

INFINITY ACOUSTICS

NOISE IMPACT ASSESSMENT

MFG / Morrisons Petrol Station

325 Bury New Road,

Whitefield,

M45 7SE



Project Description:

BS4142 Assessment – Extension of operation hours

Project Reference Number:

A330MF

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1. Introduction

- 1.1 Infinity Acoustics Ltd has been appointed to undertake a noise assessment to assess the potential noise impact of the extension of operational hours on nearby residential dwellings at the MFG / Morrisons Petrol Station, 325 Bury New Road, Whitefield, M45 7SE.
- 1.2 As part of the application process, the client will be submitting a planning application for the development to the Local Planning Authority (LPA), Bury Metropolitan Borough Council. The application will be to extend the currently approved hours of the PFS from 06:00 - 00:00 to 24-hour operation.
- 1.3 The aim of the noise survey and assessment below is to provide the relevant information to assist the client and local planning authority in discharging the above planning condition, specifically in relation to the noise information required to approve the application. The noise levels at the site will be measured and assessed according to the relevant standards and noise control measures will be provided where necessary to ensure the amenity of the nearby residents can be protected from any potential noise impact caused by the development. Before the installation of any noise control measures or sound insulation works, the contents of this report should be fully approved by the local authority.
- 1.4 The following noise assessment will be undertaken with reference to the National Planning Policy Framework 2024 and the Noise Policy Statement for England 2010, as well as the following standards.

1.5 BS4142:2014+A1:2019 - Methods for Rating and Assessing Industrial and Commercial Sound.

BS4142 is a British Standard that provides guidance and a standardised methodology for assessing industrial and commercial noise sources. BS4142 outlines methods for defining specific sound levels from a given development and/or noise source. Rating penalties are then applied to account for the acoustic characteristics of the noise source. Rating penalties can be applied for the following:

- Tonality
- Impulsivity
- Intermittency

Using the subjective method, the penalties vary in magnitude depending on how perceptible the acoustic characteristic is to the human ear. The rating noise level is then compared to the underlying L_{A90} background sound level of the area without the source under assessment operating to assess the likely noise impact. The level by which the rating noise level exceeds the background L_{A90} defines the potential for noise impact. The table below outlines the relevant criteria bandings described in BS4142.

Description	Impact Rating
Rating noise levels +10 dB above the background	Significant adverse impact, depending on context.
Rating noise levels +5 dB above the background	Adverse impact, depending on the context.
Where the rating level does not exceed the background	Low impact, dependent on context

Table 1.0 – BS4142 Noise Criteria

This methodology will be used to assess the Petrol Filling Station noise during its proposed period of extended operation. As the site is an existing feature of the acoustic environment, it is concluded that if rating noise levels from the development in the extended hours of operation fall equal to or lower than the background would indicate low impact and 'No Observed Effect Level' when assessed in accordance with the NPPF and NPSE and if rating noise levels fall below the level at which BS4142 states adverse impact would occur then this would equate 'Lowest Observed Effect Level' when assessed in accordance with the NPPF and NPSE.

1.6 WHO Guidelines on Community Noise

The general noise criteria used in the assessment will be obtained from the World Health Organisation Guidelines on Community Noise. This document outlines specific absolute noise criteria at which community noise incident on a residential receiver could be considered to cause annoyance and potentially be detrimental to health. The W.H.O Guidelines define community noise as noise emitted from all sources in the community other than that within the industrial workplace. Given this, it is deemed that these criteria are appropriate to assess the noise from the petrol station. An overview of the criteria is outlined below:

Location	Criteria	Description
Inside Dwellings Night	>30 dB $L_{Aeq, 8hours}$	Adverse effects on speech intelligibility and moderate annoyance.
	>45 dB $L_{Amax,t}$	Sleep disturbance
Inside Dwellings Day	>35 dB $L_{Aeq, 16hours}$	Adverse effects on speech intelligibility and moderate annoyance

Table 2.0 – W.H.O Noise Criteria

1.7 IEMA Guidelines for Noise Impact Assessments

The IEMA Guidelines for Noise Impact Assessment specify general methods for assessing noise and the potential for noise impact. Specifically, this guidance can be used to assess the potential impact of noise sources for which there are no specifically designed standards or guidance, or to provide further context to a noise assessment. In order to assess the potential for noise impact, these guidelines outline an approach whereby the increase or change in noise levels in the assessment area due to the operation of the new source or development is calculated. The magnitude by which the ambient acoustic environment increases directly relates to the potential for noise impact. The table below indicates the significance of changes in noise levels in incremental intervals.

IEMA Guidelines for Noise Impact Assessment Criteria	
Effect Description	Definition
None / Not Significant	Less than 2.9dB L_{Aeq} change in sound level, and/or all receptors are of negligible sensitivity to noise.
Slight	A 3dB to 4.9dB L_{Aeq} change in sound level at a receptor of some sensitivity.
Moderate	A 3dB to 4.9dB L_{Aeq} change in sound level at a sensitive or highly sensitive receptor, or a greater than 5dB L_{Aeq} change in sound level at a receptor of some sensitivity.
Substantial	Greater than 5dB L_{Aeq} change in sound level at a noise-sensitive receptor, or a 5dB to 9.9dB L_{Aeq} change in sound level at a receptor of high sensitivity to noise.
Severe	Greater than 10dB L_{Aeq} change in sound level at a receptor of high sensitivity to noise.

Table 3.0 – IEMA Guidelines on Noise Impact Assessment Criteria

2. Site & Surroundings

- 2.1 The proposed development is located approximately 160 metres north of Whitefield town centre. The surrounding area comprises a mix of residential properties, commercial establishments and a fire station. Overall, the area can be characterised as urban.
- 2.2 The site is situated on the A56, Bury New Road, which facilitates moderate to high levels of road traffic flow throughout the day. During the site visit, road noise was considered the dominant noise source in the area.
- 2.3 In addition to the petrol filling station, the area includes several commercial establishments such as House of Fades, operating Monday to Saturday, 09:00–19:00, and Sunday 10:00–17:00, Happy Seasons Chinese and Thai Takeaway, open daily from 16:00 to 23:00, except Tuesdays, and Whitefield Nails For U, open daily from 09:00 to 18:00, closed on Sundays.
- 2.4 The filling station itself comprises no.4 fuel pumps, facilitating a maximum of 8 cars fuelling at any one time. During the site visit, it was noted there were no.3 Global Star V C33-33 fuel pumps and no.1 Petrotec P5000HH fuel pump.
- 2.5 The petrol station also had two external plant units, one of which was a HPS Hubbard chiller unit situated along the northern façade of the kiosk building. Given the nature of the chiller unit, which operates when the internal fridge units drop below a certain temperature, it is expected that this unit already operates 24 hours a day, and therefore, it will not be included in the subsequent assessment. The second mechanical plant unit was situated along the western rear façade of the kiosk building and was noted as a Daikin RZQSG100L8V1B AC unit. It is assumed that the AC unit could operate at any time during the proposed extended hours of operation and, therefore, will be included in the subsequent assessment.

- 2.6 Along the northern area of the site, the petrol filling station also had no.1 tyre inflation pump, which could also operate in the proposed hours of extended operation and thus will be included in the assessment.
- 2.7 It is proposed that the existing hours of operation of the site between 06:00 – 00:00 be extended to 24-hour operation. Given this, the proposal presents an additional 6 hours of nighttime operation at the site.
- 2.8 The figure below indicates the location of the development site, the nearest residential dwellings and noise survey measurement locations.



Figure 1.0 – Site, Surroundings & Measurement Locations

3. Survey

3.1 A noise survey of the site was undertaken between the 19th of September 2025 to the 22nd of September 2025.

3.2 The following equipment was used to undertake the noise survey. All equipment used was field calibrated at 1kHz with a drift of less than 0.1 dB before and after the measurement. Calibration certificates for the equipment can be provided upon request.

- SVAN 971A Class 1 Sound Level Meter – SN – 139441
- Castle SONIK-E Class 1 Sound Level Meter – SN - 075734
- SVAN SV33B Class 1 Calibrator – SN – 122241

3.3 The long-term noise meter and associated microphone at Measurement Location 1 (ML1) were located 2.7m from the ground, affixed to a lamp post at the rear of the development site. The noise meter was in near free field conditions.

3.4 Further spot noise measurements of various operations and the plant at the site were also undertaken. For these measurements, the microphone was typically positioned 1.5m from the ground and 1m from the noise source.

3.5 The weather during the setup of the equipment is outlined below:

- 16.9 Degrees Celsius
- WNW wind with speeds of less than 1m/s
- Partial cloud coverage and no precipitation

During the collection of the equipment, the weather was

- 5.4 Degrees Celsius

- E wind with speeds of less than 1m/s
- Partial cloud cover and no precipitation

3.6 Generally, the weather across the majority of the survey complied with the requirements of BS 7445-2. A full weather summary for the duration of the survey is outlined in the table below and has been taken from the nearest functioning weather station.

Weather Data	
Description	Data
Temp (C)	0.9 - 19.2
Rainfall (mm)	0.0 - 13.8*
Wind Speed (m/s)	0.0 – 4
Prevailing Wind	SSE
Relative Mean Humidity (%)	82.7

Table 4.0 – Weather Data

*Significant rain occurred on the 20th of September, not included in the assessment

3.7 The summary results of the noise survey are presented in the tables below and will be used in the subsequent Noise Assessment. A full noise survey time history can be found in Appendix C.

Day, Evening, Night Results ML1				
Date	Time Period	L _{Aeq} (dB)	L _{Afmax} (dB)	L _{A90} (dB)
Day – 19/09/2025	09:00 – 19:00	64.0	93.0	58.0
Eve – 19/09/2025	19:00 – 23:00	61.0	87.0	55.0
Night – 19/09/2025	23:00 – 07:00	58.0	81.0	47.0
*Day – 20/09/2025	07:00 – 19:00	66.0	86.0	61.0
*Eve – 20/09/2025	19:00 – 23:00	64.0	78.0	58.0
Night – 20/09/2025	23:00 – 07:00	59.0	83.0	50.0
Day – 21/09/2025	07:00 – 19:00	62.0	92.0	57.0
Eve – 21/09/2025	19:00 – 23:00	61.0	88.0	54.0
Night – 21/09/2025	23:00 – 07:00	59.0	87.0	52.0
Day – 22/09/2025	07:00 – 09:15	65.0	90.0	59.0

Table 5.0 – Noise Survey Data ML1

*Rain occurred during these periods, not included in the assessment

3.8 The proposed operational times of the petrol filling station are 24 hours a day. Given this, the proposed development represents an additional 6 hours of operation in the nighttime between 00:00 – 06:00. The histogram below presents an analysis of the background sound levels in the proposed periods of extended operation between 00:00 – 06:00 in the nighttime period.

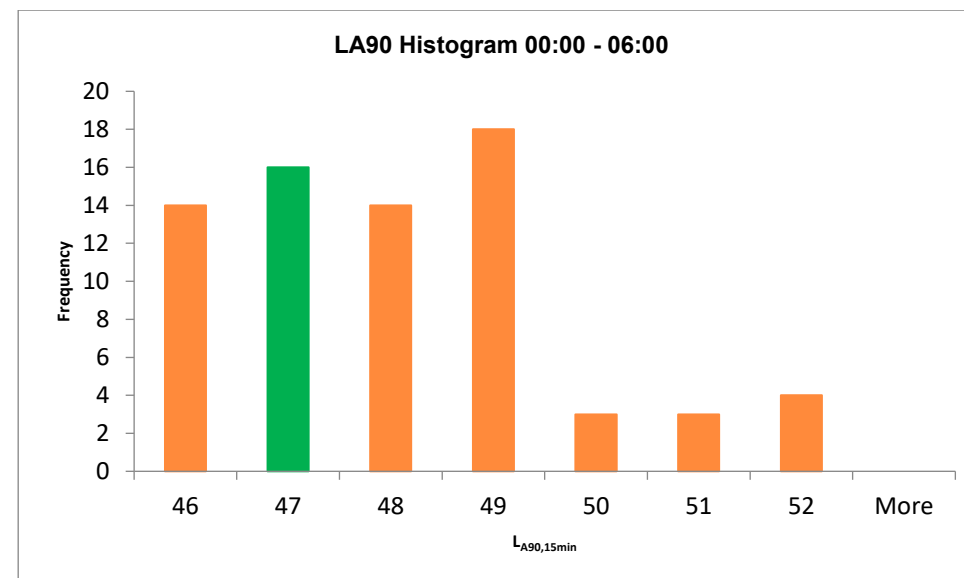


Figure 2.0 – L_{A90} Histogram 00:00 – 06:00

3.9 The lowest statistically most repeated L_{A90,15min} value in the period of extended operation is 49 dB L_{A90}. However, the background sound levels of the area are higher than this for 61% of the time. Therefore, a more appropriate value is 47 dB L_{A90}; the background sound levels of the area are equal to or higher than this value for 81% of the time throughout the proposed periods of extended operation. Therefore, a background sound level of 47 dB L_{A90} will be used in the subsequent BS4142 assessment below.

4. Mitigation and Noise Control Measures

- 4.1 In order to ensure the noise impact from the development is as low as possible, a set of noise control measures has been devised. These are outlined in the section below:
- 4.2 The tannoy system should not operate during the period of extended hours of operation except in cases of emergency.
- 4.3 The fuel delivery period and all other deliveries should not occur within the proposed period of extended operation between 00:00 – 06:00.

5. Computer Noise Model Results

- 5.1 In order to calculate the specific sound levels from the development at the Noise Sensitive Receptor, a computer sound model has been generated using DGMR Noise Prediction Software. This software undertakes calculations using the methods outlined in ISO 9613-2:2024 Attenuation of Sound During Propagation Outdoors.
- 5.2 The following assumptions have been made within the computer sound model:
 - The ground in the area has been considered primarily hard.
 - The topography of the site and surrounding land has been taken from Google Earth and information gained on-site.
 - The elevations and building height for the proposed development have been obtained from the information gained on-site.
 - The fuel pumps have been input into the model as point sources 1m from the ground.
 - The tyre pump and AC unit have been input into the model as point sources 1m from the ground.
 - The vehicle movements have been input into the model as moving point sources/line sources at a height of 0.5m.
 - The $L_{A_{fmax}}$ noise levels from a car door slam have been input into the model as a point source 1m from the ground.
 - The sound power of each noise source has been calculated from measured data. Sound power and noise model input calculations can be found in Appendix D.
- 5.3 The results of the computer noise model can be found in the table below. The table below presents the noise levels at the most exposed window

associated with each Noise Sensitive Receptor, considering the noise control measures in Section 4.0 have been implemented.

5.4 The vehicle movements and pump usage details used from the model have been obtained from transaction data obtained at 17 other client-owned and operated 24-hour fuel sites. During the busiest 1-hour period between 00:00 – 06:00, it is expected there could be 22 transactions per hour. This would equate to approximately 6 transactions per 15-minute assessment period. However, the client has no way to differentiate between fuel purchases and normal purchases of goods. Given this, it has been assumed there would be 4 vehicle movements at the site for fuel filling operations and 2 vehicle movements at the site for shop-only purchases, thus equating to a total of 6 movements per 15-minute operational period. Transaction data can be found in Appendix D.

Specific Noise Levels		
Location	L _{Aeq,15min} Noise Level (dBA)	L _{Afmax} Noise Level (dBA)
NSR 1	41.0	60.0
NSR 2	34.0	50.0
NSR 3	38.0	54.0
NSR 4	34.0	53.0
NSR 5	33.0	51.0

Table 6.0 – Calculated Specific Noise Levels

5.5 As can be seen in the table above, the noise levels from the site within the proposed period of extended operation are relatively low, and when considering an open window at the nearby dwelling, the internal noise criteria would be readily achieved.

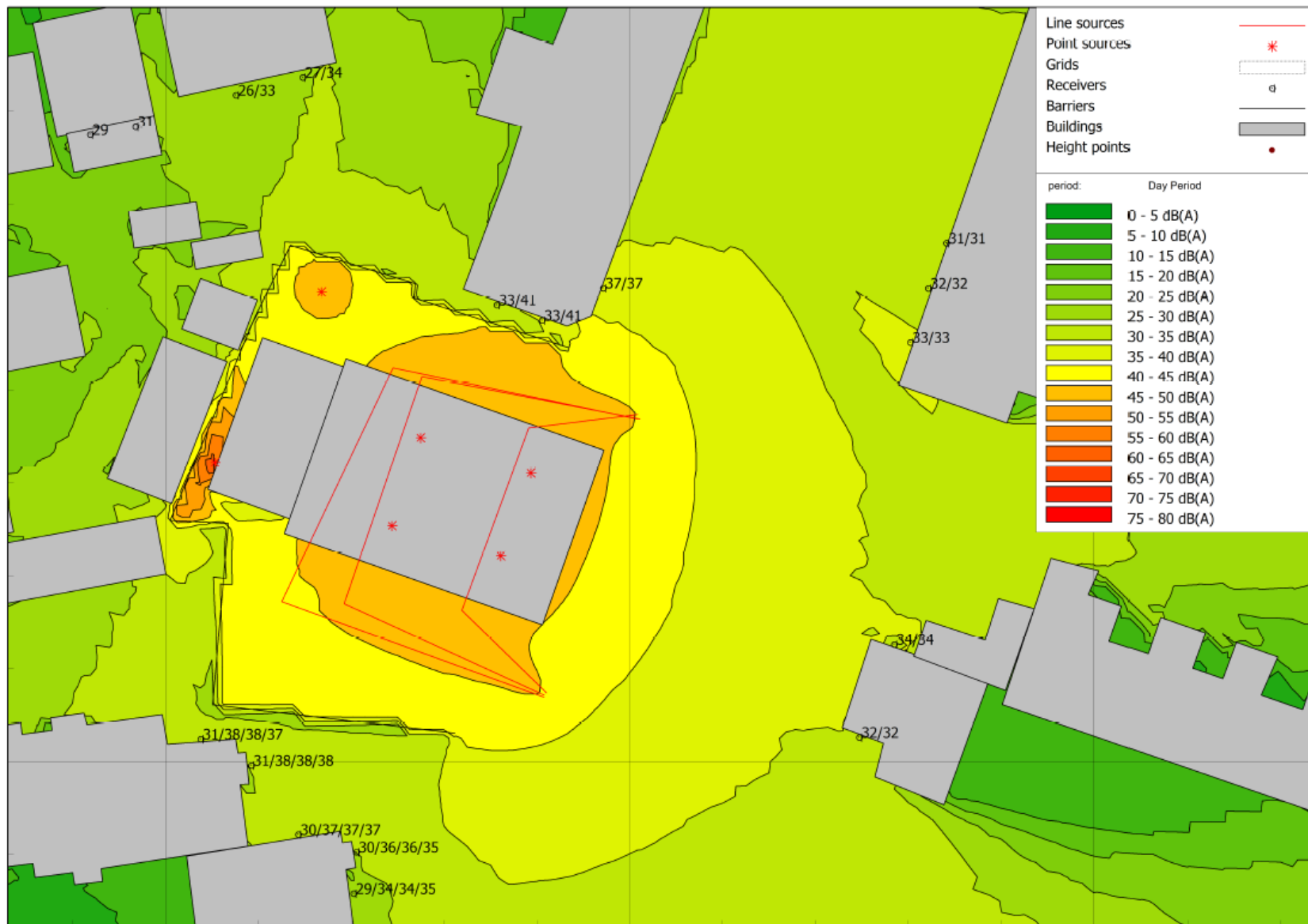


Figure 3.0 – $L_{Aeq,15min} - 1.5m$ Noise Contour Ground Floor

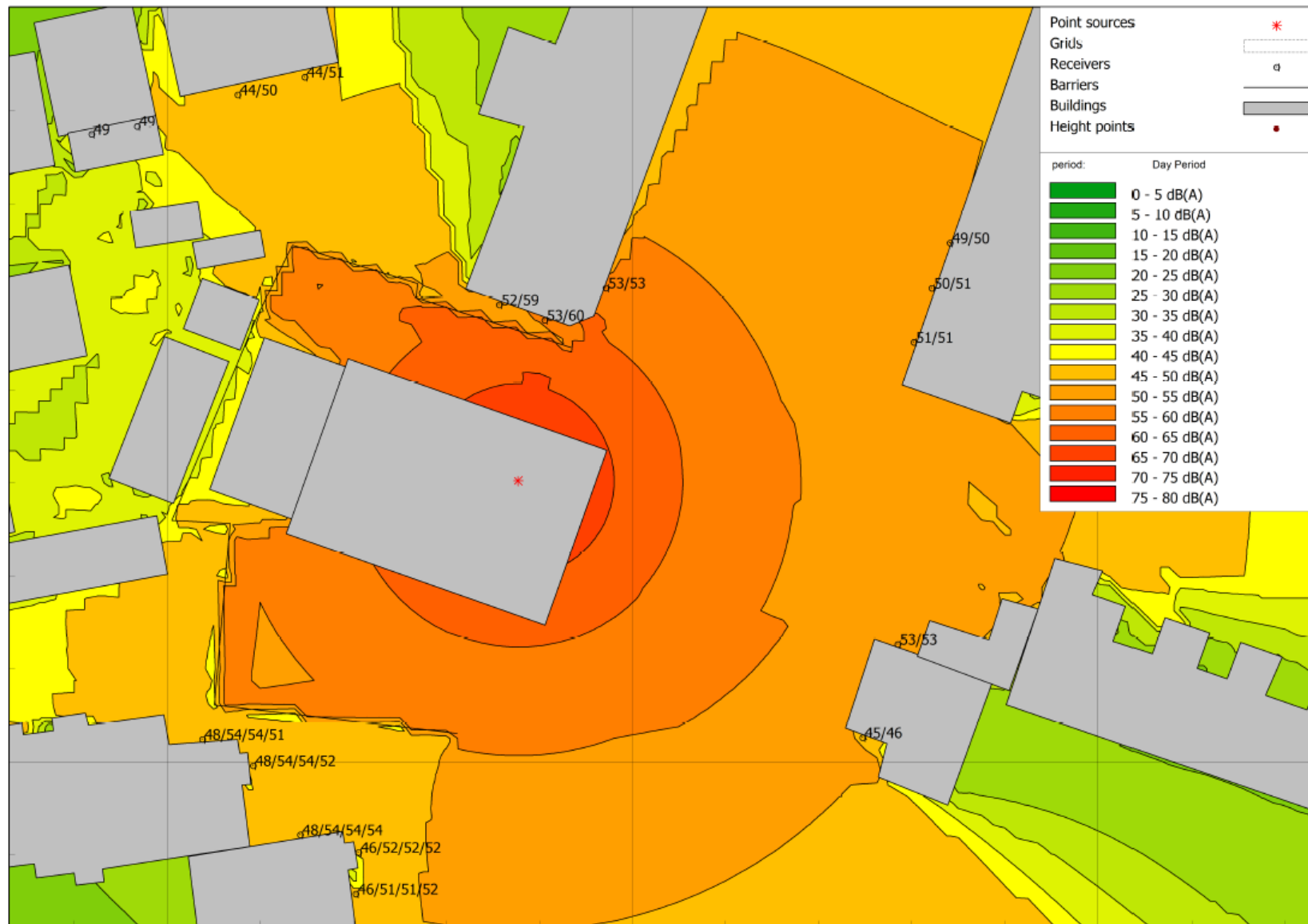


Figure 4.0 – $L_{Aefmax,t} - 1.5m$ Noise Contour Ground Floor

6. BS4142 Noise Assessment

6.1 The following section of the report assesses the noise from the development during the proposed periods of extended operations by undertaking a BS4142 Assessment.

6.2 In order to establish the rating noise level for the assessment, the following rating penalties have been applied in accordance with the subjective methodology outlined in BS4142.

Rating Penalties		
Penalty Description	Penalty (dB)	Description
Tonality	+2.0	Slight Tonality of Vehicle Engines and Pumps
Impulsivity	+3.0	Impulsivity of Vehicle Doors Closing
Intermittently	+3.0	Intermittent Activity at the Site
Other Characteristics	--	--
Total Rating Penalties		+8.0

Table 7.0 – BS4142 Rating Penalty Analysis

6.3 The BS4142 Assessment is outlined in the table below and has been undertaken assuming the noise control measures outlined in Section 4.0 of the report have been implemented.

BS4142 Assessment					
Description	NSR 1 (dBA)	NSR 2 (dBA)	NSR 3 (dBA)	NSR 4 (dBA)	NSR 4 (dBA)
Specific Noise Level at NSR	41.0	34.0	38.0	34.0	33.0
Rating Noise Level +8 dB	49.0	42.0	46.0	42.0	41.0
Background L_{A90}	47.0	47.0	47.0	47.0	47.0
Level Above Background	+2.0	-5.0	-1.0	-5.0	-6.0

Table 8.0 – BS4142 Assessment

6.4 As can be seen in the assessment above at NSRs 2 – 5, the expected rating noise levels fall 1 – 6 dB below the background sound level. This indicates 'Low Impact Depending on Context' when assessed in accordance with BS4142 and 'No Observed Effect Level' when assessed in accordance with the NPPF and NPSE.

6.5 The rating noise level at NSR 1 falls 2 dB above the background but below the level at which BS4142 states adverse impact will occur. This outcome would represent the 'Lowest Observed Effect Level' when assessed in accordance with the NPPF and NPSE.

6.6 BS4142 clearly stipulates that the context of the assessment should be fully considered when assessing the potential for noise impact produced by a given development. The key context surrounding the assessment is outlined below.

- 1) The assessment reflects the busiest 15 min period during the proposed period of extended operations it should be noted that on average there is expected to be 3 vehicle movements per 15 min for the majority of the night time operations which is substantially lower than used in the assessment

and thus the potential for impact for the vast majority of the night is lower than stated in the numerical assessment. The transaction data of the nighttime is presented in Appendix D.

- 2) The assessment has been undertaken using a sufficiently robust background sound level. As can be seen in the background sound level analyses above, the statistically most repeated background sound level during the night is 2 dB higher, thus indicating that at NSR 1, the actual impact would be lower than stated in the numerical assessment above for the vast majority of the time.
- 3) The proposed development does not represent the introduction of any new noise sources into the area. The petrol station already operates at night between 06:00 – 07:00; given this, it is expected that the nearby residents will have a lower sensitivity to noise generated by the site. Given this, it is expected that the actual impact would be lower than stated in the numerical assessment above.

6.7 Based on the results of the numerical assessment and surrounding context, it is concluded that the proposed extension of operational hours would have a low noise impact on the surrounding residents in accordance with BS4142..

7. Increase In Ambient Noise Level Assessment

- 7.1 To provide further context to the BS4142 assessment above, an increase in ambient noise levels assessment has been undertaken at the most exposed NSR during the proposed nighttime extended hours of operation.
- 7.2 The increase in ambient noise level assessment is undertaken by logarithmically adding the noise level from the site to the lowest measured ambient noise levels during the proposed extended hours of operation. The higher the increase in noise levels, the higher the likely noise impact. To provide a robust and conservative assessment, the rating noise level will be used, thus accounting for any acoustic features associated with the noise of petrol stations noise.
- 7.3 The increase in ambient noise level assessment is outlined in the table below.

IANL Assessment	
Description	Night Most Exposed NSR (dB)
Rating Noise Level at NSR	49.0
Lowest Measured $L_{Aeq,15min}$ 00:00 – 06:00	53.0
Resulting Noise Level	54.5
Increase in Noise Level	+1.5
Impact Rating	'Not Significant'

Table 9.0 – IANL Assessment

- 7.4 When assessed in accordance with the IEMA Guidelines on Noise Impact, the increase in ambient noise levels due to the extension of operational hours at the most exposed NSR will be 'Not Significant'.

8. Open Window Assessment - LAfmax

- 8.1 To further assess the potential for impact during the nighttime periods, an LAfmax Car Door Slam Open Window Assessment has been undertaken at the most exposed NSR in order to analyse a worst-case scenario.
- 8.2 The assessment below assumes a nominal 15 dB attenuation of an open window at the NSR, as well as a car door slam occurring at the site.

LAfmax Assessment	
Description	Most Exposed NSR (dB)
Car Door Slam LAfmax Noise Level at NSR	60.0
Attenuation from an Open Window	-15.0
Internal Noise Level in Bedroom NSR	45.0
W.H.O Criteria Bedrooms Night LAfmax	45.0
Level Below Criteria	0.0

Table 10.0 – Open Window Assessment

- 8.3 The assessment above indicates that all internal noise criteria can be achieved within the bedroom of the most exposed NSR when considering LAfmax events from a car door slam and an open window. This indicates that the development would have a low impact on the NSR.

9. Conclusion

- 9.1 In conclusion, a noise survey has been undertaken at MFG / Morrisons Petrol Station, 325 Bury New Road, Whitefield, M45 7SE. The noise levels obtained during the survey have allowed a noise assessment to be undertaken in order to assess the potential noise impact due to the proposed extension of operational hours on the surrounding dwellings during its operational hours.
- 9.2 Noise control measures have been defined in Section 4.0. The effectiveness of the noise control measures has been assessed in Section 6.0. The results of the noise impact assessment indicate that, provided all recommendations are implemented, all relevant noise criteria can be achieved, and low impact is expected. This represents 'No Observed Effect Level' when assessed in conjunction with the NPPF and NPSE.

APPENDIX A – List of Terms and Glossary

The following section of the report outlines a glossary of terms used in the assessment to assist the reader in understanding the assessment above, which is, by necessity, technical in nature.

Decibel DB - The decibel, often denoted as dB, is the logarithmic unit used to describe the magnitude of sound or noise levels. The typical range of sound pressure levels is from 0 dB, defined as the threshold of hearing, to 120 dB, defined as the threshold of pain.

Frequency Hz – As well as the decibel sound and noise, it is also measured and defined in frequency. Frequency or Hertz (Hz) is an expression of the number of cycles a sound wave will complete per second. Larger frequencies may be expressed in kilohertz (kHz). The typical range of human hearing is from 20 Hz to 20,000Hz; however, with age, the audible frequency range decreases in most humans.

A - Weighting – The A-weighting is the most commonly used weighting curve taken from IEC 61672:2003 and is applied to sound pressure level measurements. The A-weighting is applied to measured sound levels to account for the loudness perceived by the human ear, as the ear is less sensitive to low audio frequencies.

LAeq - The A-weighted 'equivalent continuous noise level', which is an average of the total sound energy measured over any given time period. L_{Aeq} is the level of a continuous noise that has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period. The A-weighting represents a curve

that is applied to the measured noise levels to represent the way the human auditory system perceives sound.

LAfmax - The maximum A-weighted noise level that was recorded during the monitoring period using a fast time weighting. This acoustic parameter represents more transient sound levels within the acoustic environment, which may only occur for a few seconds or minutes.

LA10 - This is the A-weighted noise level exceeded for 10% of a given time period. This parameter is typically used to measure and predict road traffic noise.

LA90 - This is the A-weighted noise level exceeded for 90% of any given time period. Generally, this acoustic parameter represents the underlying background sound level in a given area and doesn't generally include transient or short-term noise events that may occur within the surroundings.

Sound Pressure – Sound pressure is the difference between the instantaneous pressure at a point in the presence of a sound wave and the static pressure of the medium. Sound pressure fluctuates due to refractions and compressions of air molecules.

Sound Reduction Index – The sound reduction index, denoted by the parameter 'R', is the laboratory-measured sound reduction given material or construction. R is measured in 1/3 octave band frequencies. The R_w sound insulation parameter stands for the weighted standardised sound reduction index and is a single-figure global rating of the sound insulation of a given material or construction.

APPENDIX B – Development Plans



APPENDIX C – Noise Survey History

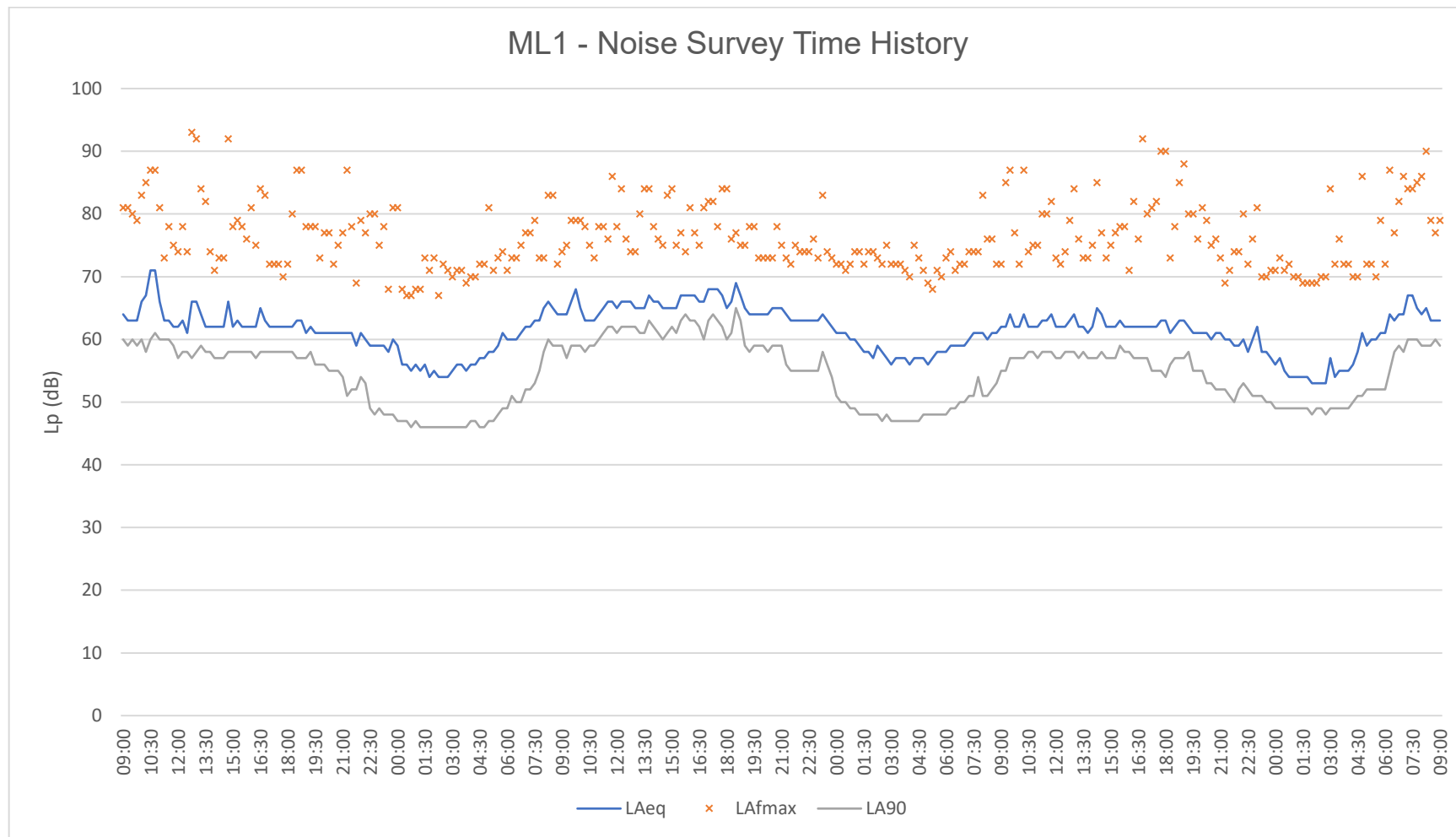


Figure 6.0 – Noise Survey Time History

APPENDIX D – Calculations

D.1 - Noise Model Input Calculations – Specific Source Levels

The table below presents the source noise data used in the assessment. The noise data below was obtained by specific noise measurement of operations and plant at the site, as well as taken from the Infinity Acoustics Sound Database of noise data obtained from other Morrison filling stations and manufacturers' data.

Description	Global A (dB)	Z Weighted Octave Band Frequency (Hz) (dB)						
		63	125	250	500	1k	2k	4k
Car Pass/Pullup/Departure by 3m	60.0	68.0	60.0	60.0	58.0	55.0	53.0	50.0
Car Calculated Sound Power Q2	78.0	86.0	78.0	78.0	76.0	73.0	71.0	68.0
C33 Fuel Pump at Lp at 1m	70.0	66.0	66.0	66.0	67.0	64.0	63.0	60.0
C33 Fuel Pump Calculated Lw Q2	78.0	74.0	74.0	74.0	75.0	72.0	71.0	68.0
PH5000 Fuel Pump at Lp at 1m	70.0	60.0	71.0	71.0	63.0	64.0	63.0	63.0
PH5000 Fuel Pump Calculated Lw Q2	78.0	68.0	79.0	79.0	71.0	72.0	71.0	71.0
Tyre Pump Lp at 1m	64.0	69.0	70.0	65.0	63.0	53.0	51.0	55.0
Tyre Pump Calculated Sound Power Q2	72.0	77.0	78.0	73.0	71.0	61.0	59.0	63.0
Tannoy Lp at 2m	80.0	65.0	66.0	71.0	78.0	72.0	75.0	69.0
Tannoy Calculated Sound Power Q2	94.0	79.0	80.0	85.0	92.0	86.0	89.0	83.0
AC Unit Sound Power	69.0	73.0	71.0	71.0	68.0	63.0	59.0	53.0
Car Door Slam Lp at 1m	85.0	--	--	--	--	--	--	--
Car Door Slam Sound Power Q2	93.0	--	--	--	--	--	--	--

Table 11.0 – Specific Noise Level Measurements and Sound Power Levels

D.2 – Model Inputs - On Time Corrections

Vehicle Movement On-Time Correction Calculations						
Assessment Period	Calculated L_{WA} (dB)	Total Dist (In and Out) (m)	Time to Cover Distance 10mph (mins)	no. Cars per Assessment Period	Total On-Time per Assessment Period (min)	Time Corrected L_{WA} (dB)
Night 15min Fuleing Per Lane	78.0	59.0	0.25	2	0.5	63.0
Night 15min Shop Only	78.0	59.0	0.25	2	0.5	63.0

Table 12.0 – On-Time Corrections Vehicle Movements

Fuel Pump On-Time Correction Calculations						
Fuel Pump Type	Assessment Period	Calculated L_{WA} of Fuel Pump (dB)	Time to fill the car	Cars Per Pump	On-Time Per Pump (mins)	Time Corrected L_{WA} (dB)
C33 Fuel Pump	Night 15min	78.0	1.5 min	1	1.5min	68.0
PH5000 Fuel Pump	Night 15min	78.0	1.5 min	1	1.5min	68.0

Table 13.0 – On-Time Corrections Fuel Pumps

Tyre Pump On Time Correction						
Fuel Pump Type	Assessment Period	Calculated L_{WA} of Fuel Pump (dB)	Time to fill the car tyre	Cars Per Pump	On-Time Per Pump (mins)	Time Corrected L_{WA} (dB)
Tyre Pump	Night 15min	72.0	1	1	1	60.0

Table 14.0 – On-Time Corrections Fuel Pumps

D3 – AC Unit Data Sheet & Transaction Data

					(4) - Site Name	00:00	01:00	02:00	03:00	04:00	05:00
Dimensions	Unit	Height	mm	990	Fordhouse	10	6	5	6	11	43
		Width	mm	940	Royal Oak	14	8	6	4	5	11
		Depth	mm	320	Bilston	17	12	9	8	12	19
Weight	Unit		kg	81	Sedgley Road	15	10	6	6	9	22
Operation range	Cooling	Ambient	Min.	°CDB	Gailey	8	6	6	8	14	29
			Max.	°CDB	Tipton	11	8	5	6	12	28
					Bloxwich	10	5	3	3	3	12
	Heating	Ambient	Min.	°CWB	Wednesbury	15	10	8	8	11	36
			Max.	°CWB	Bluecoates	14	10	7	4	5	5
					Osprey	9	6	5	4	8	20
					Eve Hill	16	12	8	6	6	21
Sound power level	Cooling		dBa	69	Merry Hill	8	5	5	5	6	14
Sound pressure level	Cooling	Nom.	dBa	53	Netherton	13	9	7	6	12	30
	Heating	Nom.	dBa	57	Brandhall	17	13	9	9	11	19
Refrigerant	Charge		kg	2.9	Shortcorss	15	10	8	6	11	24
	GWP			2087.5	Great Barr	6	4	2	3	5	18
	Charge		tCO2Eq	6.1	Handsworth	12	9	6	5	8	17
Piping connections	Liquid	OD	mm	9.52	Description	00:00	01:00	02:00	03:00	04:00	05:00
					Average Transactions Per Hour	12.0	8.0	6.0	6.0	9.0	22.0
					Average Per hour between 00:00 - 06:00	10.5					
					Average per 15min 00:00 - 06:00	3					
					Average per hour 05:00 - 06:00	22.0					
					Average 15min 05:00 - 06:00	6					

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