



Forth Replacement Crossing

**Employer's Delivery Team
Construction Noise Monitoring Report**

**Principal Contract and M9J1a Contract
(March 2012)**



An agency of  The Scottish Government



FORTH REPLACEMENT CROSSING

**EMPLOYER'S DELIVERY TEAM
CONSTRUCTION NOISE MONITORING REPORT
PRINCIPAL CONTRACT AND M9J1A CONTRACT
(MARCH 2012)**

Revision Status

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FORTH REPLACEMENT CROSSING

**EMPLOYER'S DELIVERY TEAM
CONSTRUCTION NOISE MONITORING REPORT**

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1. INTRODUCTION

1.1 This report sets out the results of the construction noise monitoring undertaken on the Forth Replacement Crossing project.

1.2 The noise monitoring periods covered in this report are as follows:

- Principal Contract: March 2012 – refer to Section 2 of this report.
- M9 Junction 1a Contract: March 2012 – refer to Section 3 of this report.

2. PRINCIPAL CONTRACT NOISE MONITORING

NOISE MONITORING LOCATIONS

2.1 Continuous noise monitoring was carried out at the fixed monitor locations in Table 2.1 below. The main construction activities carried out adjacent to the monitor locations are also listed.

Monitoring Location	Monitoring Period	Main Construction Activities
Tigh-Na-Grian (M3)	March 2012	<ul style="list-style-type: none"> • Excavation at Beamer Rock • Dredging at South Shore • Sub-formation preparation works • Site clearance of north abutment
Port Edgar (M6)	March 2012	<ul style="list-style-type: none"> • Excavation at Beamer Rock • Dredging at South Shore • Site Clearance • Access Track
Butlaw Fisheries (M7)	March 2012	<ul style="list-style-type: none"> • Excavation at Beamer Rock • Dredging at South Shore
Inchgarvie Lodge (M10)	March 2012	<ul style="list-style-type: none"> • Excavation at Beamer Rock • Dredging at South Shore • Utility works • Trial holes • Access Track
Linn Mill (M11)	March 2012	<ul style="list-style-type: none"> • Utility works • Trial holes • Access Track
Clufflat Brae (M13)	March 2012	<ul style="list-style-type: none"> • Utility works • Trial holes • Access Track
Springfield (M14)	March 2012	<ul style="list-style-type: none"> • Construction of south compound • Access Tracks
Echline Field (M15)	March 2012	<ul style="list-style-type: none"> • Construction of south compound • Access tracks
Scotstoun (M16)	March 2012	<ul style="list-style-type: none"> • Access tracks • Containment pond and bund • LMA fencing • Site Clearance
Dundas Home Farm (M17)	March 2012	<ul style="list-style-type: none"> • Access tracks • Containment pond and bund • LMA fencing • Site Clearance
Newton	March	<ul style="list-style-type: none"> • No works within 1.75 km

Table 2.1 Principal Contract – Long Term Monitoring Locations

NOISE MONITORING RESULTS

- 2.2 Monitoring results from the Principal contract are contained in Appendix A of this report. The results are presented in a report containing noise charts using the template contained in the Construction Noise Monitoring Information Note which is available on the project website at http://www.transportscotland.gov.uk/files/documents/projects/forth-replacement/FRC_Construction_Noise_Monitoring_Information_Note_2_.pdf.
- 2.3 The results of the construction noise monitoring provided in the Principal Contract reports indicate that all construction activities were carried out in accordance with the thresholds set out in the project Code of Construction Practice.
- 2.4 Some exceedences of the maximum noise level thresholds occurred, although the exceedences are not considered to be due to the construction works being carried out. All monthly average total construction noise levels were within the relevant thresholds, with the exception of Butlaw Fisheries and Linn Mill during the night time periods and Scotstoun during the daytime period, however these exceedences are not considered to be due to Construction works.
- 2.5 Formal exceedance reports were prepared by the contractor for March 2012 and the investigations identified that the exceedences were not due to construction related factors. A large quantity of non-construction related exceedance reports were generated in March, and as such it was considered inappropriate to include them in this report. However, the exceedance reports are available on request from the FRC Team, contactable via email at enquiries@forthreplacementcrossing.info. A summary of the information included in the exceedance reports is provided in Table 2.2 below.

Monitoring Location	Contractor's Exceedance Report Reference	Exceedance
Butlaw Fisheries (M7)	NVIRs B.87 – B.130	During March the maximum noise threshold was exceeded on 44 occasions (daytime, 11; evening, 3; night time, 30). No exceedences were due to construction related activities. The exceedences were attributed to a range of factors, including strong winds, water on the shore (particularly during high tide), low flying jets, fireworks, vehicles and birds (particularly

Monitoring Location	Contractor's Exceedance Report Reference	Exceedance
		during the early hours of the morning).
Clufflat Brae (M13)	NVIRs C.77 – C.120	During March the maximum noise threshold was exceeded on 42 occasions (daytime, 10; evening, 9; night time, 23). These exceedances were not due to construction activities. A large number of the exceedances were found to be due to birds and strong winds. Other reasons found were low flying jets, animals (cats), fireworks and children playing in nearby gardens during the period of good weather.
Inchgarvie Lodge (M10)	NVIRs I.79 – I.117	During March the maximum noise threshold was exceeded on 39 occasions (daytime, 10; evening, 6; night time, 23). The exceedances were not attributable to construction. Investigations found a range of non-construction factors to be the cause of the exceedances, including adverse weather conditions, birds, device maintenance, low flying jets and fireworks.
Linn Mill (M11)	NVIRs L.64 – L.110	During March the maximum noise threshold was exceeded on 47 occasions (daytime, 8; evening, 9; night time, 30). These exceedances were not attributable to construction. Exceedances were largely due to adverse weather conditions (particularly strong winds) and birds. Other reasons identified include fireworks, low flying jets and the use of tools at nearby properties.
Tigh-Na-Grian (M3)	NVIRs T.71 – T.105	During March the maximum noise threshold was exceeded on 35 occasions (daytime, 10; evening, 1; night time, 24). Exceedances were not related to construction and were attributed to non-construction noise sources including strong winds, birds and low flying jets.
Dundas Home Farm (M17)	NVIRs D.27 – D.35	During March the maximum noise threshold was exceeded on 9 occasions. Exceedances were not attributable to construction works. Exceedances were the result of strong winds, vehicle noises (car horns), low flying jets and the use of lawnmowers near the monitor.
Echline Field (M15)	NVIRs E.43 – E.60	During March the maximum noise threshold was exceeded on 18 occasions. Exceedances were not due to construction activities and were attributed to vehicles passing by on the adjacent road.

Monitoring Location	Contractor's Exceedance Report Reference	Exceedance
Springfield (M14)	NVIRs S.12 – S.20	During March the maximum noise threshold was exceeded on 9 occasions. Exceedances were not due to construction activities. Exceedances were attributed to strong winds, low flying jets and the use of tools in nearby properties
Scotstoun (M16)	NVIR's Sc.1 – Sc.18	During March the maximum noise threshold was exceeded on 18 occasions. Exceedances were not due to construction activities and were attributed to vehicles passing by on the adjacent road.

Table 2.2 Principal Contract – Summary of Noise Threshold Exceedances

3. M9 J1A CONTRACT NOISE MONITORING

NOISE MONITORING LOCATIONS

- 3.1 Continuous noise monitoring was carried out at the fixed monitor locations in Table 3.1 below. The main construction activities carried out adjacent to the monitor locations are also listed.

Monitoring Location	Monitoring Period	Main Construction Activities
93/95 King Edwards Way (CNV02)	March 2012	<ul style="list-style-type: none">• Installation of Niddry Burn culvert• Excavation of attenuation pond
15-17 Buie Rigg (CNV07)	March 2012	<ul style="list-style-type: none">• Traffic management on M9 Spur• M9J1a eastbound diverge earthworks• Piling at M9 bridge
8 Kirklands Park Grove (CNV16)	March 2012	<ul style="list-style-type: none">• Traffic management on M9 Spur• Removal of wingwalls on Newmains Bridge• Erection of Gantries 13,14,15,16• Construction of service areas to Gantries• Earthworks widening at M9 Spur

Table 3.1 M9 J1a Contract – Long Term Monitoring Locations

NOISE MONITORING RESULTS

- 3.2 Monitoring results from the M9 Junction 1a contract are contained in Appendix B of this report. The results are presented in charts using the template contained in the Construction Noise Monitoring Information Note which is available on the project website at http://www.transportscotland.gov.uk/files/documents/projects/forth-replacement/FRC_Construction_Noise_Monitoring_Information_Note_2_.pdf.
- 3.3 The results of the construction noise monitoring provided in the M9 Junction 1a reports indicate that all construction activities were carried out in accordance with the thresholds set out in the project Code of Construction Practice.
- 3.4 Some exceedences of the maximum noise level thresholds occurred, although the exceedences are not considered to be due to the construction works being carried

out. Formal exceedance reports were prepared by the contractor for March 2012 and the investigations identified that the exceedances were not due to construction related factors. The exceedance reports are available on request from the FRC Team, contactable via email at enquiries@forthreplacementcrossing.info. Summary information regarding the exceedances of the maximum noise level thresholds is provided In Table 3.2 below.

Monitoring Location	Contractor's Exceedance Report Reference	Exceedance
93/95 King Edwards Way (CNV02)	NERs 26 - 40	During March the maximum noise threshold was exceeded on 15 occasions (daytime, 9; evening, 3; night time, 3). However, no exceedances were attributed to construction related activities. The exceedances were attributed to traffic noise on the existing road network.
15-17 Buie Rigg (CNV07)	NERs 41 - 45	During March the maximum noise threshold was exceeded on 5 occasions (daytime, 2; night time, 3). However, no construction works were being carried out within 200m of the receptor when the exceedances occurred, with the exception of emergency repair works carried out by the trunk road operator. It is therefore considered unlikely that construction activities resulted in the exceedances recorded.
8 Kirklands Park Grove (CNV16)	NERs 46 - 48	During March the maximum noise threshold was exceeded on 3 occasions (night time, 3). However, no construction works were being carried out in the vicinity of the receptor when the exceedances occurred, with the exception of emergency repair works carried out by the trunk road operator. It is therefore considered unlikely that construction activities resulted in the exceedances recorded.

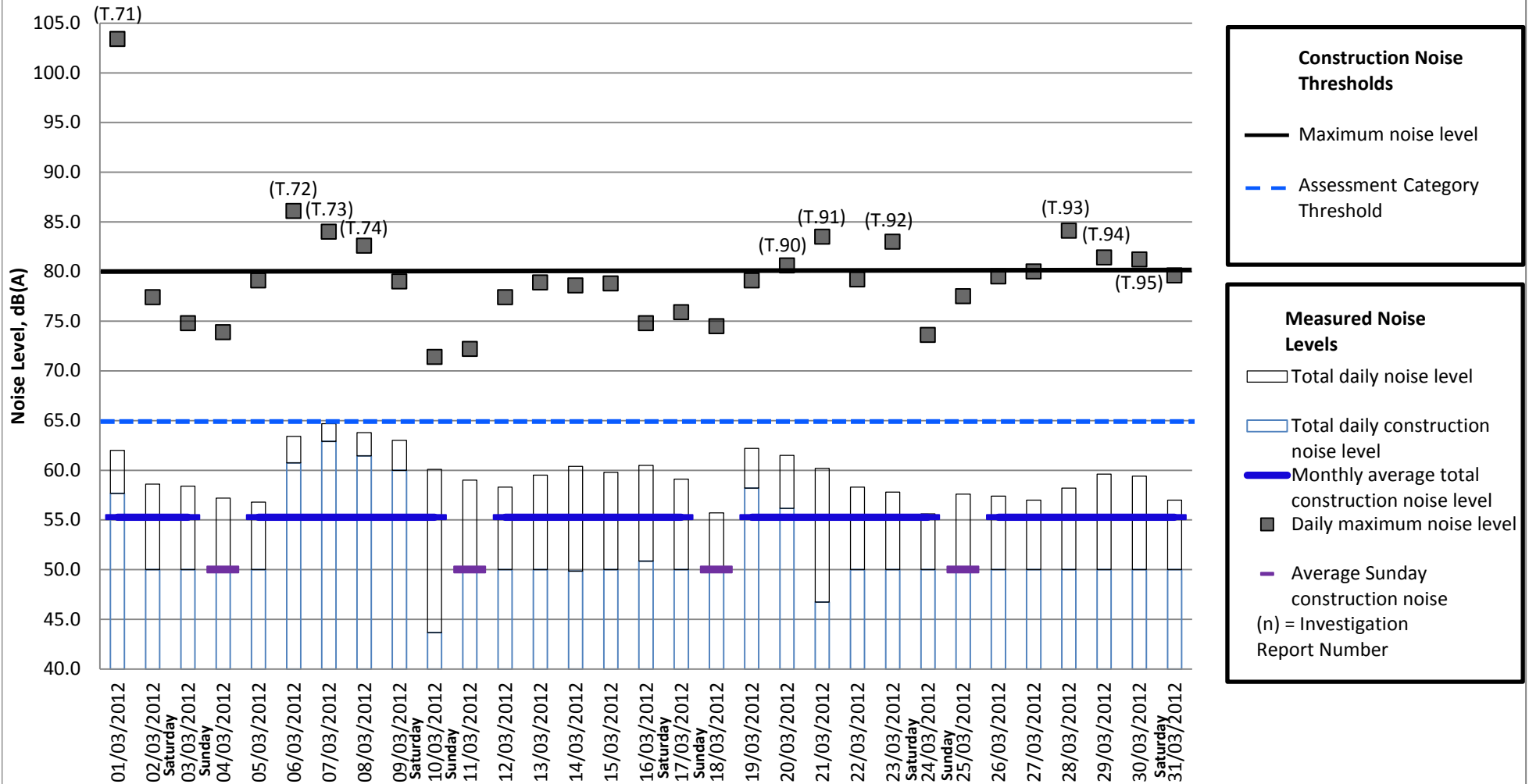
Table 3.2 M9 J1a Contract – Summary of Noise Threshold Exceedances

APPENDIX A -

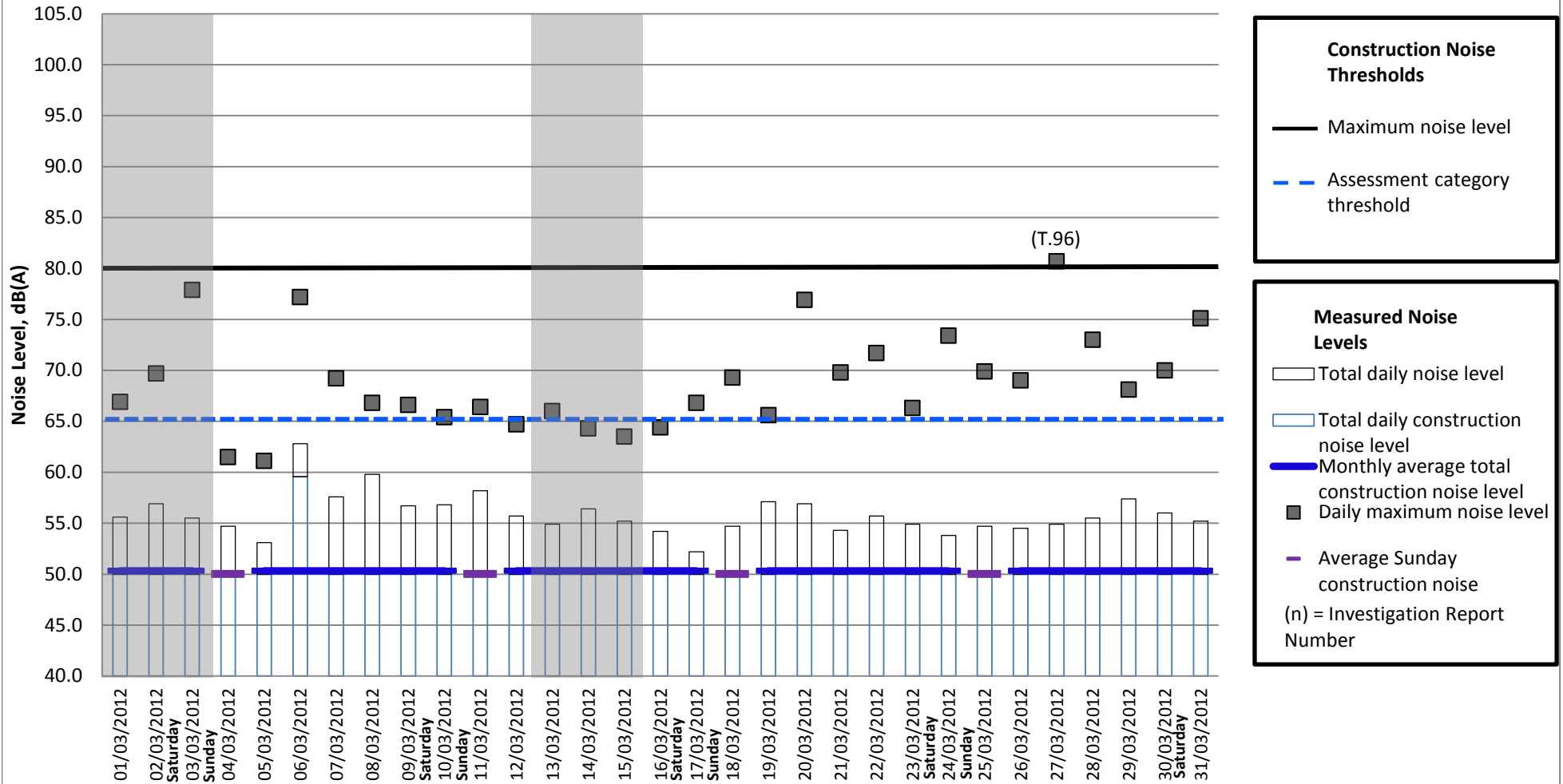
**PRINCIPAL CONTRACT - CONSTRUCTION
NOISE MONITORING REPORTS**

Measured Daytime Noise Levels at Tigh-Na-Grian

Measurement period: March 2012



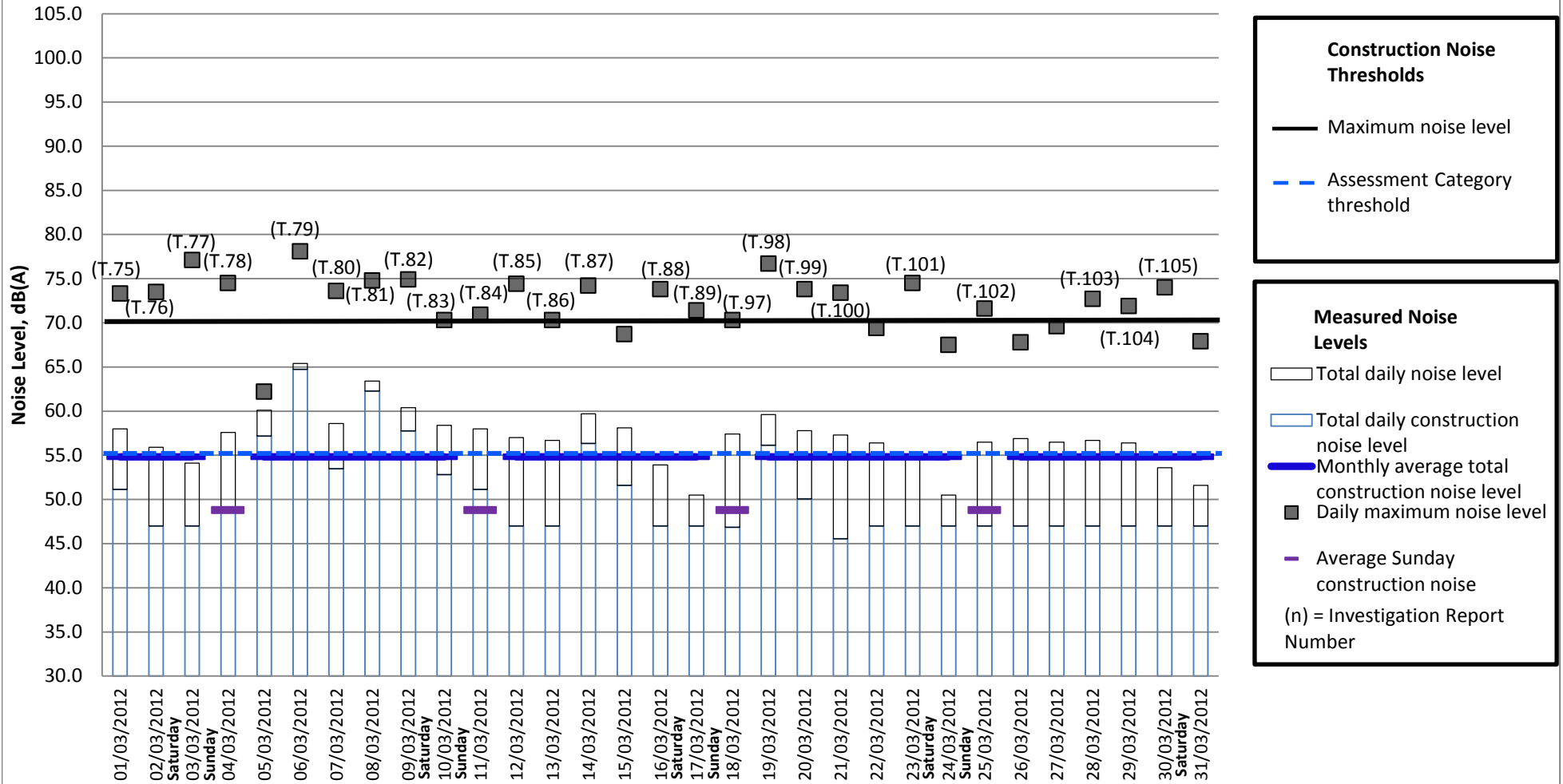
Measured Evening Noise Levels at Tigh-Na-Grian Measurement period: March 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works have been undertaken during the period 01/03/12 to 03/03/12 and 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

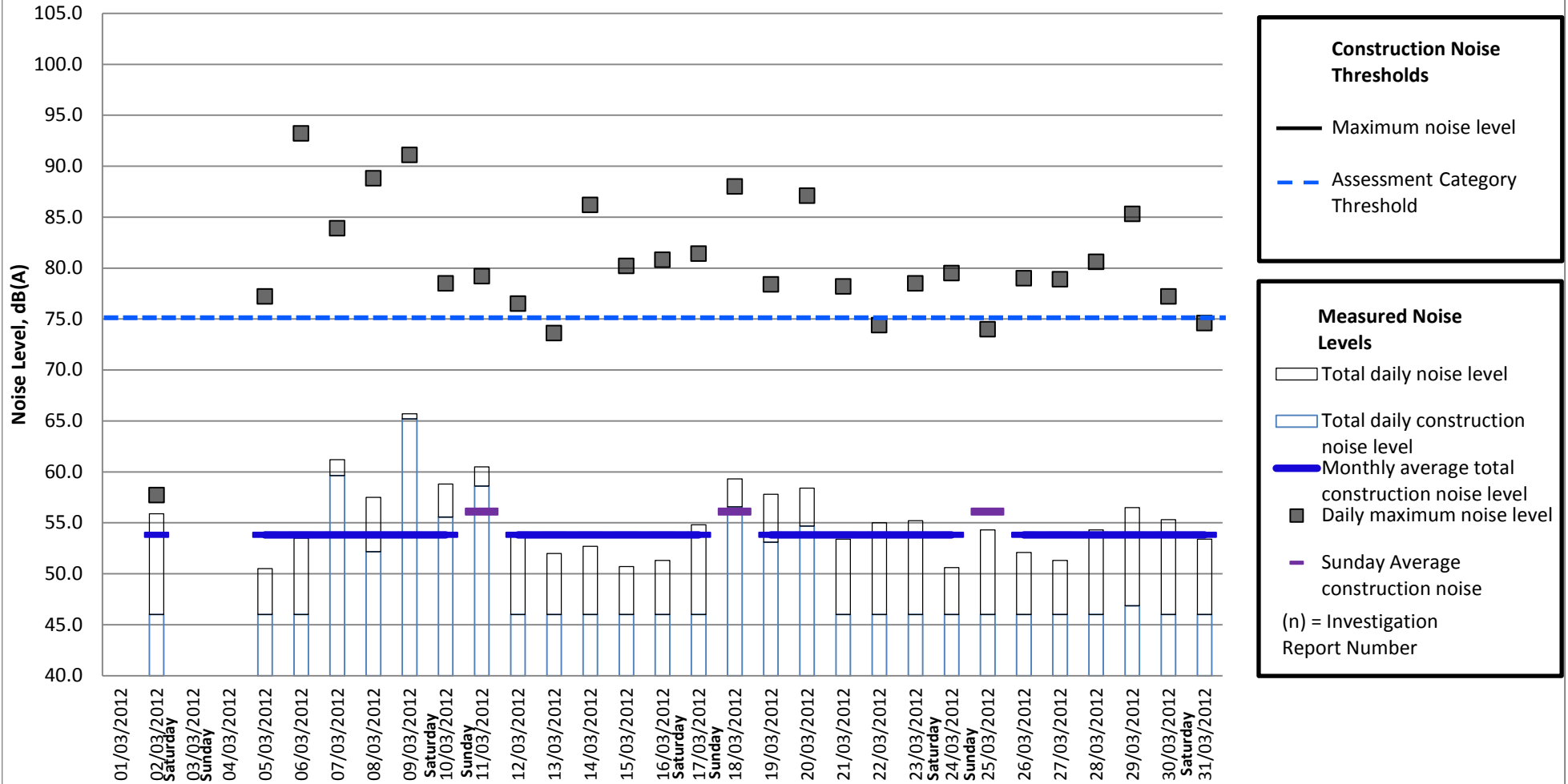
Measured Night-time Noise Levels at Tigh-Na-Grian

Measurement period: March 2012



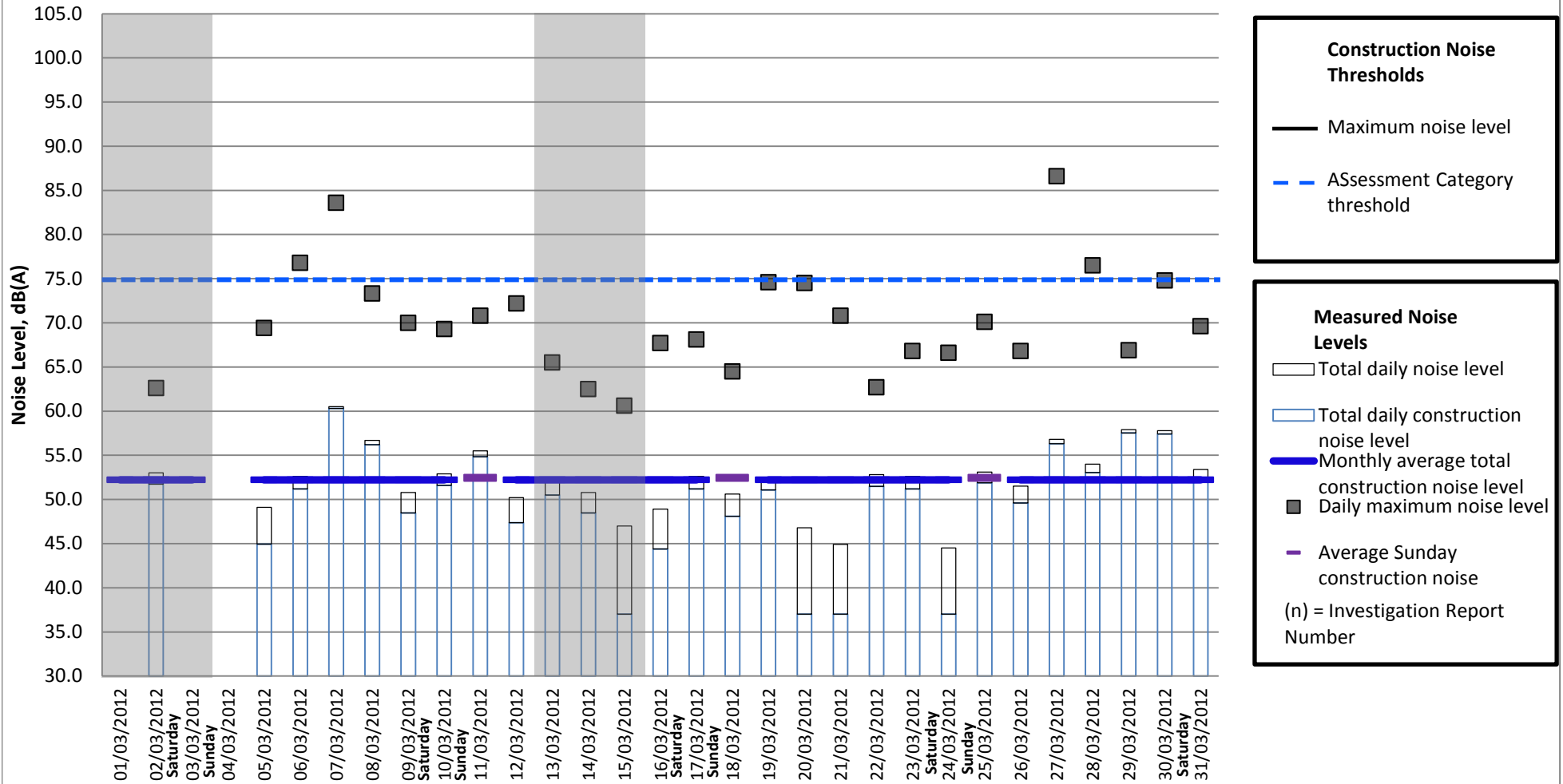
Note: Dates affected by adverse weather include 06/03/12, 07/03/12, 08/03/12, 09/03/12 and 10/03/12

Measured Daytime Noise Levels at Port Edgar Measurement period: March 2012



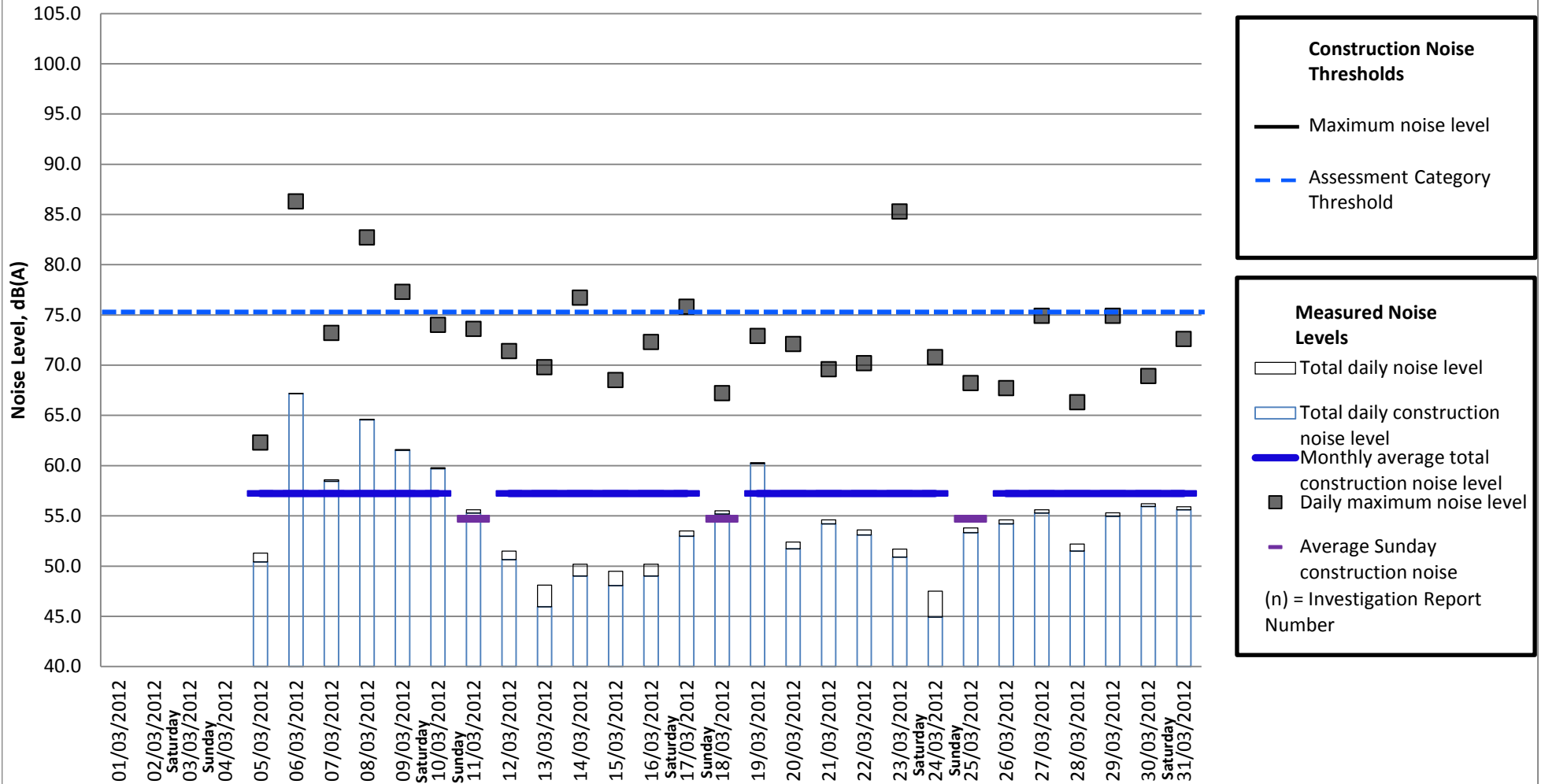
Note: Daytime noise data is missing for 01/03/12, 03/03/12 and 04/03/12 due to an error with the electricity supply to the device.

Measured Evening Noise Levels at Port Edgar Measurement period: March 2012



Note: Evening noise data is missing for 01/03/12, 03/03/12 and 04/03/12 due to an error with the electricity supply to the device. The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works were conducted during the period 01/03/12 to 03/02/12 or 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

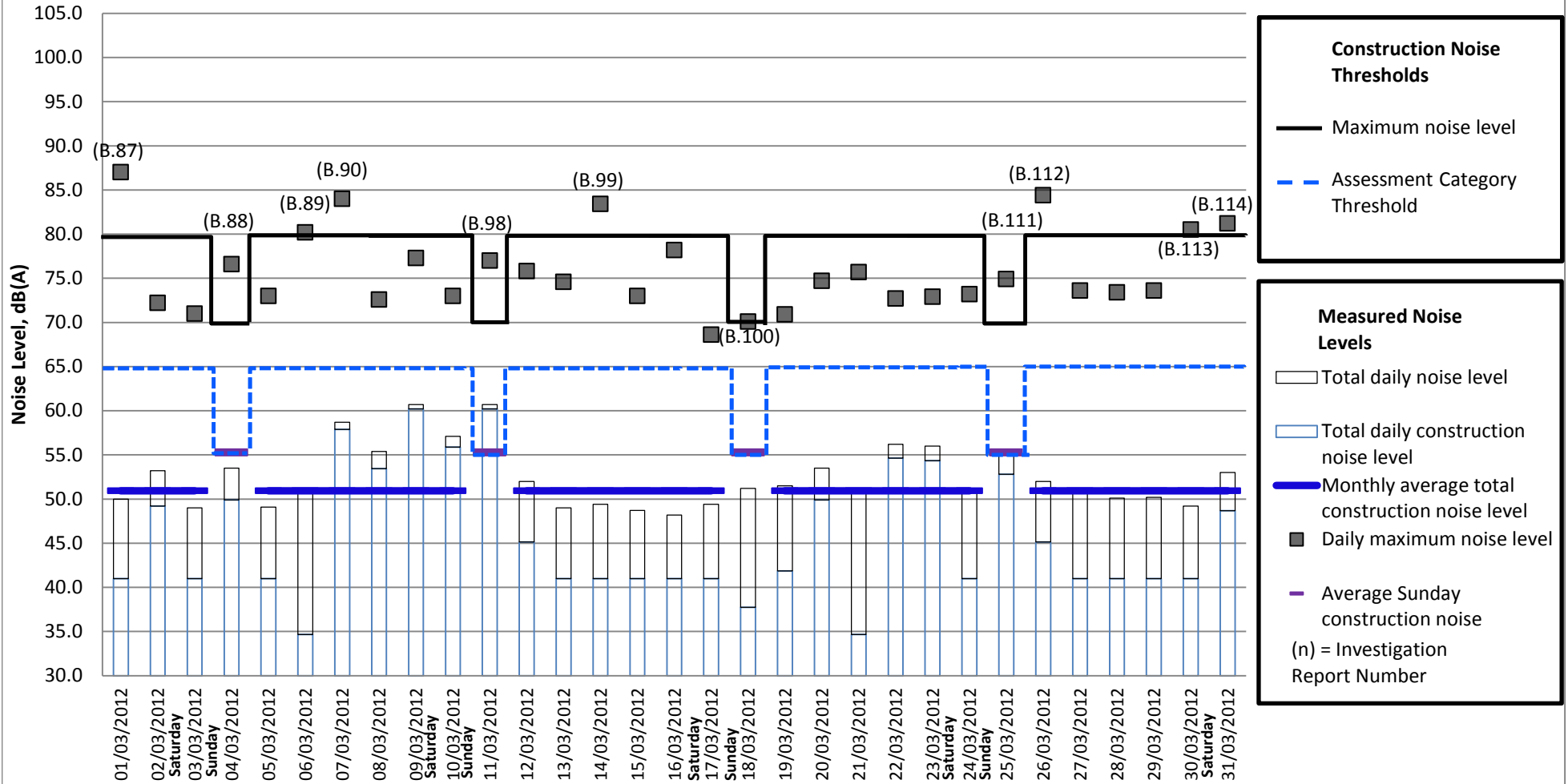
Measured Night-time Noise Levels at Port Edgar Measurement period: March 2012



Note: Night time noise data is missing for the period 01/03/12 to 05/03/12 due to an error with the electricity supply to the device. Dates affected by adverse weather include 06/03/12, 07/03/12, 08/03/12, 09/03/12 and 10/03/12

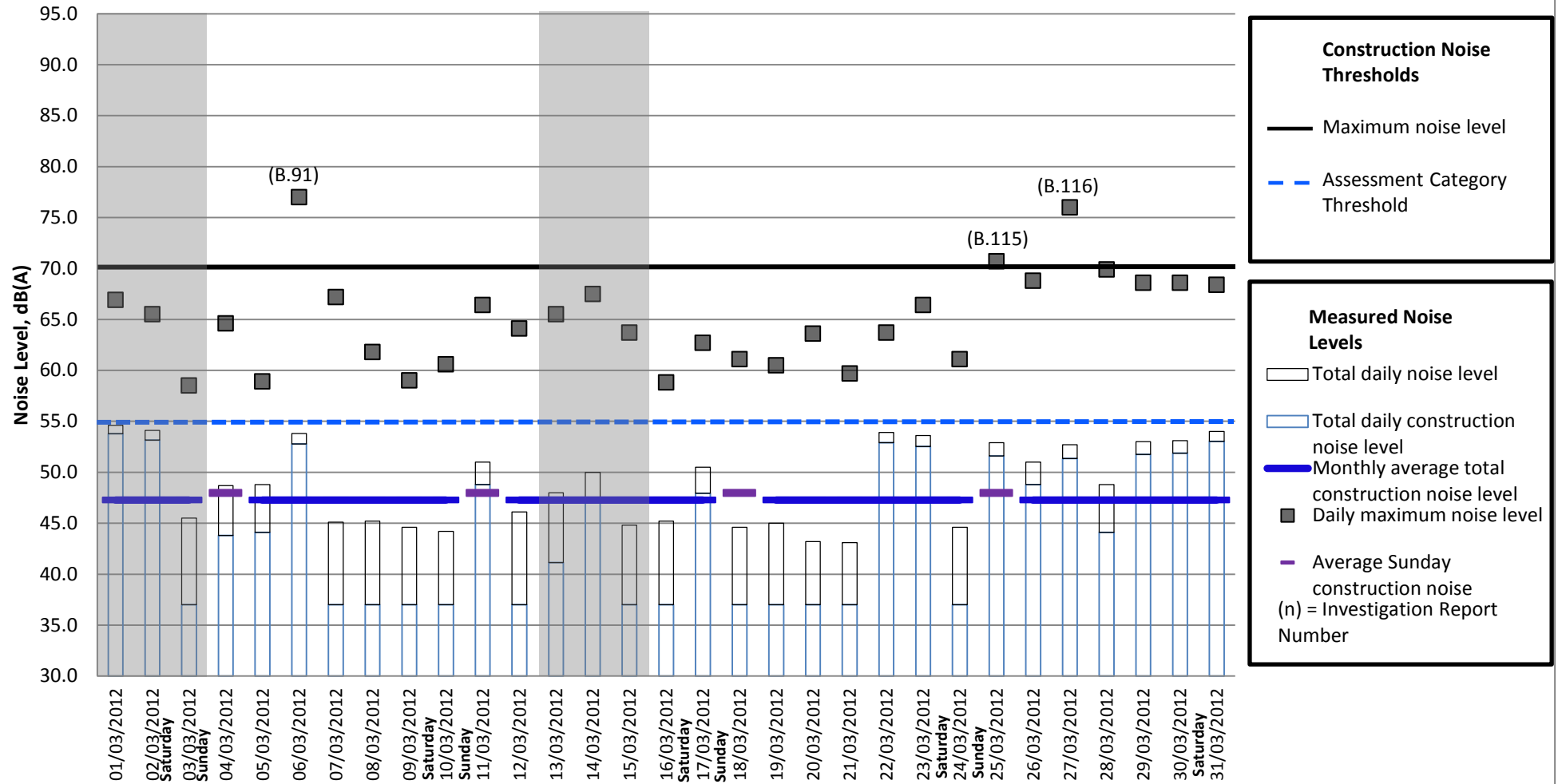
Measured Daytime Noise Levels at Butlaw Fisheries

Measurement period: March 2012



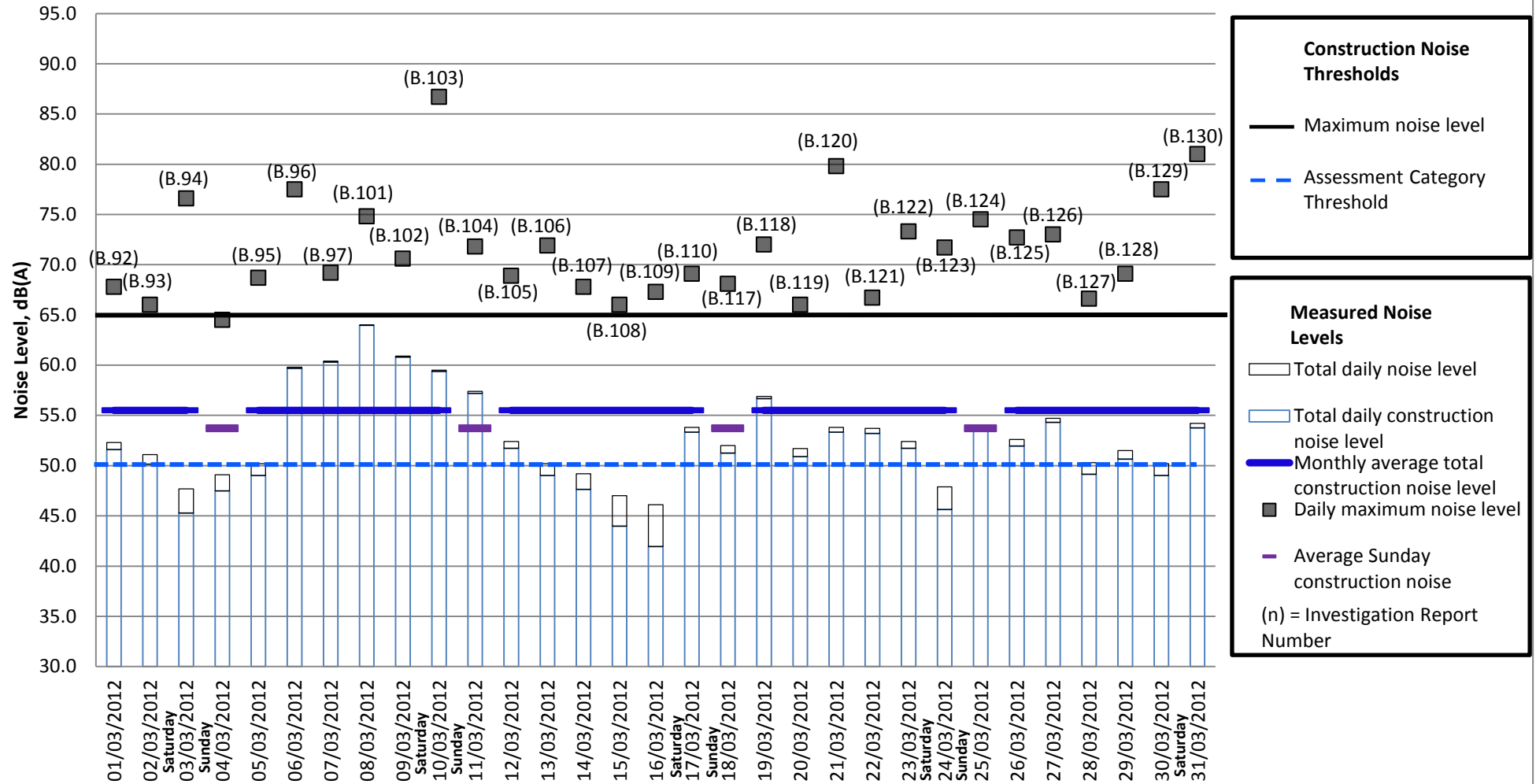
Measured Evening Noise Levels at Butlaw Fisheries

Measurement period: March 2012



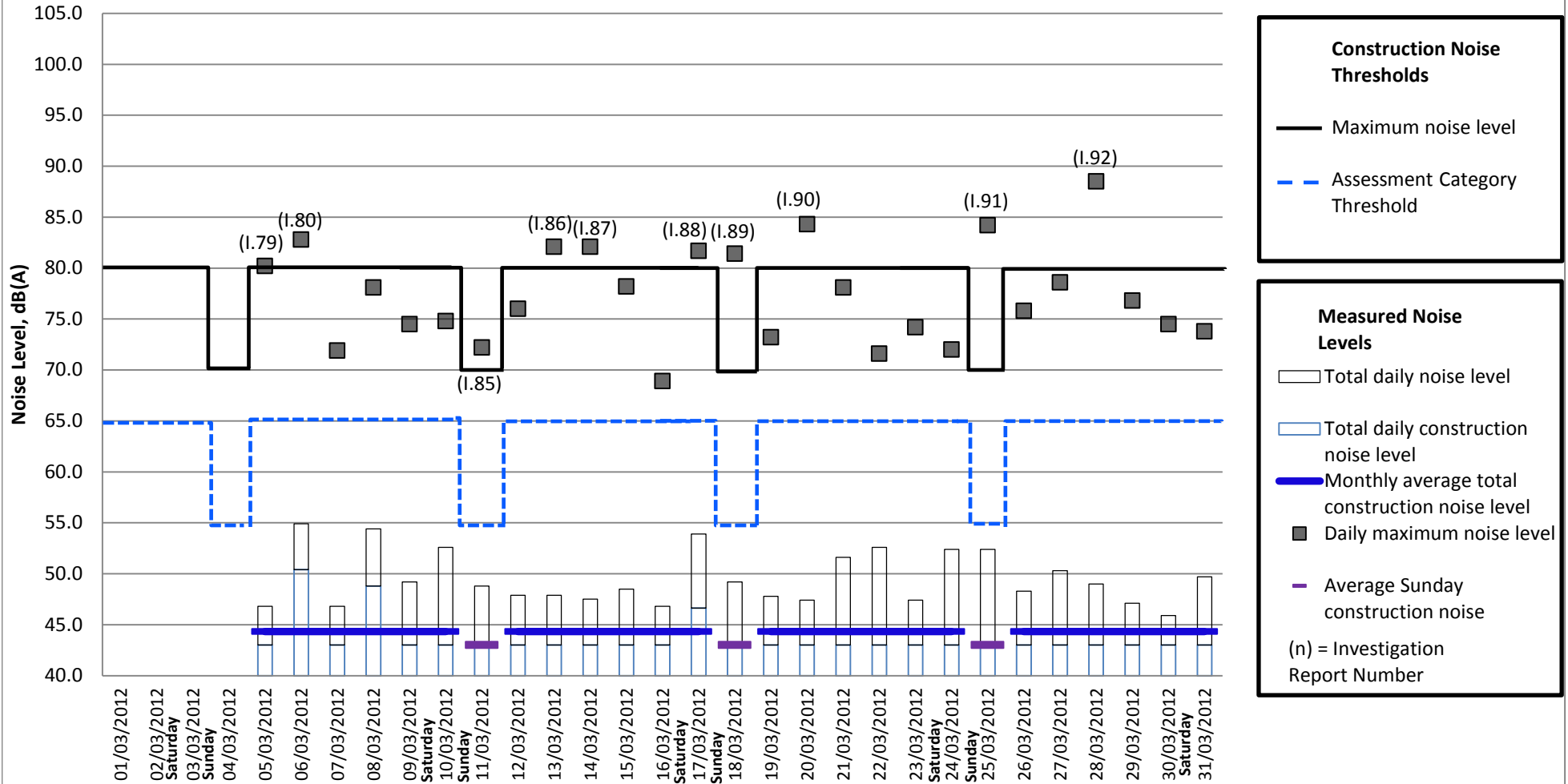
Note: The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works have been undertaken during the period 01/03/12 to 03/03/12 and 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

Measured Night time Noise Levels at Butlaw Fisheries Measurement period: March 2012



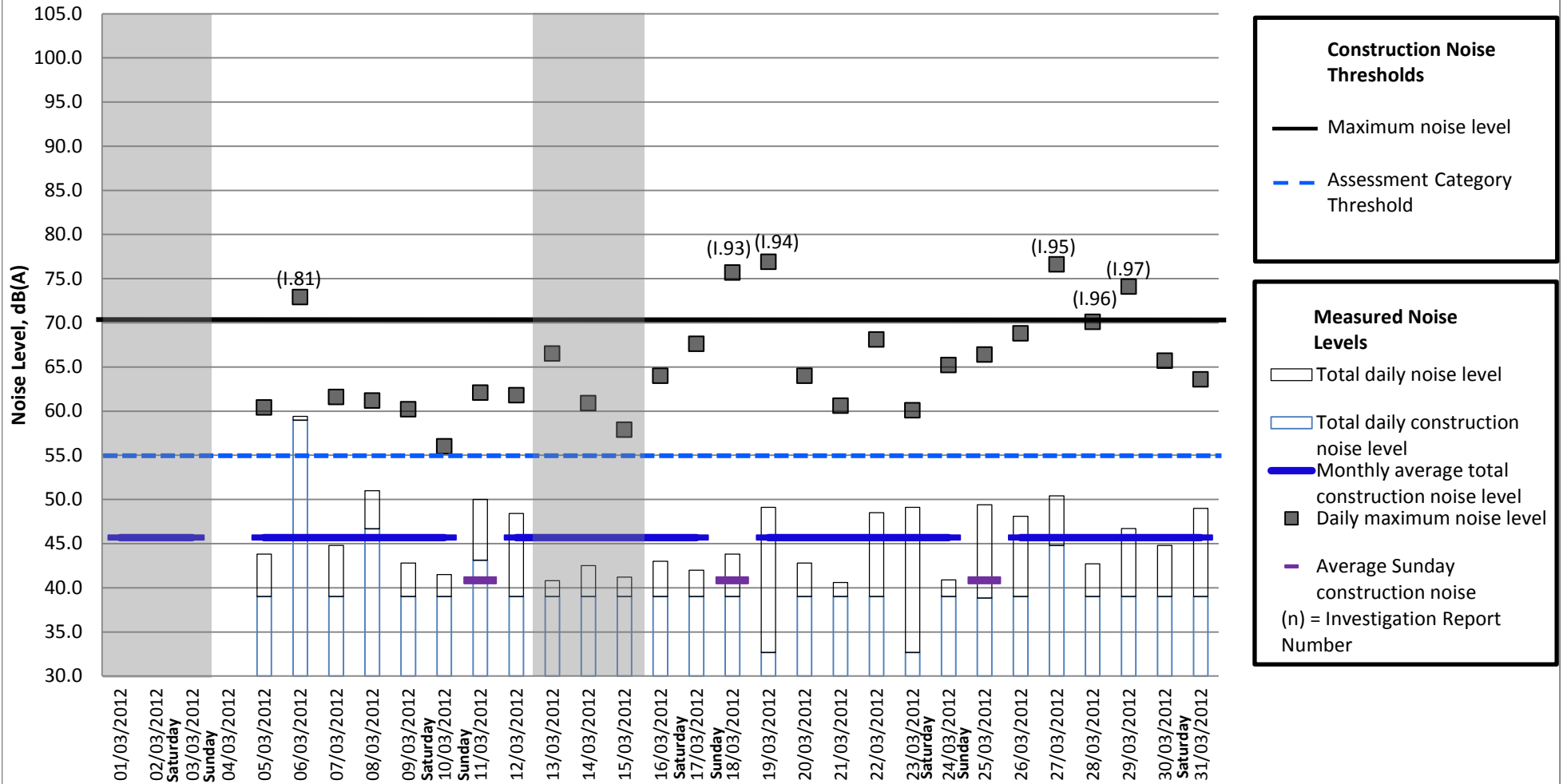
Note: Dates affected by adverse weather include 06/03/12, 07/03/12, 08/03/12, 09/03/12 and 10/03/12. In addition to strong winds, high tide on these dates had a significant impact on the noise data obtained at Butlaw Fisheries.

Measured Daytime Noise Levels at Inchgarvie Measurement period: March 2012



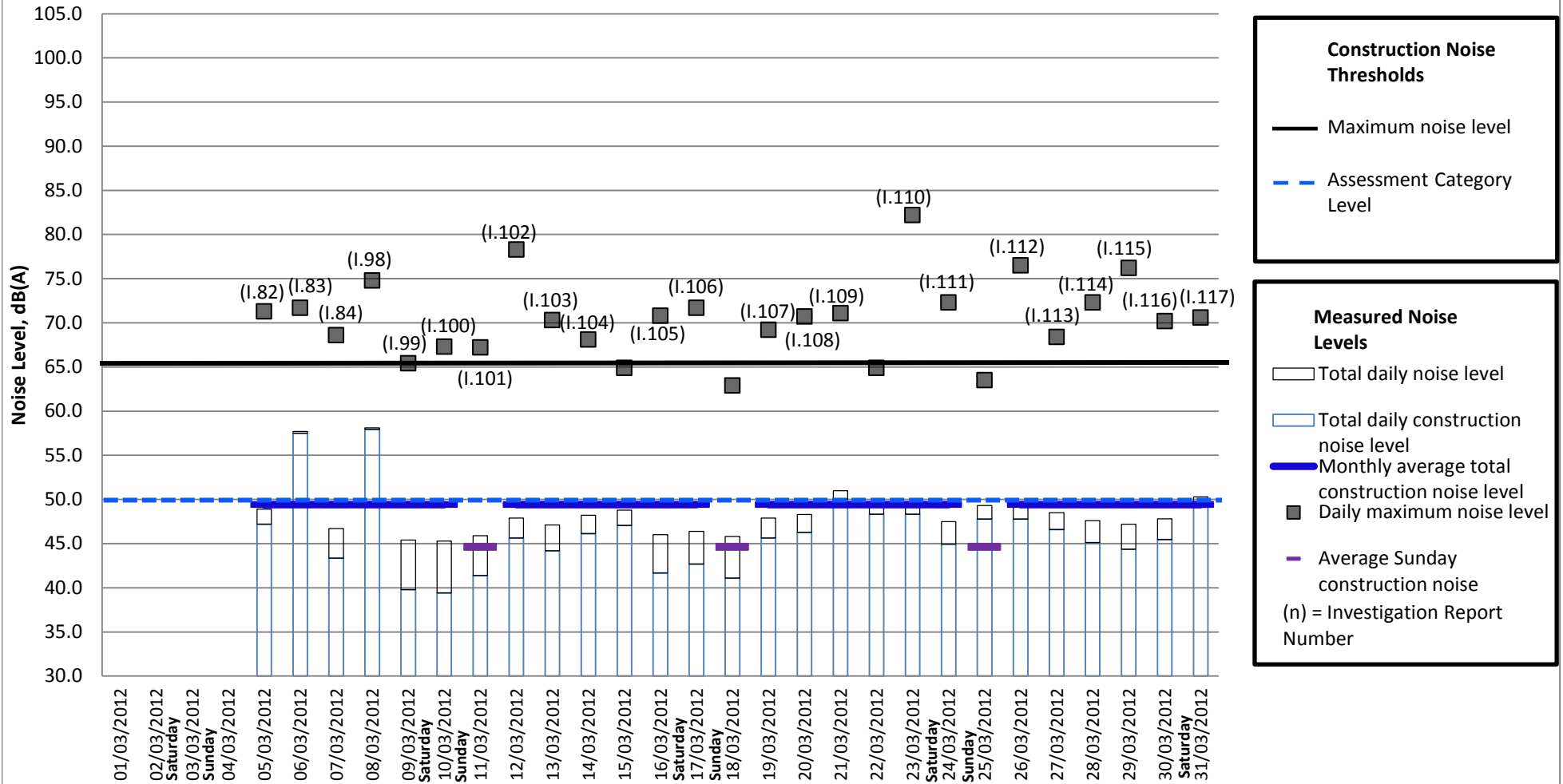
Note: Daytime noise data is missing for the period 01/03/12 to 04/03/12 due to device maintenance.

Measured Evening Noise Levels at Inchgarvie Measurement period: March 2012



Note: Evening noise data is missing for the period 01/03/12 to 04/03/12 due to device maintenance. The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works have been undertaken during the period 01/03/12 to 03/03/12 and 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

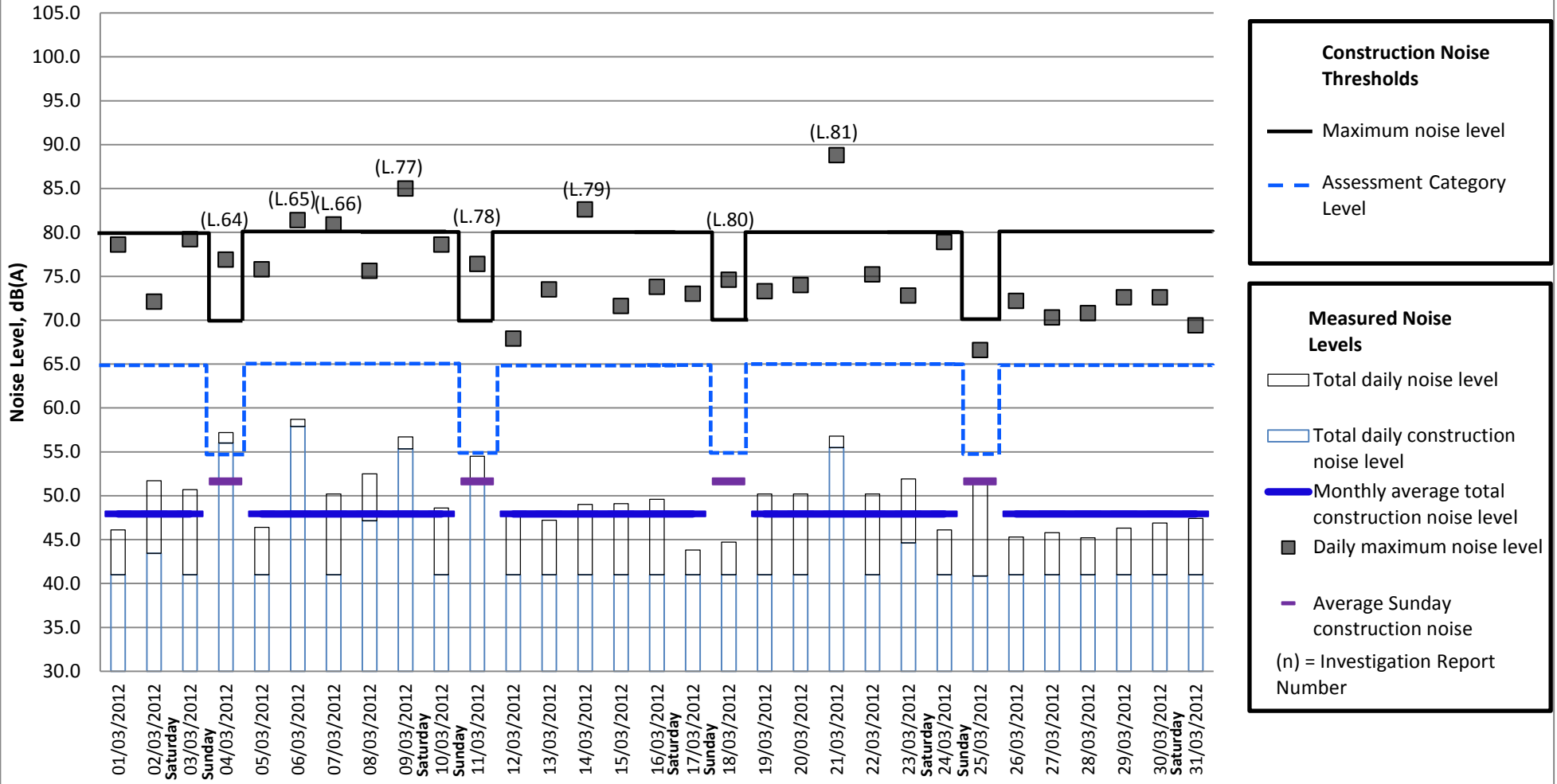
Measured Night-time Noise Levels at Inchgarvie Measurement period: March 2012



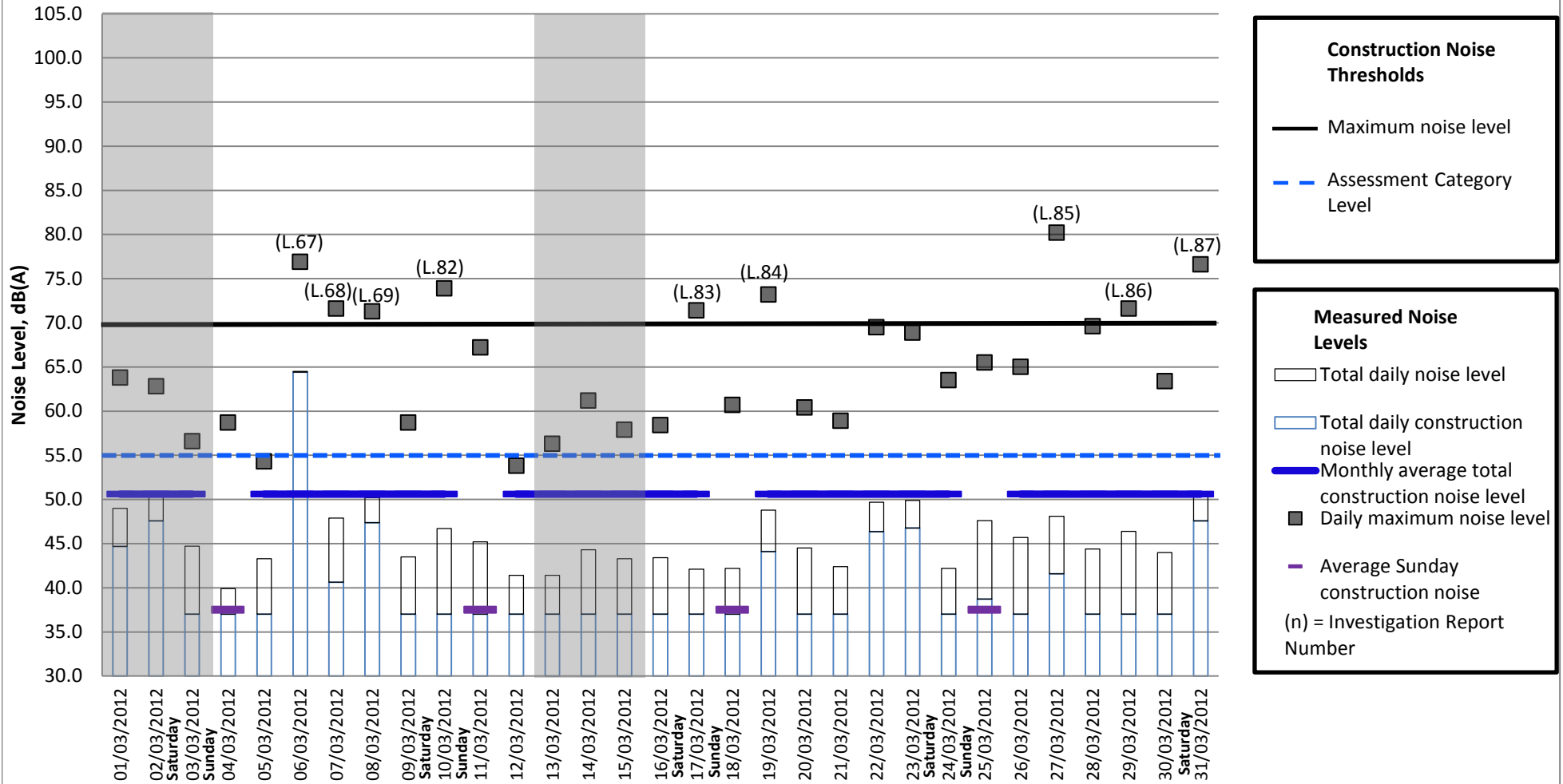
Note: Night time noise data is missing for the period 01/03/12 to 04/03/12 due to device maintenance. Dates affected by adverse weather include 06/03/12, 07/03/12, 08/03/12, 09/03/12 and 10/03/12

Measured Daytime Noise levels at Linn Mill

Measurement period: March 2012



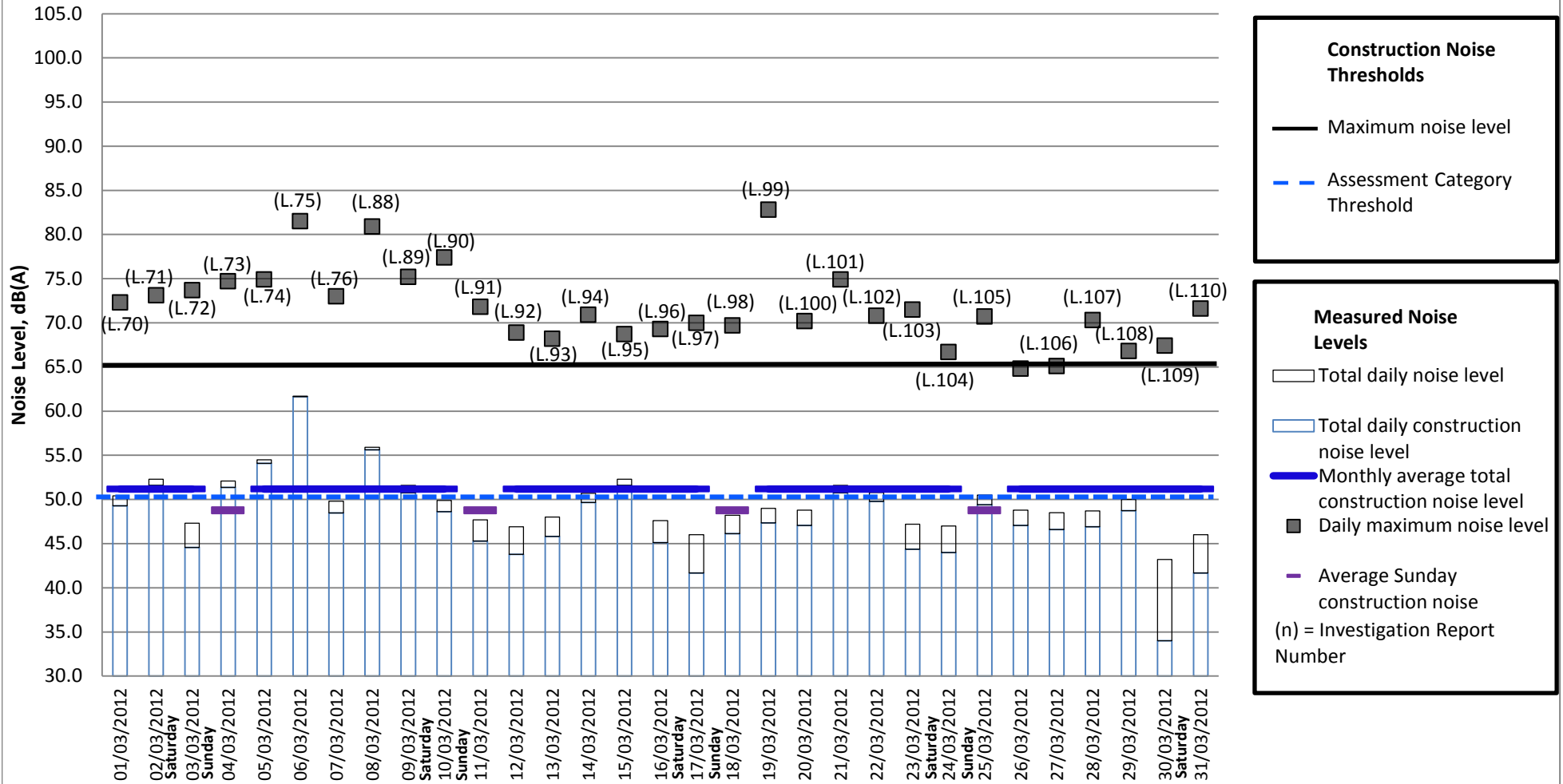
Measured Evening Noise Levels at Linn Mill Measurement period: March 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works were conducted during the period 01/03/12 to 03/02/12 and 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

Measured Night-time Noise Levels at Linn Mill

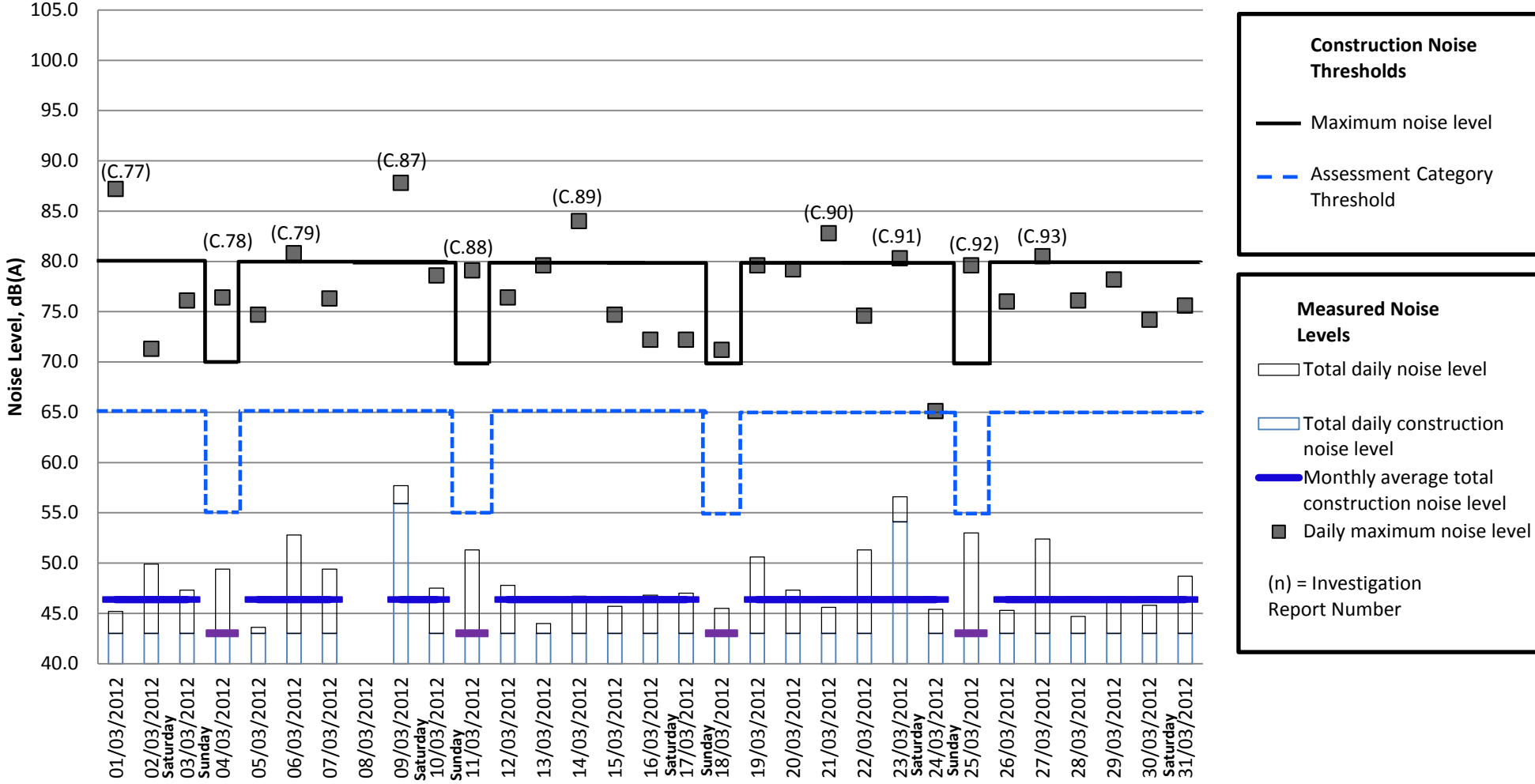
Measurement period: March 2012



Note: Dates affected by adverse weather include 06/03/12, 07/03/12, 08/03/12, 09/03/12 and 10/03/12

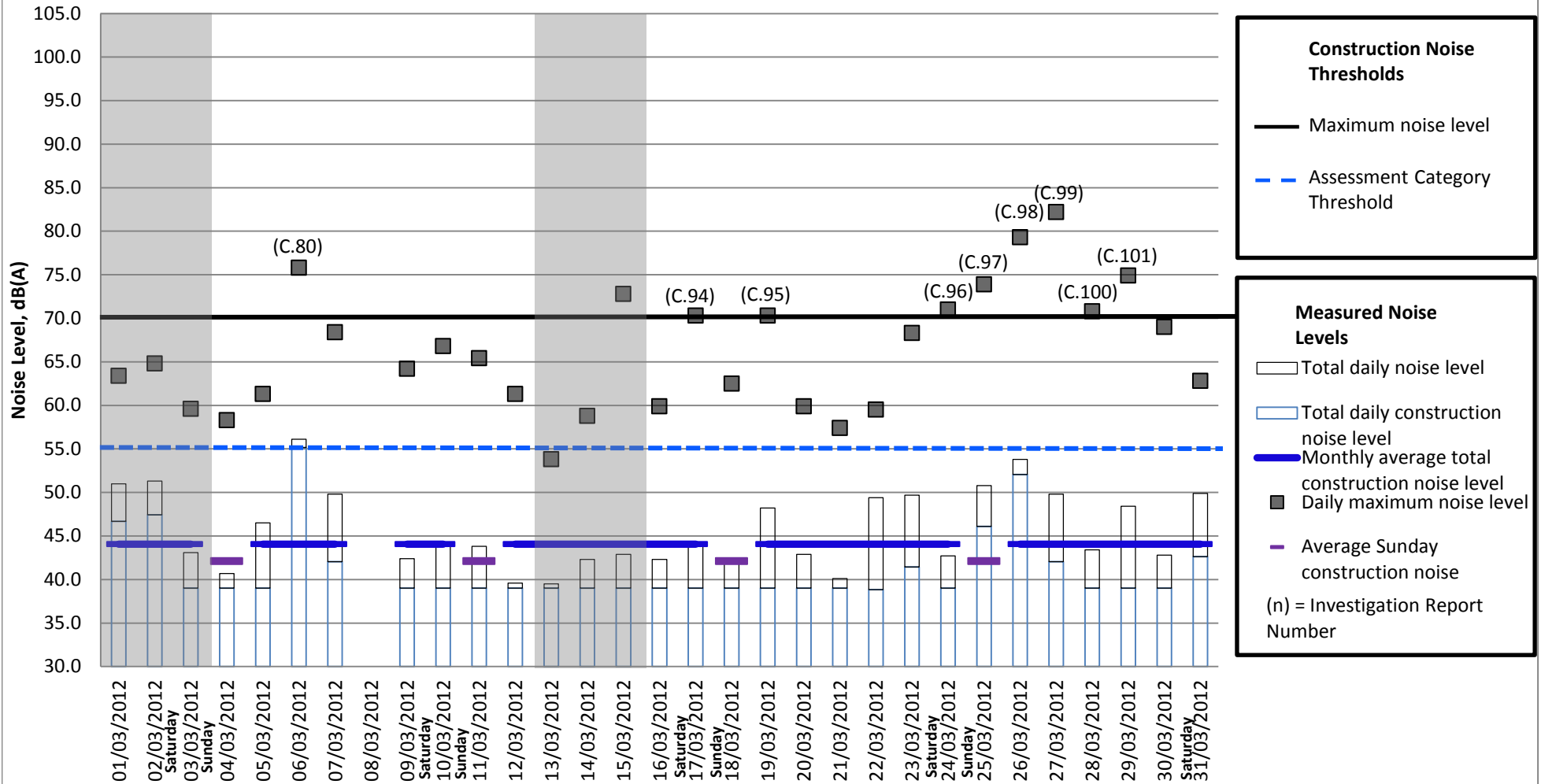
Measured Daytime Noise Levels at Clufflat Brae

Measurement period: March 2012



Note: Daytime noise data is missing for 08/03/12 due to device error.

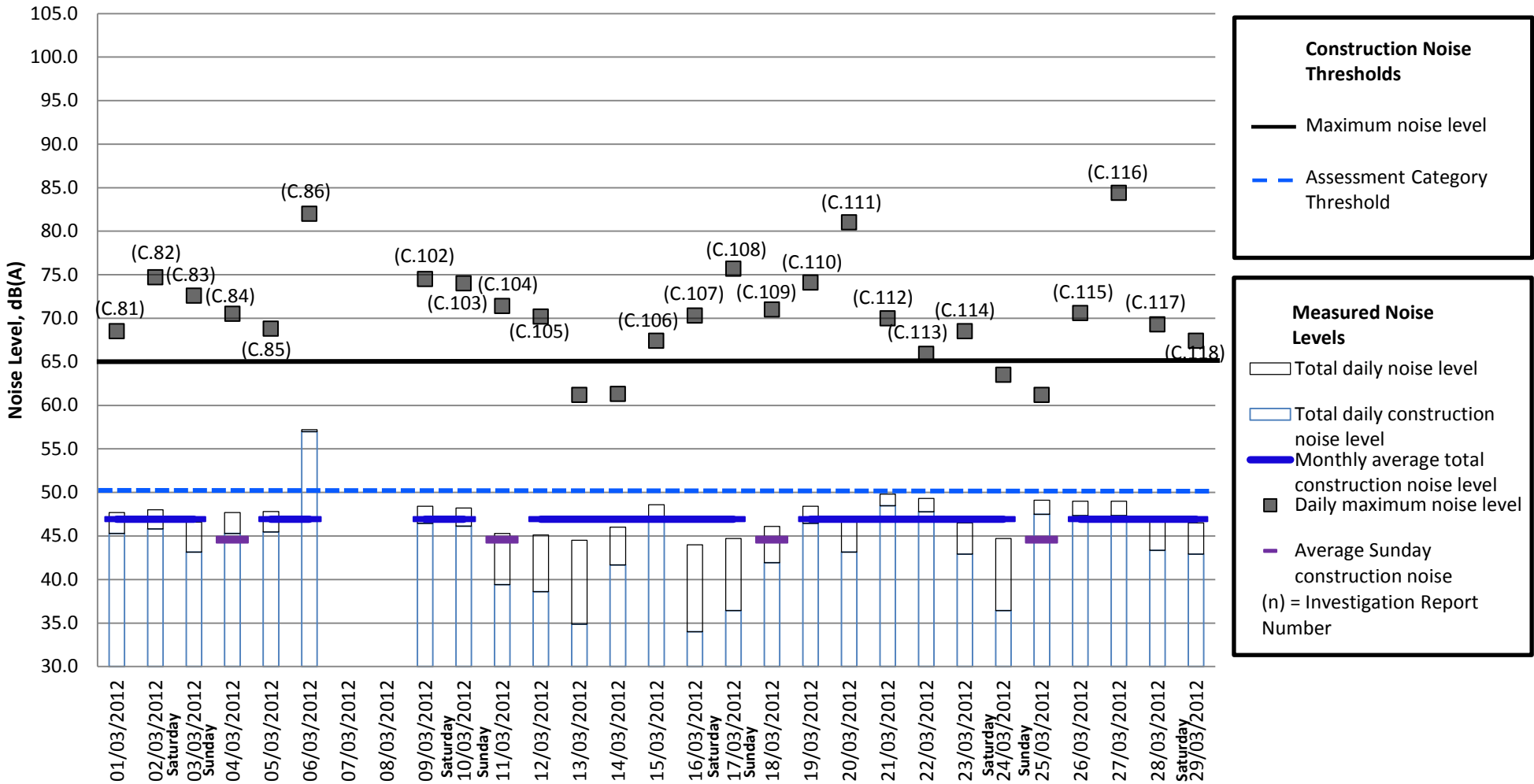
Measured Evening Noise Levels at Clufflat Brae Measurement period: March 2012



Note: Evening noise data is missing for 08/03/12 due to device error. The grey areas of the chart represent days on which no construction works have been conducted; no evening construction works have been undertaken during the period 01/03/12 to 03/03/12 and 13/03/12 to 15/03/12. Dates affected by adverse weather include 06/03/12.

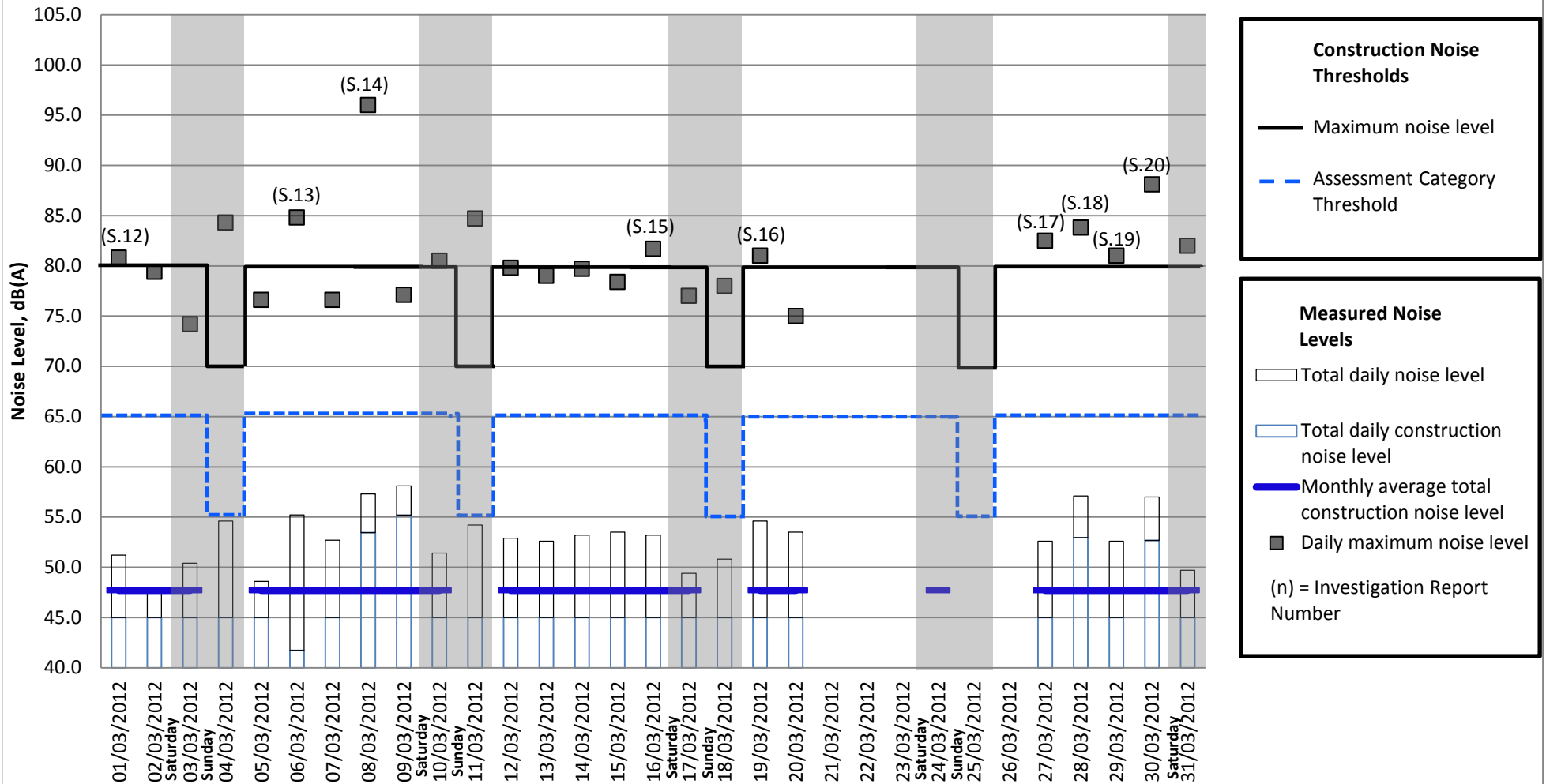
Measured Night-time Noise Levels at Clufflat Brae

Measurement period: March 2012



Note: Night time noise data is missing for 07/03/12 and 08/03/12 due to device error. Dates affected by adverse weather include 06/03/12, 09/03/12 and 10/03/12

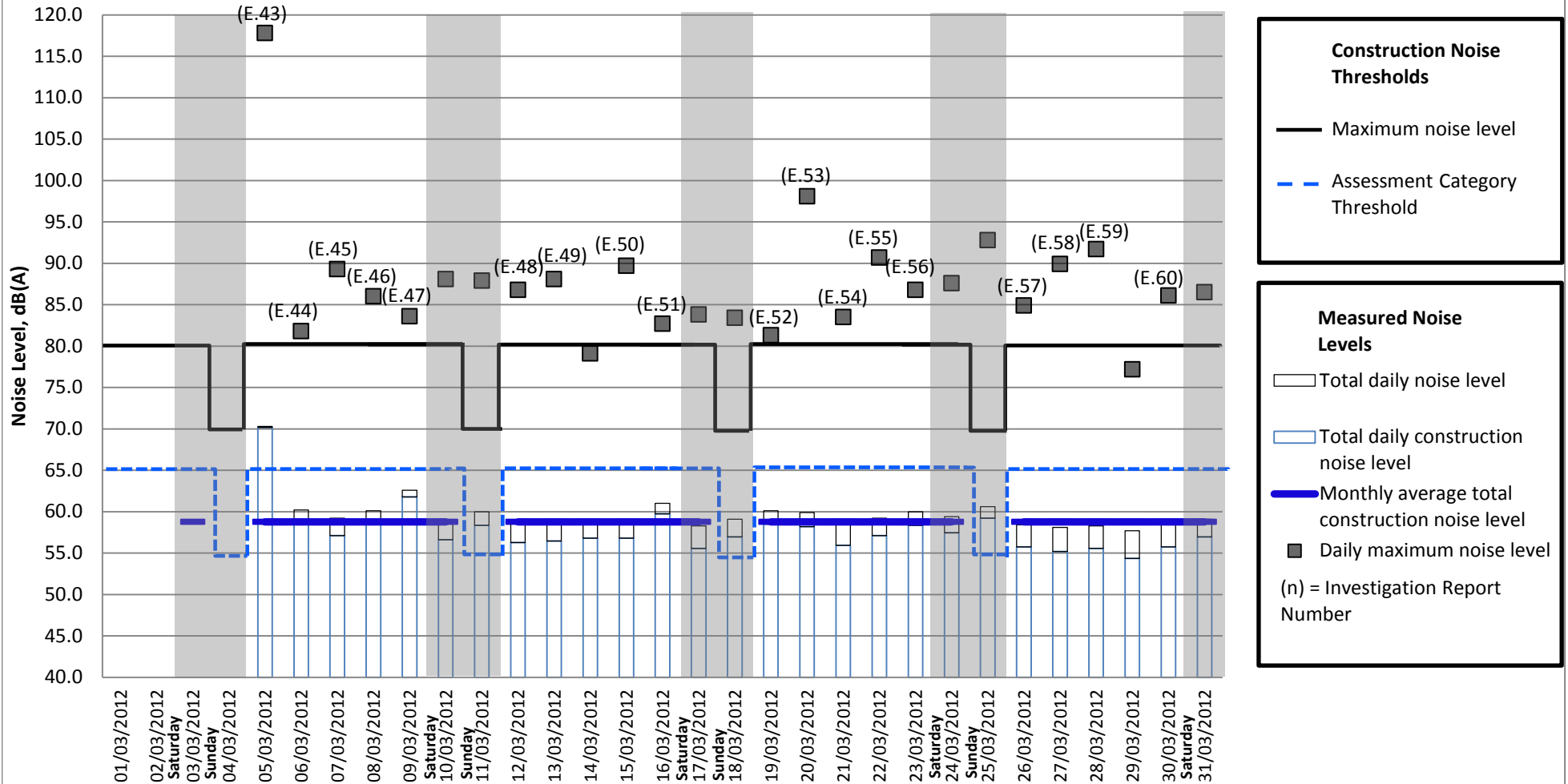
Measured Daytime Noise Levels at Springfield Measurement period: March 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location. Noise data is missing for the period 21/03/12 to 26/03/12 due to device error. The monthly average construction noise for Sunday has not been included as no Sunday works have been conducted at this location during March

Measured Daytime Noise Levels at Echline Field

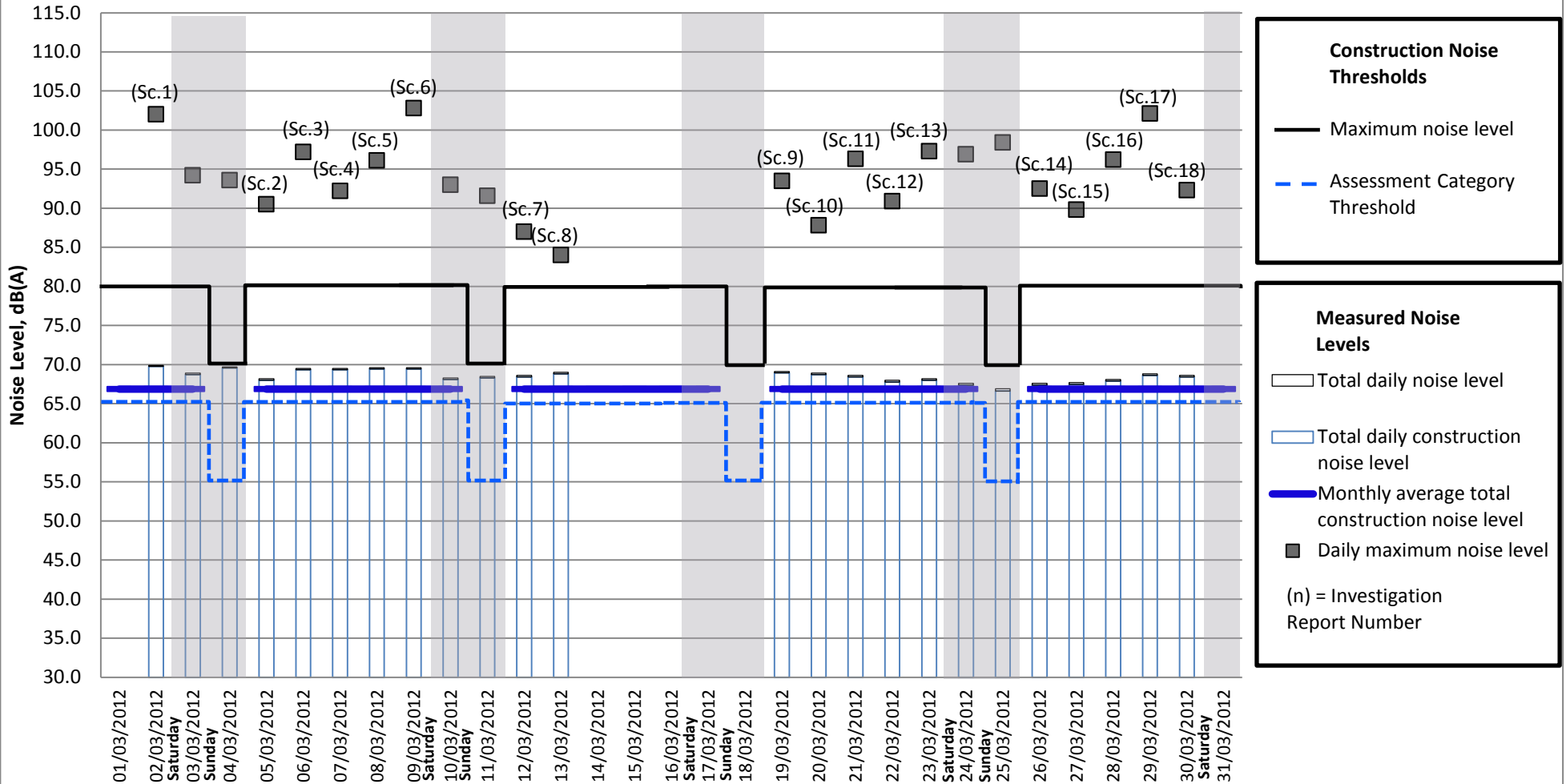
Measurement period: March 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location during March. Data is missing for the period 01/03/12 to 04/03/12 due to device maintenance; the device was re-installed on 05/03/12, causing the very high noise level experienced. Monthly average construction noise has not been included for Sundays as no works have been conducted at this location.

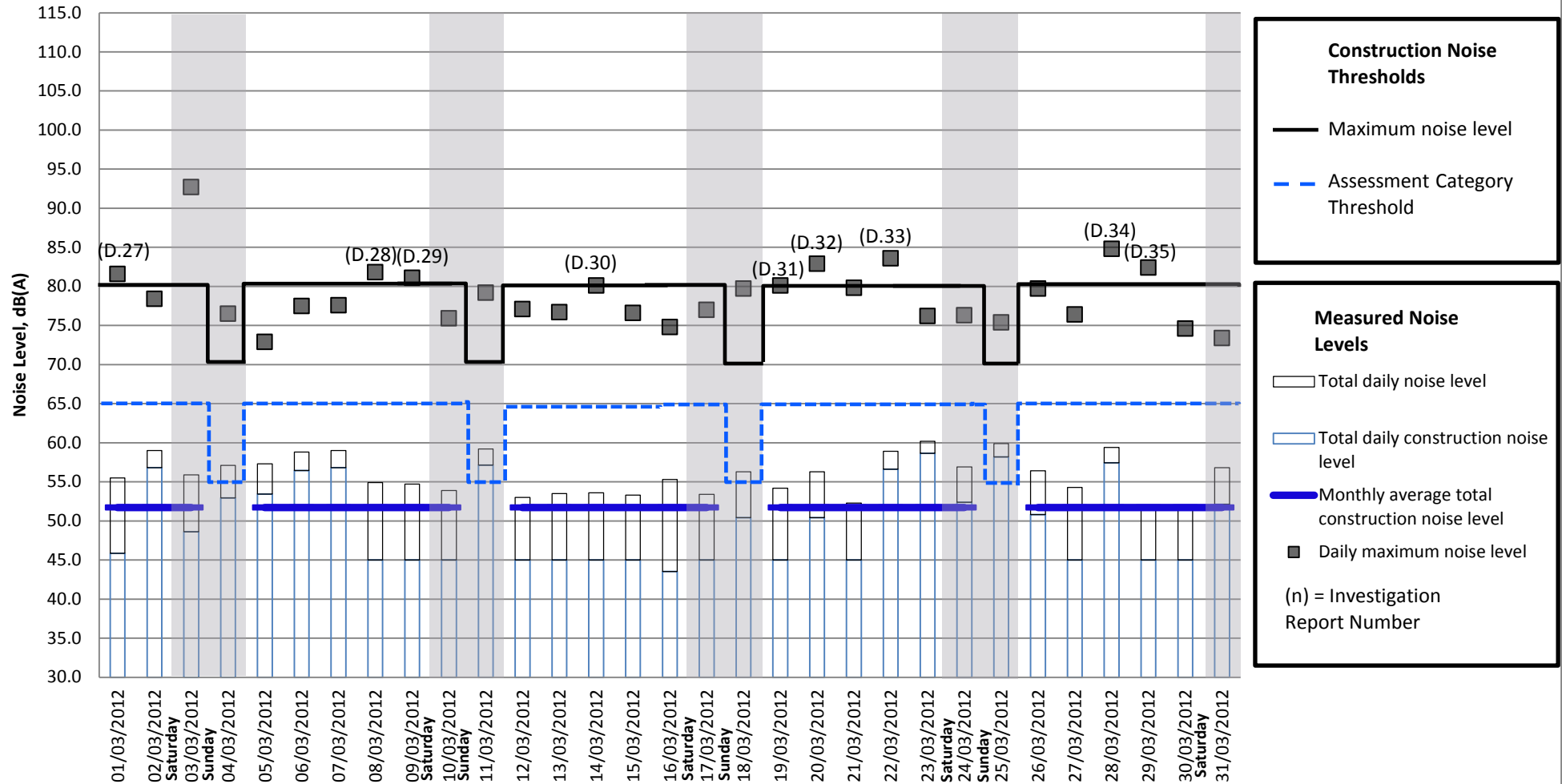
Measured Daytime Noise Levels at Scotstoun

Measurement period: March 2012



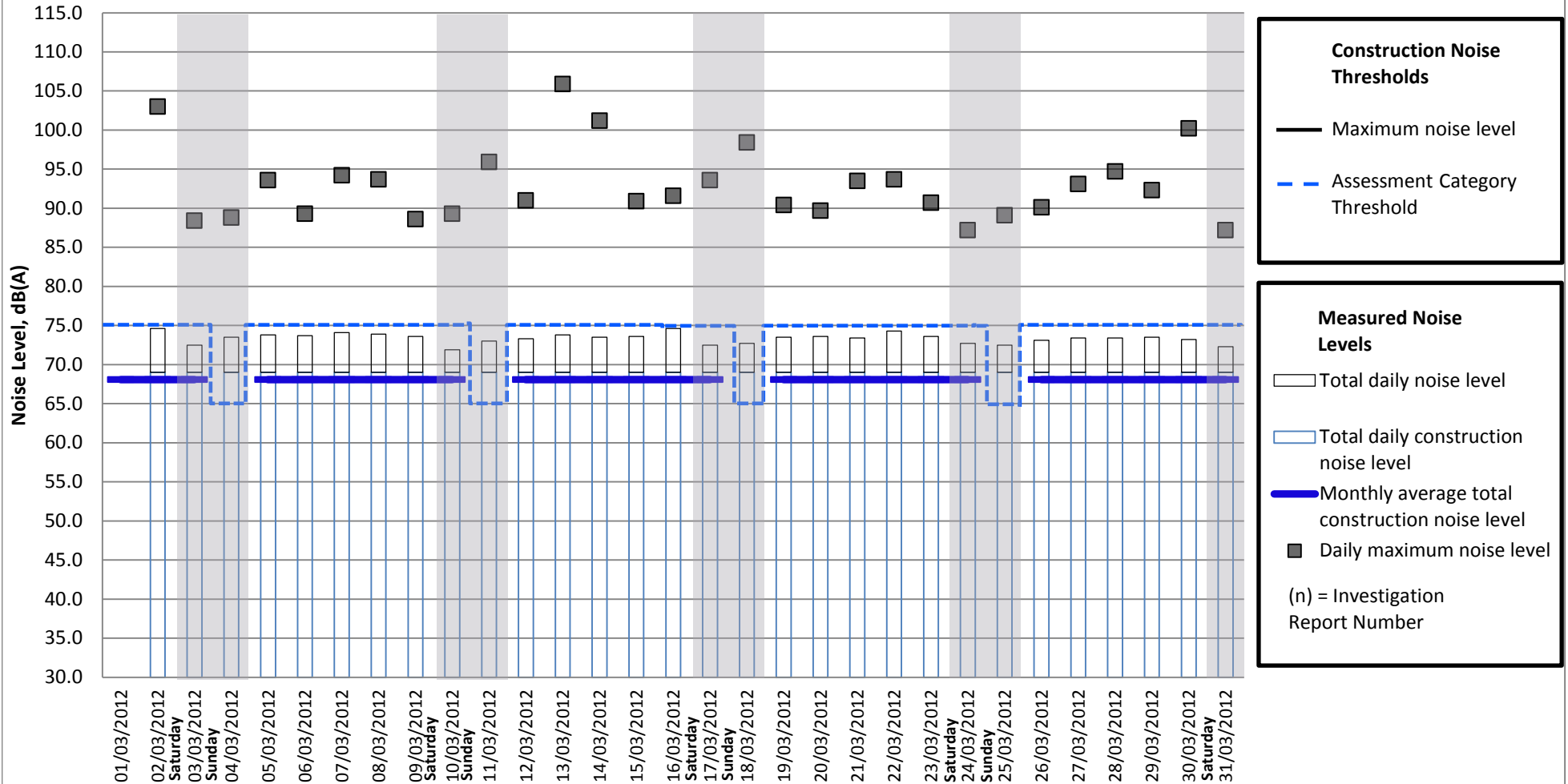
Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location. Daytime noise data is missing for 01/03/12, and the period 14/03/12 to 18/03/12 due to device error. The monthly average construction noise for Sunday has not been included as no Sunday works have been conducted at this location during March.

Measured Daytime Noise Levels at Dundas Home Farm Measurement period: March 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location during March. The monthly average construction noise for Sunday has not been included as no Sunday works have been conducted at this location during March.

Measured Daytime Noise Levels at Newton Measurement period: March 2012

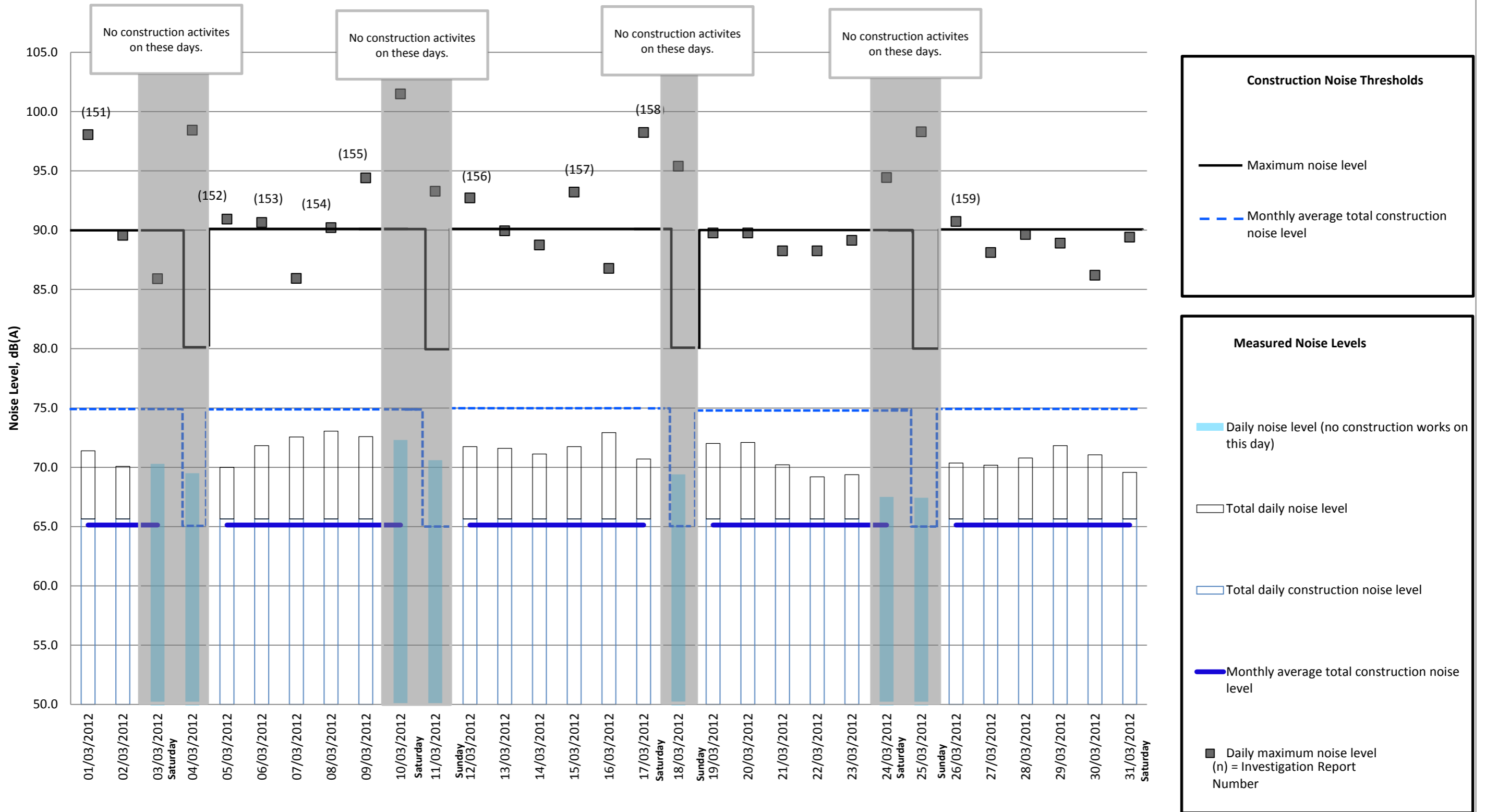


Note: The grey areas of the chart represent days on which no construction works have been conducted; no works have been conducted in the Southern areas on Saturday or Sunday. It should be noted that the measured noise levels Mon - Fri can not be attributed to construction works due to the considerable distance (1.75 kilometers) between this monitoring location and the closest construction works.

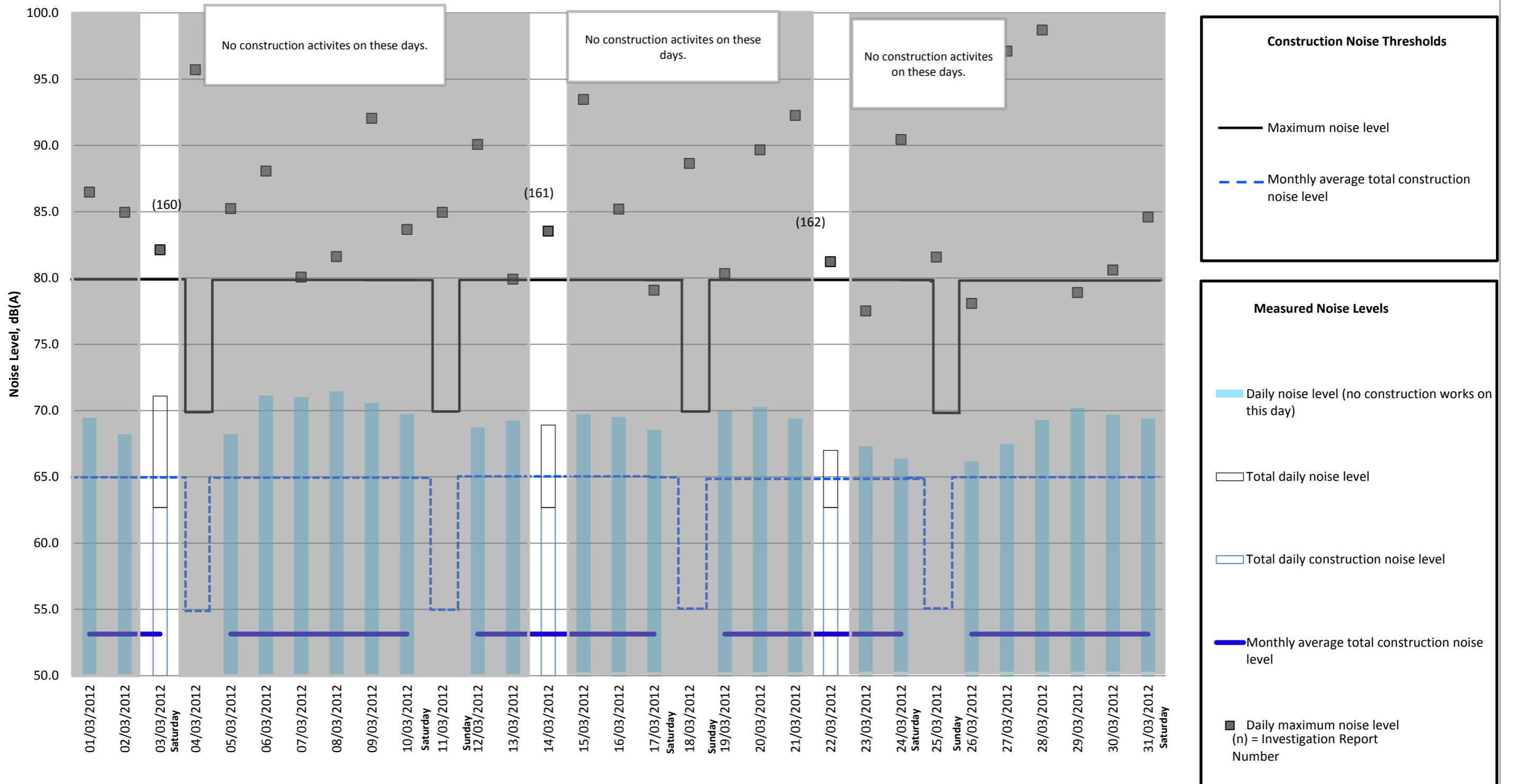
APPENDIX B -

**M9 J1A CONTRACT - CONSTRUCTION
NOISE MONITORING REPORTS**

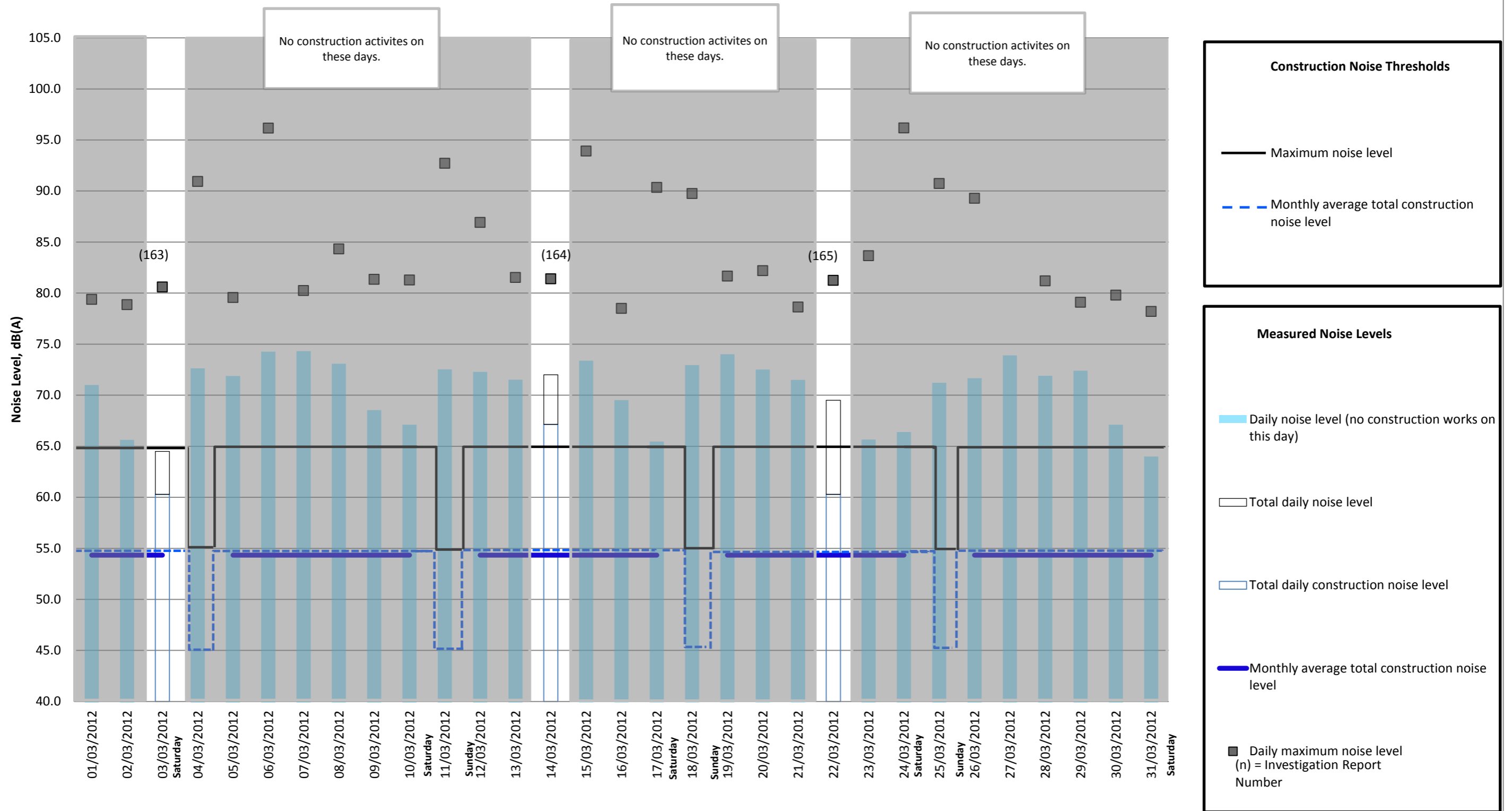
Measured daytime noise levels, 93/95 King Edwards Way (CNV02) Measurement period 1st March to 31st March 2012



Measured evening noise levels, 93/95 King Edwards Way (CNV02) Measurement period 1st March to 31st March 2012

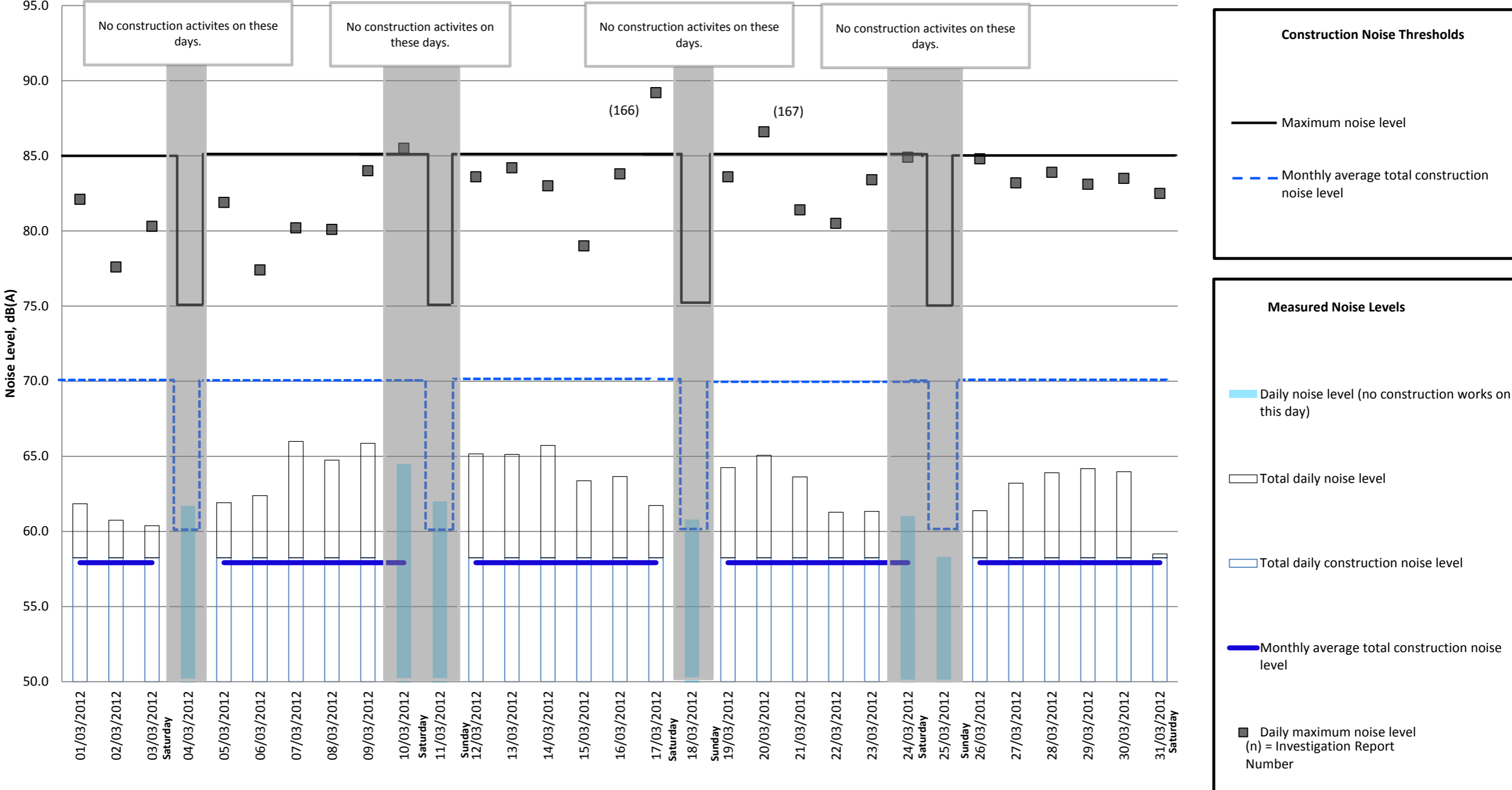


Measured night noise levels, 93/95 King Edwards Way (CNV02) Measurement period 1st March to 31st March 2012



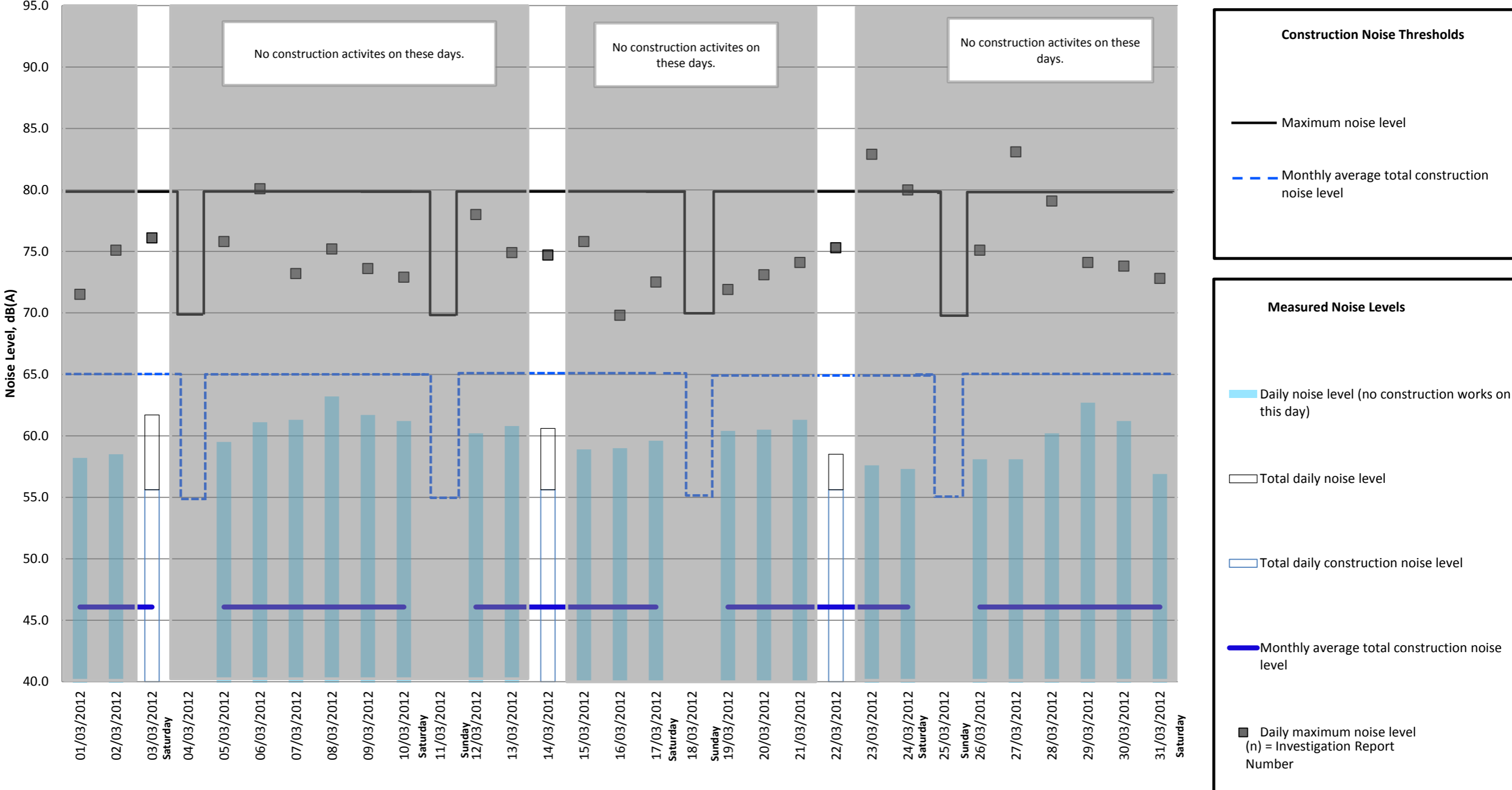
Sunday data have not been included as no construction works have been conducted during these hours.

Measured daytime noise levels, Buie Rigg (CNV07) Measurement period 1st March to 31st March 2012



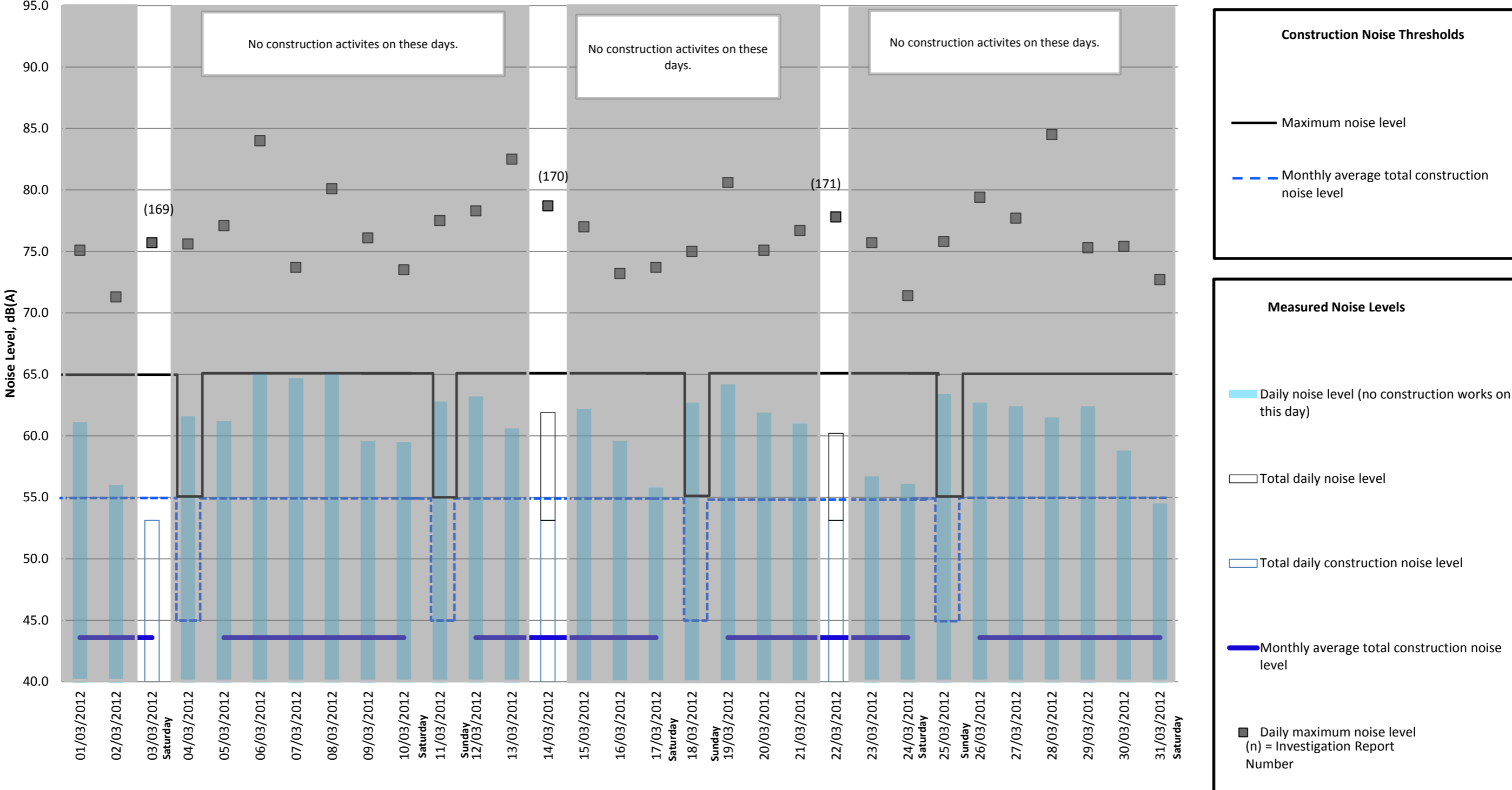
Measured evening noise levels, Buie Rigg (CNV07)

Measurement period 1st March to 31st March 2012

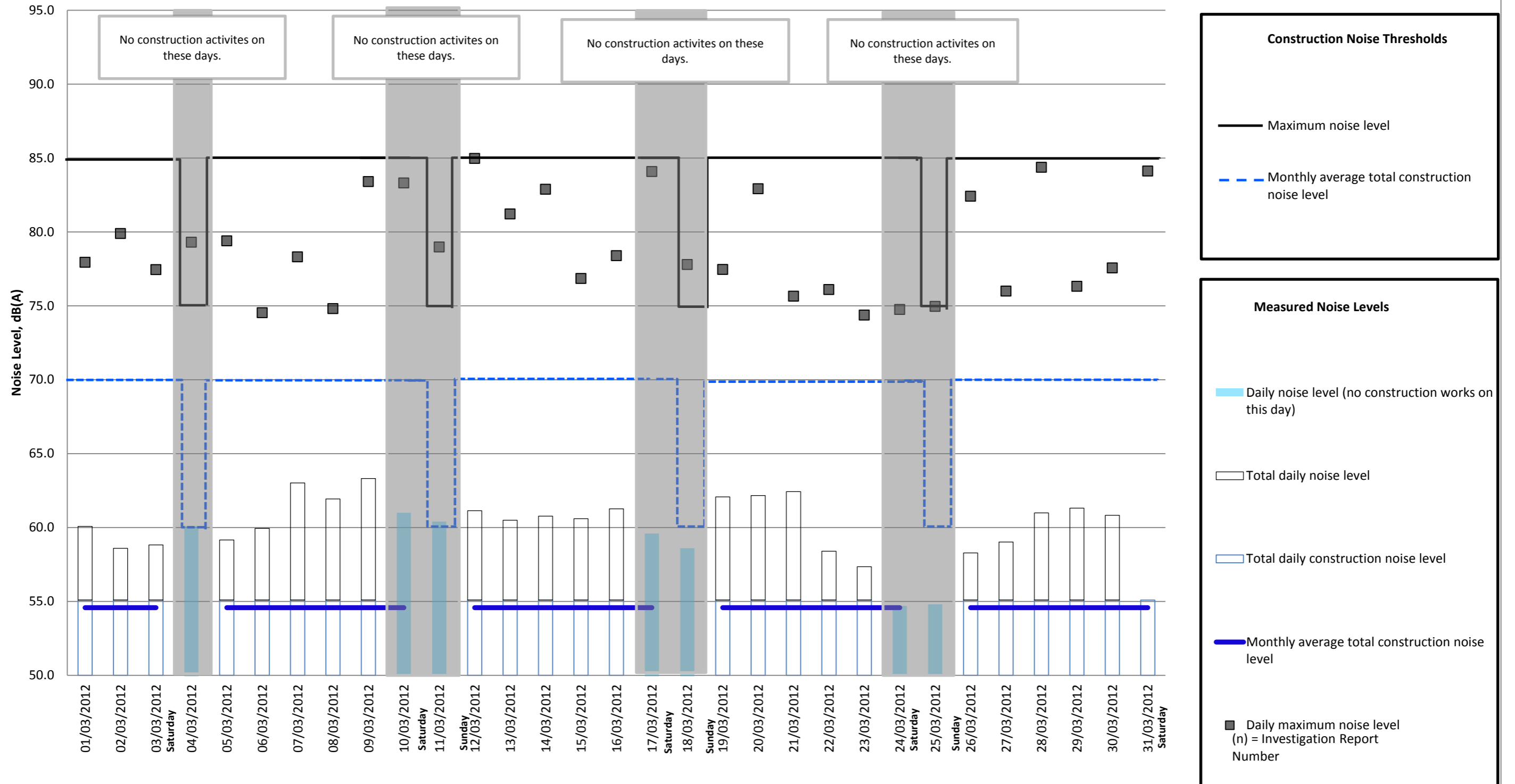


Measured night noise levels, Buie Rigg (CNV07)

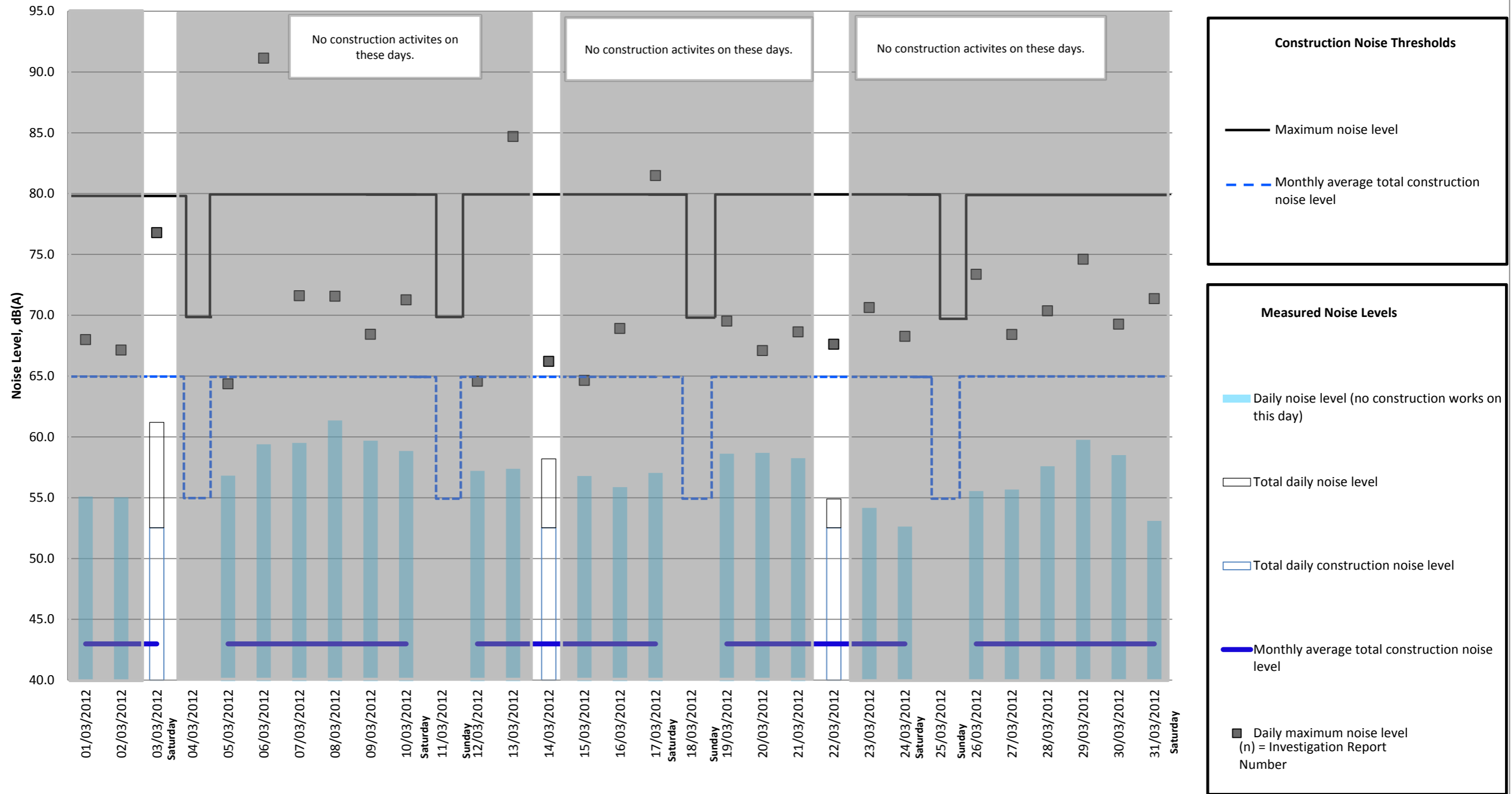
Measurement period 1st March to 31st March 2012



Measured daytime noise levels, 8 Kirklands Park Grove (CNV16) Measurement period 1st March to 31st March 2012



Measured evening noise levels, 8 Kirklands Grove (CNV16) Measurement period 1st March to 31st March 2012



Measured night noise levels, 8 Kirklands Park Grove (CNV16) Measurement period 1st March to 31st March 2012

