeak period.

The measured noise levels are given in Table 01 and illustrated in Figures 02 to 04, Appendix 1.

Table 01 Overview of Noise Measurements at Locations ST1 to ST3

Location ID	Location	Date	Start Time	End Time	L _{Aeq} (dB)	L _{A10} (dB)	L _{A90} (dB)
R1	3 Weston Mill Drive	21.07.11	13:32	15:57	71	73.6	61
		21.07.11	15:57	18:11	70	73.0	62
		22.07.11	07:13	08:58	72	74.8	63
		22.07.11	08:58	12:06	71	73.9	61
R2	392 Wolseley Road	21.07.11	14:15	16:00	71	74.9	61
		21.07.11	16:00	18:00	72	75.4	62
		22.07.11	07:35	09:00	73	75.5	64
		22.07.11	09:55	11:55	72	75.2	63
R3	458 Wolseley Road	21.07.11	13:56	15:56	69	72.1	55
		21.07.11	16:01	18:16	69	72.5	56
		22.07.11	07:20	09:00	69	72.0	55
		22.07.11	09:00	12:10	69	71.9	56

The average noise level for:

- 3 Weston Mill Drive (R1) was 73.0 to 74.8 dB L_{A10} during the peak period and 73.6 to 73.9 dB L_{A10} during the interpeak period.
- 392 Wolseley Road (R2) was 75.4 to 75.5 dB L_{A10} during the peak period and 74.9 to 75.2 dB L_{A10} during the interpeak period.
- 458 Wolseley Road (R3) was 72.0 to 72.5 dB L_{A10} during the peak period and 71.9 to 72.1 dB L_{A10} during the interpeak period.

The dominant noise source at all noise monitoring locations was from road traffic.

Construction and Operational Traffic Methodology

The magnitude of the impact of the additional traffic generated by the construction and operation of the development has been assessed by calculating the change in the 18 hour traffic noise levels (L_{A10,18h}) for the receptors above.

It is accepted that changes in road traffic noise levels of 1 dB(A) or less are generally imperceptible, and changes of up to 3 dB(A) are generally required to be a noticeable.

The effects of the additional traffic during construction of the EfW are presented in Table 02, Appendix 2, which shows the baseline traffic flows, the “with construction traffic” flows and the change in Basic Noise Level for the road links on Weston Mill Drive (Basic Noise Level is the calculated road traffic noise level at a reference distance of 10 metres from the edge of the carriageway).

The effects of the additional traffic during operation of the EfW are presented in Table 03, Appendix 2, which shows the baseline traffic flows, the “with operation traffic” flows and the change in Basic Noise Level for the road links on Weston Mill Drive and Wolseley Road.

Construction Traffic Noise Assessment

The predicted increase in noise level along Weston Mill Drive (R1) due to the proposed construction traffic from the EfW site is 0.3 dB, therefore the resulting levels would be 73.3 to 75.1 dB L_{A10} during the peak period and 73.9 to 74.2 dB L_{A10} during the interpeak period.

The increase in noise level is well below 1 dB(A), and the significance is assessed as negligible.

Operational Traffic Noise Assessment

The predicted increase in noise level along Weston Mill Drive (R1) due to the proposed operational traffic from the EfW site is 0.3 dB, therefore the resulting levels would be 73.3 to 75.1 dB L_{A10} during the peak period and 73.9 to 74.2 dB L_{A10} during the interpeak period.

The predicted increase in noise level along Wolseley Road (R2) due to the proposed operational traffic is 0.1 dB, therefore the resulting levels would be 75.5 to 75.6 dB L_{A10} during the peak period and 75.0 to 75.3 dB L_{A10} during the interpeak period.

The predicted increase in noise level along Wolseley Road (R3) due to the proposed operational traffic is 0.0 dB, therefore the resulting levels remain at 72.0 to 72.5 dB L_{A10} during the peak period and 71.9 to 72.1 dB L_{A10} during the interpeak period.

The increases in noise level are well below 1 dB(A), and the significance is assessed as negligible.

Conclusion

Considering the negligible increases in road traffic noise levels to residential receptors along Weston Mill Drive and Wolseley Road (the increases will be imperceptible to residents) resulting from both construction and operation of the EfW facility, it is concluded that noise mitigation is not required to reduce the impacts of the EfW traffic.

This does not negate the fact that noise levels to properties along these road links are currently high, as identified in the Defra noise mapping.

Clause 14 of the draft Section 106 Heads of Terms submitted with the planning application states that MVV will:

"...make a contribution to road safety and road noise reduction schemes within 0.5 km of the site provided that the contribution does not exceed £50,000 and that the schemes are carried out within 5 years of the commencement of the permitted development."

It may be that MVV can make a contribution to reduce noise levels to these properties. The provision of noise barriers to properties on Weston Mill Drive, between Wolseley Road and Carlton Terrace, may be possible, but the landscape and visual aspects will need to be considered. The provision of noise barriers to properties on Wolseley Road is likely to be impracticable on this established road, with properties close to the road.

The provision of a low noise surface to this section of Weston Mill Road may reduce noise levels slightly. However, these are most effective at higher speeds, not the prevailing speeds in this area.

Improved glazing to properties would provide reductions in internal noise levels. However, the noise impacts to properties on Weston Mill Drive and Wolseley Road are dominated by existing traffic conditions, not the proposed EfW traffic. A decision would have to be made as to which properties would be treated (ref. Clause 14 above) under MVV's commitment.

APPENDIX 1 – NOISE MEASUREMENTS

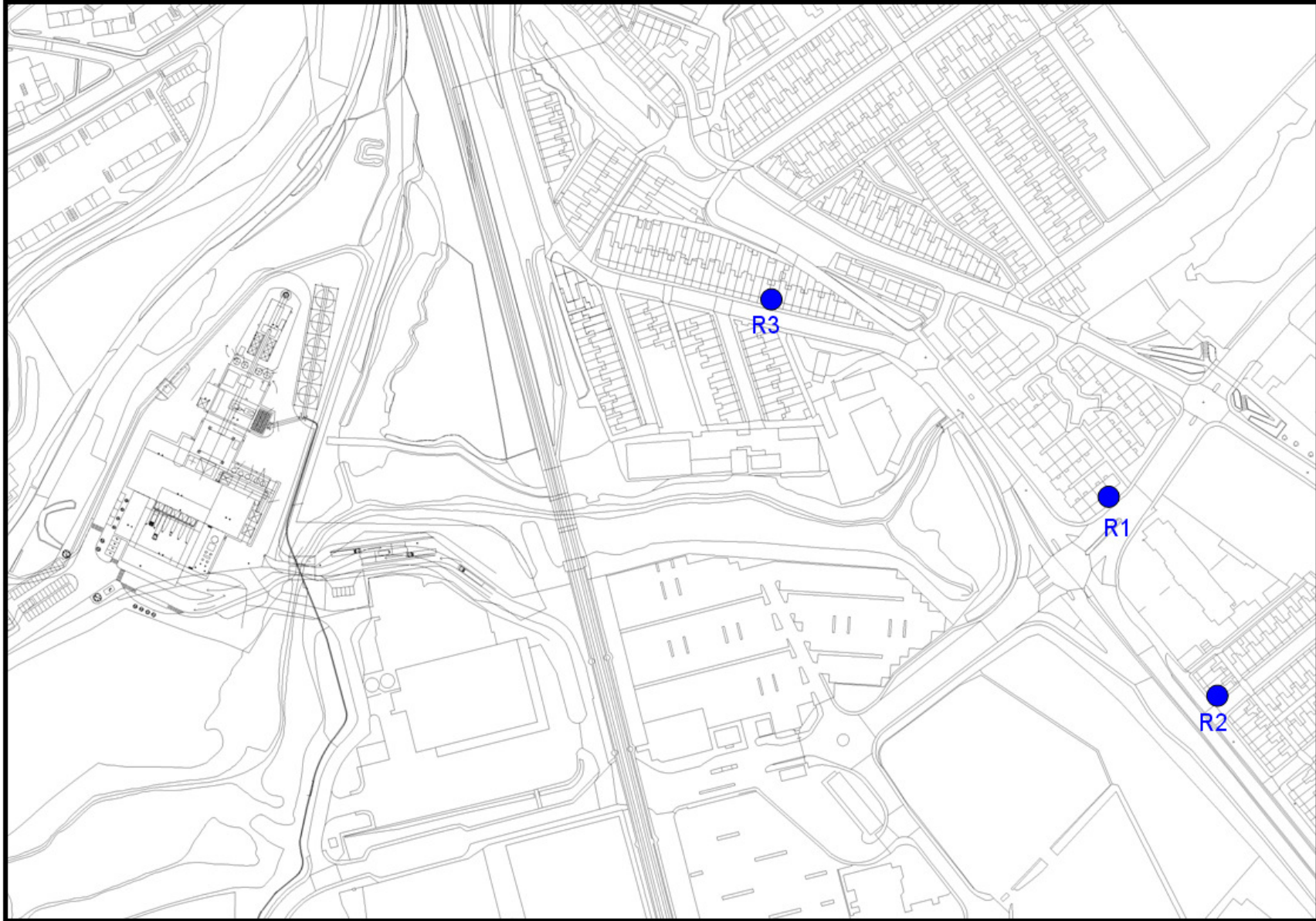


Figure 01: Noise Monitoring Locations, R1 to R3

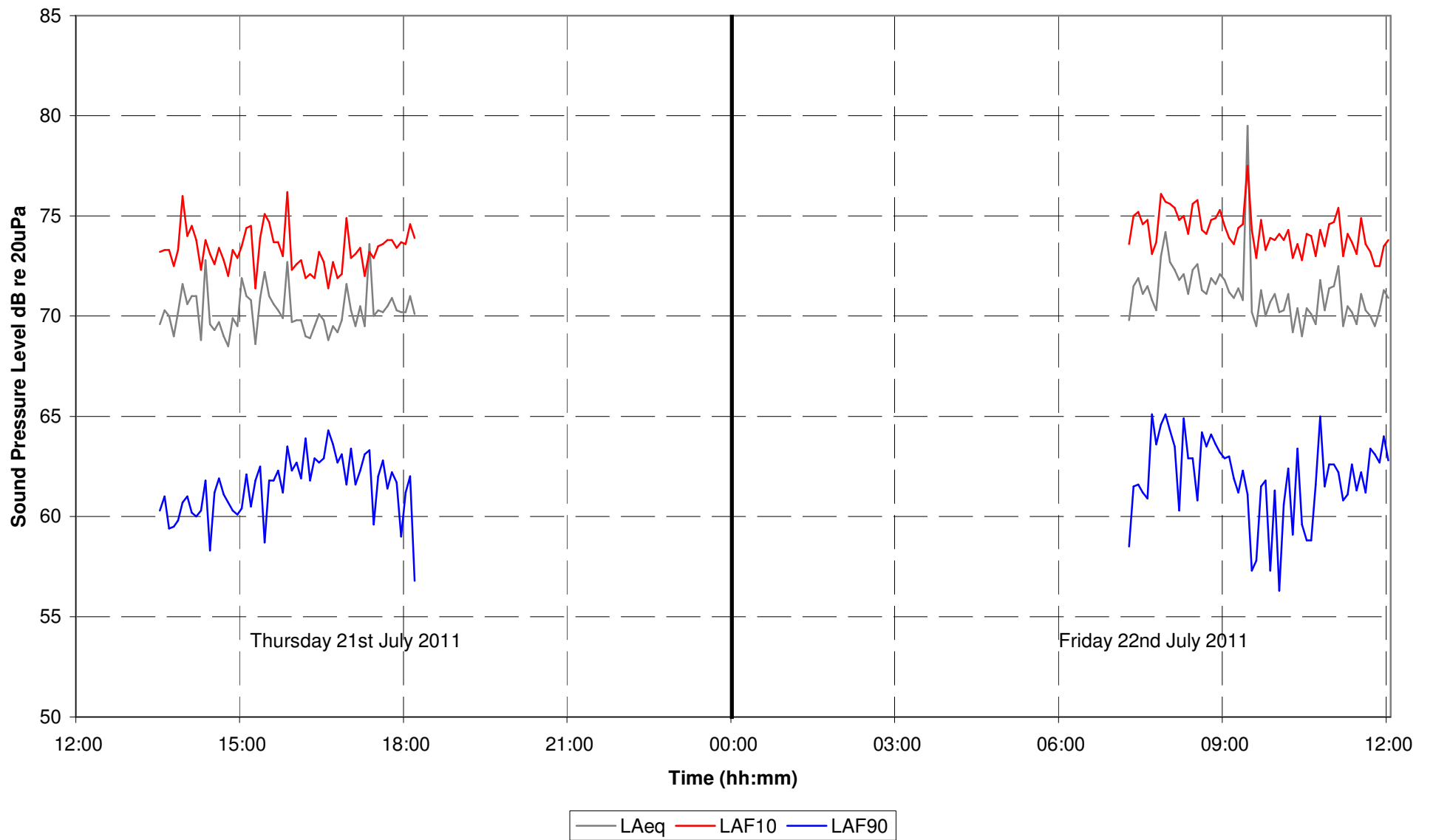


Figure 02: Noise Monitoring Plot at Location R1

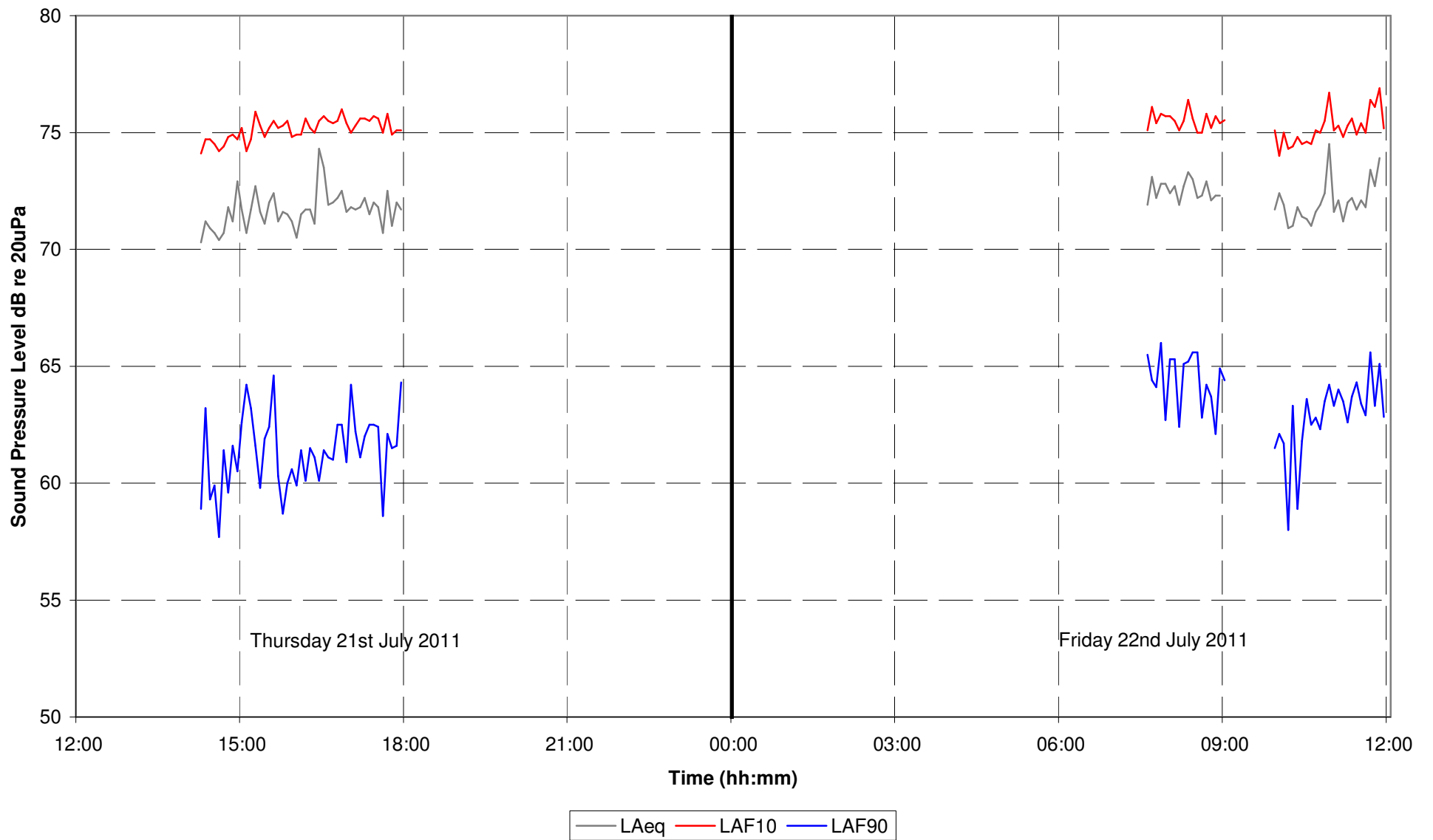


Figure 03: Noise Monitoring Plot at Location R2

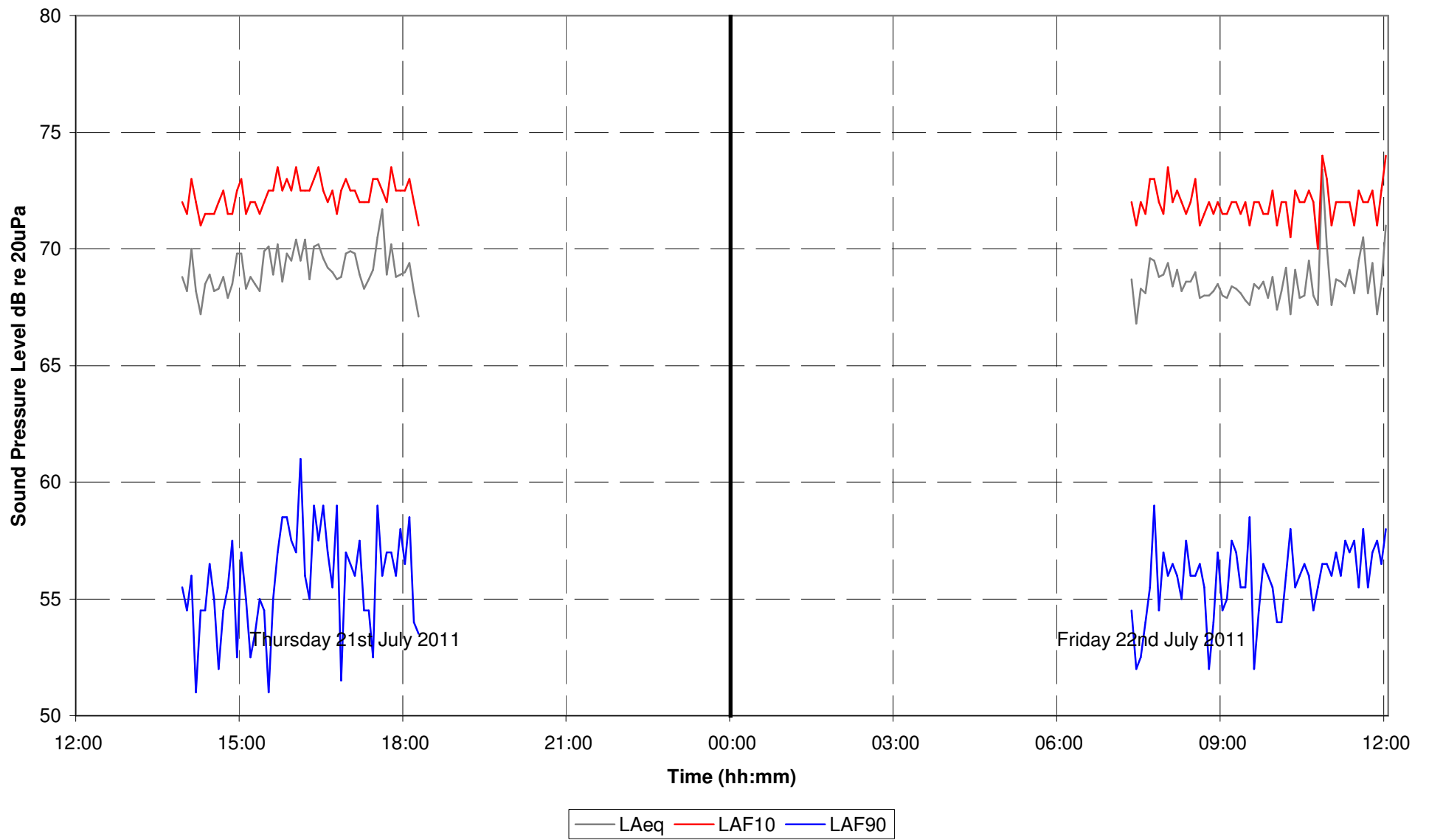


Figure 04: Noise Monitoring Plot at Location R3

APPENDIX 2 – CONSTRUCTION AND OPERATIONAL TRAFFIC DATA

Table 02 Construction Traffic Noise Assessment

Road Link	2011 Baseline				2011 With Construction Traffic				Change in BNL
	Flow (18h AAWT)	%HGV	Speed (kph)	BNL (L _{A10,18h})	Flow (18h AAWT)	%HGV	Speed (kph)	BNL (L _{A10,18h})	
Weston Mill Drive east of Wolseley Rd junction	22866	2.0	48	69.5	23324	2.6	48	69.8	0.3

BNL = Basic Noise Level, which is the calculated road traffic noise level at a reference distance of 10 metres from the edge of the carriageway.

Table 03 Operational Traffic Noise Assessment

Road Link	2014 Do Minimum (Base + Growth)				2014 Do Something (Do Minimum + Development traffic)				Change in BNL
	Flow (18h AAWT)	%HGV	Speed (kph)	BNL (L _{A10,18h})	Flow (18h AAWT)	%HGV	Speed (kph)	BNL (L _{A10,18h})	
Weston Mill Drive east of Wolseley Rd junction	23484	2.0	48	69.7	23713	2.8	48	70.0	0.3
Wolseley Rd south of Weston Mill Drive junction	28439	1.4	48	70.2	28534	1.7	48	70.4	0.1
Wolseley Rd (north of Weston Mill Drive junction) - one way flows	13732	1.0	48	66.9	13743	1.1	48	66.9	0.0