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Royal Prince Alfred Hospital Redevelopment (RPAH Redevelopment)

Construction Noise and Vibration Monitoring Report 8

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Attention To	CPB Contractors Pty Limited

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1 INTRODUCTION

This report presents the results of the noise and vibration monitoring conducted by Acoustic Logic during the site establishment works for the RPA Hospital redevelopment, located at 50 Missenden Road, Camperdown. Details presented in this report include monitoring locations, relevant noise and vibration objectives, measured noise and vibration levels over the presented monitoring period and a discussion of results where applicable.

This report covers the eighth fortnight since the beginning of construction monitoring, being between Monday 18th March, 2024 and Sunday 31st March, 2024.

Unattended noise and vibration monitoring has been undertaken to satisfy the requirements of Condition B26 of SSD-47662959's Development Consent, in conjunction with the noise and vibration management levels established within the *Early Works Construction Noise and Vibration Management Plan*, prepared by this office, and as they are so updated throughout the construction process where necessitated (Ref: 20230239.9/0610A/R1/LA). Condition B26 of SSD-47662959's Development Consent is provided below for reference:

> *"**Environmental Management Plan Requirements***
>
> ***B26**. Management plans required under this consent must be prepared having regard to the relevant guidelines, including but not limited to the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).*
>
> *Notes:*
>
> *The Environmental Management Plan Guideline is available on the Planning Portal at: https://www.planningportal.nsw.gov.au/major-projects/assessment/post-approval.*
>
> *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans."*

2 SITE DESCRIPTION

The site is maintained on Lot 1000 DP 1159799, and is bound by the existing operational RPA Hospital to the west, the Centenary Institute to the north, and University of Sydney's Bruce William Pavilion and Susan Wakil Health Building to the east and south respectively. The site is surrounded by various residential, commercial, hospital, university, research and active recreation sensitive receivers generally.

The works maintained within Early Works and Site Establishment pertain specifically to works along Lambie Dew Drive and John Hopkins Drive.

The surrounding affected sensitive receivers that are investigated within the contents of this monitoring assessment are as presented below:

Table 1 – Surrounding Sensitive Receivers

ID No.	Receiver Description	Receiver Category
H1	RPA Hospital Main Building	Hospital
Re1	Centenary Institute	Research Facilities
E1	CreateSpace and Susan Wakil Health Building	Education
E2	Charles Perkins Centre	

See an aerial photo in Figure 1 below for detailed receiver locations.

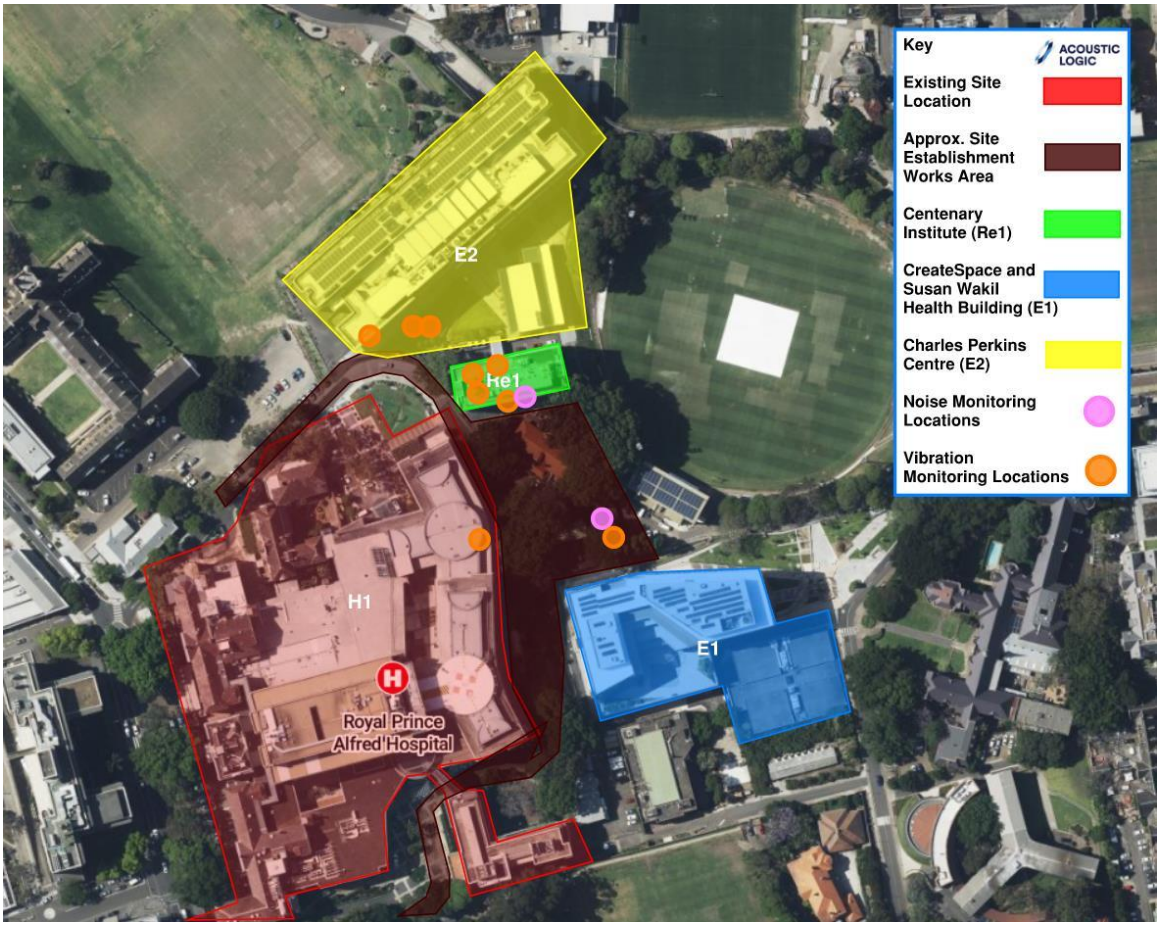


Figure 1: Aerial Site Map with Nearest Sensitive Receivers (Sourced from Sixmaps)

3 NOISE AND VIBRATION MANAGEMENT LEVELS

The following section details the relevant construction noise and vibration requirements assessed throughout the monitoring period.

3.1 NOISE MANAGEMENT LEVELS

Noise Management levels relevant to the contents of this report are summarised in the table below, as provided within the *Early Works Construction Noise and Vibration Management Plan*, prepared for the project by this office (Ref: 20230239.9/0610A/R1/LA). Note that based upon measurements and discussions with relevant stakeholders on 12/03/2024, the Noise Management Level for the Animal Housing, Breeding and Observation Rooms within Centenary Institute will be reduced to 62dB(A) $L_{eq(15\ min)}$, and this will be adopted within this report, as well as further subsequent assessments:

Table 2 – Noise Management Levels

Receiver	Room Usage	Noise Management Level dB(A) $L_{eq(15min)}$
H1	NICU	60 (Internally)
E1 and E2	All	45 (Internally)
R1	Laser Scanning Microscope	58 (Internally)
	Animal Housing / Breeding / Observation Rooms	62 (Internally)
	Rat Operating Room	48 (Internally)

3.2 PROJECT VIBRATION CRITERIA

Relevant project vibration criteria to the contents of this report are provided within the table below. Vibration criteria presented for spaces within Re1 and E2 have been updated based upon the conclusion of the "Baseline Monitoring Results," report, as well as the "Construction Noise and Vibration Monitoring Report 1," both of which were prepared by this office for the project (Ref: 20230239.17/0412A/R1/LA and 20230239.17/2301A/R0/LA). Supplementarily, further correspondence between Charles Perkins Centre and the project team on 20/02/2024 has resulted in the reduction of criteria within the animal spaces on B2 to VC-A criteria, and this is reflected within the table below and has been in effect through this monitoring period:

Table 3 – Summarised Proposed Project Vibration Limits

Receiver	Location	Vibration Criteria (μms^{-1})
Re1 Centenary Institute	L1 Laser Room	VC-B (ASHRAE Handbook) (25 μms^{-1}) RMS Velocity
	L3 Fish Tank Room	400 μms^{-1} Peak Particle Velocity
	L4 – Animal Behaviour / Holding / Breeding Rooms	VC-A (ASHRAE Handbook) (50 μms^{-1}) RMS Velocity
E1 Createspace and Susan Wakil Health Building	All spaces	DIN 4150-3 Type 1 Criteria (20,000 μms^{-1} / 20mms^{-1}) Peak Particle Velocity
E2 Charles Perkins Centre	Imaging Equipment (Southern Wing Corridor)	VC-B (ASHRAE Handbook) (25 μms^{-1}) RMS Velocity
	Animal Behaviour / Holding / Breeding Rooms	VC-A (ASHRAE Handbook) (50 μms^{-1}) RMS Velocity
H1 RPA Hospital Main Building	Operating Theatres (Level 3)	100 μms^{-1} RMS Velocity

4 MONITORING EQUIPMENT AND LOCATIONS

4.1 NOISE MONITORING EQUIPMENT AND LOCATIONS

Unattended noise monitoring was conducting using Acoustic Research Laboratories Pty Ltd noise loggers. The loggers were programmed to store 15-minute statistical noise levels throughout the monitoring period. The equipment was calibrated at the beginning and the end of each measurement using a Rion NC-73 calibrator; no significant drift was detected. All measurements were taken on A-weighted fast response mode.

Three individual noise monitors have been installed surrounding the site at the following locations:

- Centenary Institute Level 4 Surgery (Southern Façade).
- RPA Hospital Main Building – Level 03 NICU.
- Outside Susan Wakil Health Building, on grade.

Please refer to Figure 1 for detailed monitoring locations. Appendix C provides photos of the monitors installed at the project site.

4.2 VIBRATION MONITORING EQUIPMENT AND LOCATIONS

Vibration monitoring was conducted using either Texcel ETM vibration monitors with external Tri-axial Geophones, or Bruel and Kjaer Type 4450 vibration monitors.

Three Texcel ETM monitors have been placed surrounding the site at the following locations:

- Centenary Institute Level 3, Fish Tanks.
- Charles Perkins Centre Level B1, Southern Wing Observation Room E (Note that this monitor has been installed at this location to send alert messages at 100 μms^{-1} PPV vibration events, due to the limited reception achieved within the B2 area from the Bruel and Kjaer Type 4450 monitor installed to assess vibration impacts with respect to the VC-A vibration criteria curve within the animal holding area.
- Outside Susan Wakil Health Building, on grade.

Additionally, six Bruel and Kjaer Type 4450 Vibration monitors have been installed surrounding the site at the following locations:

- Centenary Institute:
    - Level 1 Laser Imaging Room (Western façade electrical cupboard) (up until 25/04/2024).
    - Level 4 Surgery (Southern Façade).
    - Level 4 Change Rooms (Northern Façade)
    - Level 4 South-eastern Experimentation Room (From the 25/04/2024 onwards).
- Charles Perkins Centre:
    - Level B1, Southern Wing Corridor.
    - Level B1, Southern Wing Observation Room E
- RPA Hospital Main Building Level 3 NICU.

Please refer to Figure 1 for detailed monitoring locations.

5 RESULTS

Appendix A presents the results of the noise monitoring, whilst Appendix B presents the results of the vibration monitoring where exceedances occurred during the monitoring period as presented within the contents of this report.

A discussion pertaining the findings of the noise and vibration monitoring undertaken during this monitoring period is provided within the proceeding sections.

5.1 NOISE MONITOING RESULTS DISCUSSION

Noise monitoring conducted throughout the monitoring period shows general adherence to the noise management levels provided within Section 3 of this letter.

For the Surgery Room Noise Management Level

- Measured noise levels were observed to be above the surgery room noise management level on the following dates during periods of construction:
    - 18/03/2024.
    - 19/03/2024.
    - 20/03/2024.
    - 21/03/2024.
    - 22/03/2024.
    - 25/03/2024.
    - 26/03/2024.
    - 27/03/2024.
- Generally, measured noise levels above the noise management levels within the operating room were observed for short periods of time before returning to below the noise management level ($\leq$1.5 hr). Within the monitoring period, the longest sustained period whereby the recorded noise levels were found to be above the surgery room noise management level was for 2.5 hours on 26/03/2024.
- Noise levels are continuing to be observed and monitored to ensure ongoing adherence with the requirements of Section 3.1.

For the Holding, Breeding and Observation Rooms

- Noise levels were not found to be above the NML for holding, breeding and observation rooms throughout the monitoring period.

For RPAH Main Building L03 NICU

- The monitor is located underneath a benchtop and against two individual walls within the NICU area on Level 03 of the hospital main building. Due to the reflections experienced at the monitoring location due to this, a 5dB correction has been conservatively applied to the noise levels measured at the monitoring station.
- Noise levels were observed to be measured above the NML within the NICU space for one 15-minute period on 28/03/2024. All other measured levels above the NML have been found to occur outside of construction hours.
- Ongoing monitoring to continue within the NICU space.

For the Susan Wakil Health Building

- The monitor located outside of the Susan Wakil Health Building is within the demolition site boundary and approximately 15m closer to the area of the works than the façade of the Susan Wakil Health Building.
- Noting this increased distance attenuation, in conjunction with the transmission loss experienced through the inoperable façade of the Susan Wakil Health Building when comparing internal and external noise levels, Acoustic Logic expect that, at minimum, there is a 30dB reduction between the measured noise levels by the monitor, when compared with the resultant internal noise levels within the receiver.
- This reduction is considered conservative due to the distance between the monitor and the building, and hence, the noise impacts would be further reduced than what is outlined below in reality.
- Notwithstanding, and based on this reduction, measured noise levels which have been attributed to construction activity were observed to be above the noise management level on the following dates:
    - 19/03/2024.
    - 21/03/2024.
    - 22/03/2024.
    - 25/03/2024.
    - 28/03/2024.
- Generally, noise levels were observed to be above noise management levels for short periods ($\leq$ 45 min) before reducing to be in line with internal noise objectives.
- Noise levels impacting Susan Wakil will be continued to be monitored throughout the early works construction to assess the impact of this receiver.

5.2 VIBRATION MONITORING RESULTS DISCUSSION

With regards to the vibration measured vibration levels during the monitoring period, we note the following:

- Note that the graphs presented within the Appendix of this document show the maximum recorded velocity for each individual frequency within a given day's monitoring period.
- Data has only been provided for days in which exceedances attributed to vibration works have been experienced at the monitoring station.
- The following matrix presents the dates and times within the monitoring period whereby exceedances have been recorded concurrently by multiple monitoring stations surrounding the construction area and have been attributed to construction activity. Note that the vibration monitor at Susan Wakil Health Building has been excluded from the matrix, due to the much higher vibration criteria when compared with all other vibration monitoring locations:

Table 4 – Measured Correlated Vibration Exceedances

Date of Correlated Exceedance Event	Time of Correlated Exceedance Event	Measured Maximum Exceedance?						
		Centenary Institute				Charles Perkins Centre		RPA Hospital Main Building
		L1 Laser Room (Electrical Cupboard)	L3 Fish Tanks	L4 Surgery (South)	L4 Bathroom (North)	Southern Wing Corridor (Imaging)	Southern Wing Observation Room E (Animals)	NICU
19/03/2024	7:30am	250μms^{-1} @ 25Hz		85μms^{-1} @ 20Hz		30μms^{-1} @ 25Hz*		
	8:30am	134μms^{-1} @ 25Hz				45μms^{-1} @ 20Hz		
	9:40am	53μms^{-1} @ 25Hz				50μms^{-1} @ 12.5Hz		
21/03/2024	9:15am	52μms^{-1} @ 40Hz				46μms^{-1} @ 16Hz		
	10:45am	89μms^{-1} @ 25Hz		No		38μms^{-1} @ 20Hz		
	1:00pm	102μms^{-1} @ 31.5Hz				32μms^{-1} @ 16Hz		
25/03/2024	8:00am	111μms^{-1} @ 25Hz				61μms^{-1} @ 20Hz		
	11:30am	125μms^{-1} @ 63Hz				31μms^{-1} @ 20Hz		

**This measured level considered to be a marginal exceedance of criteria (≤20% above criteria at respective frequency).*

- Incidents which are shown to result in exceedances of criteria at multiple monitoring locations currently would be considered to be caused by extraneous vibration generating activity, such as construction works.
- Through correlating exceedance events and the construction activity on site, it was established during this monitoring period that the detailed excavation works along John Hopkins Drive and Lambie Dew Drive have resulted in measured exceedances within both Centenary Institute L1 as well as Charles Perkins Centre B2 for the imaging equipment.
- Alternative construction methodologies have been explored where feasible, and reductions in generated vibration levels have been observed when alternative construction methodology has been implemented.
- Further, works along John Hopkins Drive, as well as the demolition of the ramp, specifically where alternative construction methodologies are not feasible, have implemented breaks within works to help control the impacts of vibration on surrounding receivers, such as implementing hammering for 5-second on off cycles.
- In conjunction to the above dates, the following dates have had exceedances observed at individual monitoring locations:
- Centenary Institute:
    - Level 1 – Laser Imaging Room (Electrical Cupboard):
        - Supplementary to the measurements presented within Table 4, exceedances of L1 VC-B criteria which display characteristics consistent with construction activity were observed on the following dates:
            - 18/03/2024 - 8.00am, 1.30p, and 3.00pm.
            - 19/03/2024 – 1:30pm, 2.15pm, 2.45pm and 3.00pm.
            - 20/03/2024 – 7.30am and 8.00am.
            - 21/03/2024 – 10.15am, 1.30pm and 3.00pm.
            - 22/03/2024 – 7.00am, 8.30am, 12.00pm and 1.00pm.
            - 25/03/2024 – 1.30pm.
        - Exceedances due to construction activity are generally observed to result at up to a maximum of 300% of the VC-B criteria at a given frequency (Approximately measured at 100μms^{-1}). The maximum level measured during the monitoring period attributed to construction activity was 250μms^{-1} at 25Hz on 19/03/2024.
        - With regards to the vibration impacts on this area, we note the following:
            - Precision imaging equipment such as the laser scanning apparatus investigated by this monitoring station are impacted by vibration through impacts on output results.
            - This would hence be observed by operators of the equipment, whereby the system would not be operating correctly/results of the system would be impacted.
            - To the knowledge of this office, no impacts on the results output of the equipment have been reported by Centenary Institute throughout the early works construction period.
            - Further, and based upon onsite inspections and testing, AL note that the Laser room is subject to various sources of ambient vibration from the operation of the

facility which contribute to the levels measured during construction, inclusive of refrigerant plant maintained within the basement of the facility.

- Where any changes to the operation / results of the laser scanning apparatus are observed by the operators of the equipment, this is to be relayed to this office for investigation and alignment with construction activity to appropriately assess and mitigate impacts.

- Level 3 – Fish Tanks:
  - No exceedances of criteria were observed within the monitoring period which have been attributed to construction activity.
- Level 4 – Surgery Room (Southern Façade) and Bathroom (Northern Façade):
  - One exceedance was measured on the 19/03 at the surgery room monitor that has been attributed to the construction works occurring on site and was correlated with other exceedances. This exceedance was measured at 7.31am, and was measured at 85 μms^{-1} at 20Hz (Approximately a 70% exceedance of criteria).
  - This exceedance has been attributed to the construction activity on site due to the correlation of the measurement with exceedances measured at other locations around the project site.
  - Based upon the discussion provided by the contractor at the time of the exceedance, it is noted that works were generally limited to tracking of an excavator close to the western façade of Centenary along Lambie Dew Drive.
  - No other exceedances were observed throughout the monitoring period at either monitor location.

- Charles Perkins Centre:
  - Southern Corridor (Imaging):
    - Supplementary to the measurements presented within Table 4, exceedances of B2 VC-B criteria which display characteristics consistent with construction activity were observed at the monitoring station on the following dates:
      - 20/03/2024 – 9.00am and 12.30pm.
      - 21/03/2024 – 3.00pm.
      - 25/03/2024 – 7.30am, 8.45am and 1.00pm.
      - 26/03/2024 – 10.00am.
      - 27/03/2024 – 9.15am, 1.00pm, 4.30pm.
      - 28/03/2024 – 10.00am.
    - Exceedances are generally observed to result at up to a maximum of 150% of the VC-B criteria at a given frequency (Approximately measured at 62.5μms^{-1}). The maximum level measured during the monitoring period was 66μms^{-1} at 12.5Hz on 27/03/2024.
    - It is prudent to note that, whilst significant and continued spiking was observed throughout the monitoring period at the monitoring station, few of these spikes were found to correlate with exceedances measured at other surrounding vibration monitoring locations.

        - Exceedances are generally observed at 12.5Hz, likely to be the natural frequency of the CPC suspended slab. Exceedances at frequencies exclusive of 12.5Hz, 16Hz and 20Hz are rarely observed.
        - With regards to the monitoring period within the CPC Basement, we note the following:
            - For most of the observed correlated exceedances throughout the monitoring period, measured levels within the CPC basement southern wing are lower than those measured by the monitors within Centenary Institute.
            - Of all of the correlated events, there are no events within the monitoring period whereby a correlated exceedance was measured to be higher at CPC B2 than at Centenary Institute.
            - Throughout the monitoring period, works have been generally restricted to two main areas:
                - Demolition within the pathology demolition area, and
                - Detailed excavation undertaken along John Hopkins Drive / Lambie Dew Drive.
            - It is expected that any works undertaken within the pathology demolition area would be measured to be higher at monitors installed within Centenary Institute than at CPC, noting that these works are being undertaken close to the Centenary boundary.
            - It is likely that the detailed excavation works along John Hopkins Drive result in levels which are higher at CPC than those at Centenary Institute, and this is observed within the results.
            - Further, as B2 is maintained on suspended slab, it is possible that significant amplification of the vibration impacts from these works is occurring and resulting in exceedances at the monitoring location.
            - Notwithstanding, and due to the lack of correlation between the significant spikes measured by the B2 monitor and exceedances at other monitoring stations surrounding the project site, it is likely that some or most of these spikes have been caused by factors exclusive of the construction activity within the RPA Hospital project area.
            - It is prudent to note that CPC is undergoing a façade refurbishment exclusive to the scope of the construction activity assessed within this report, and it is likely that these works attributed to some of the exceedances observed throughout the period.
    - Observation Room E (Adjoining corridor):
        - No exceedances were observed of the VC-A criteria within the animal holding spaces at the monitoring location.
- RPA Hospital Main Building:
    - Level 03 NICU:
        - No exceedances have been measured at this monitoring throughout the monitoring period.
- Susan Wakil Health Building:

- Due to battery depletion with the monitor, and being unable to access the monitor location due to asbestos control on site, the monitor was switched off for the duration of the monitoring period and no results have been collated during this period.
- Collating data was continued on 08/04 when access was available to the monitoring location.

6 CONCLUSION

Noise and vibration monitoring has been conducted by Acoustic Logic for the Early Works being undertaken for SSD-47662959, the RPA Hospital Redevelopment, located at 50 Missenden Road, Camperdown.

This letter presents the results of the monitoring between the period of Monday 18th March, 2024 and Sunday 31st March, 2024.

Monitoring results have been provided with reference to the Noise and Vibration Management Levels established within the *Early Works Construction Noise and Vibration Management Plan*, prepared by this office, or as they have been updated throughout the construction process, specifically pertaining to the recommendations of the *Baseline Monitoring Results* and *Construction Noise and Vibration Monitoring Report 1*, both also prepared by this office (Ref: 20230239.9/0610A/R1/LA, 20230239.17/0412A/R1/LA and 20230239.17/2301A/R0/LA).

Noise monitoring results have been provided within Appendix A, whilst vibration monitoring results have been provided throughout Appendix B of this letter.

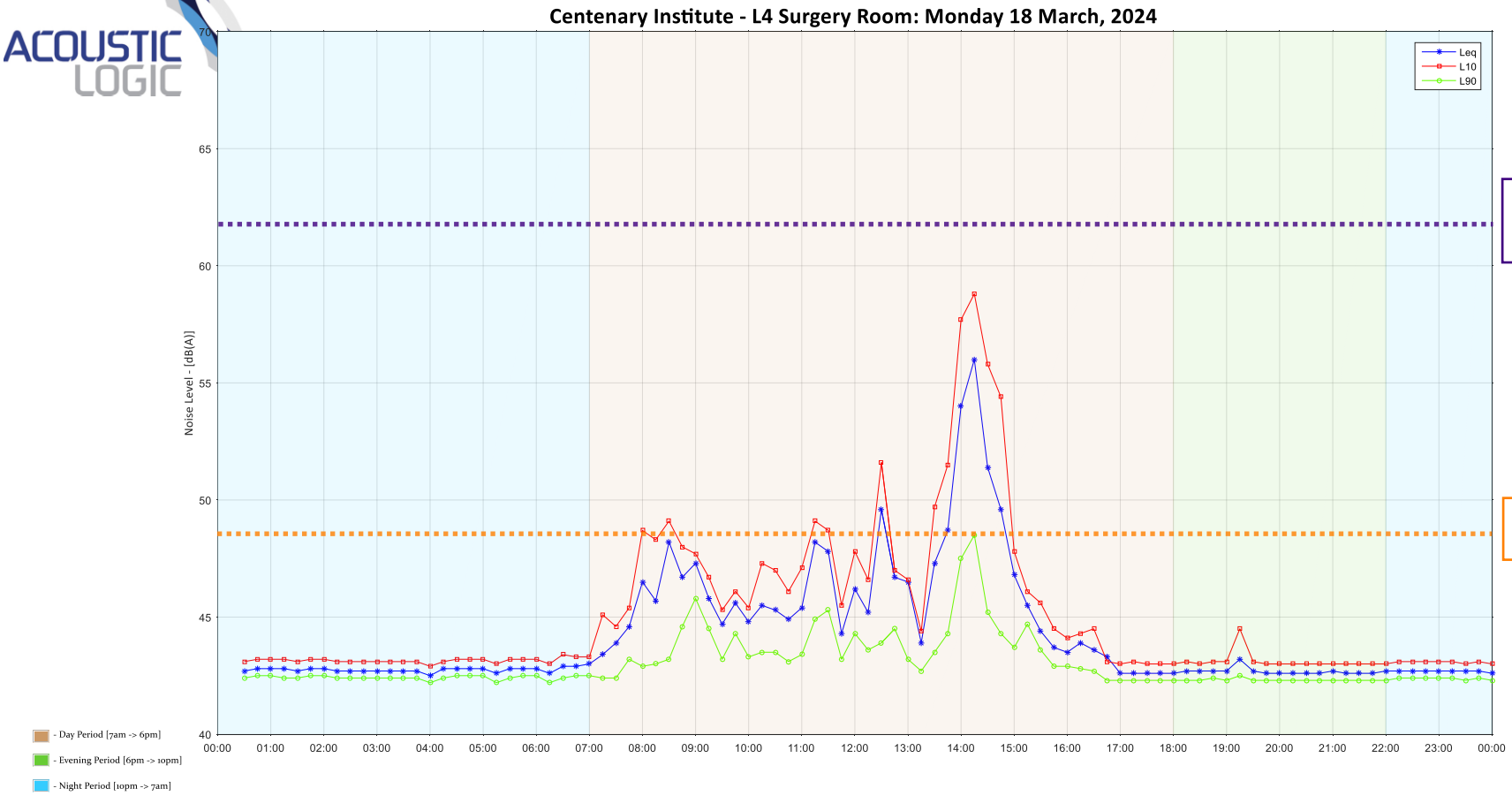
We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd
Lachlan Abood

APPENDIX A – NOISE MONITORING RESULTS

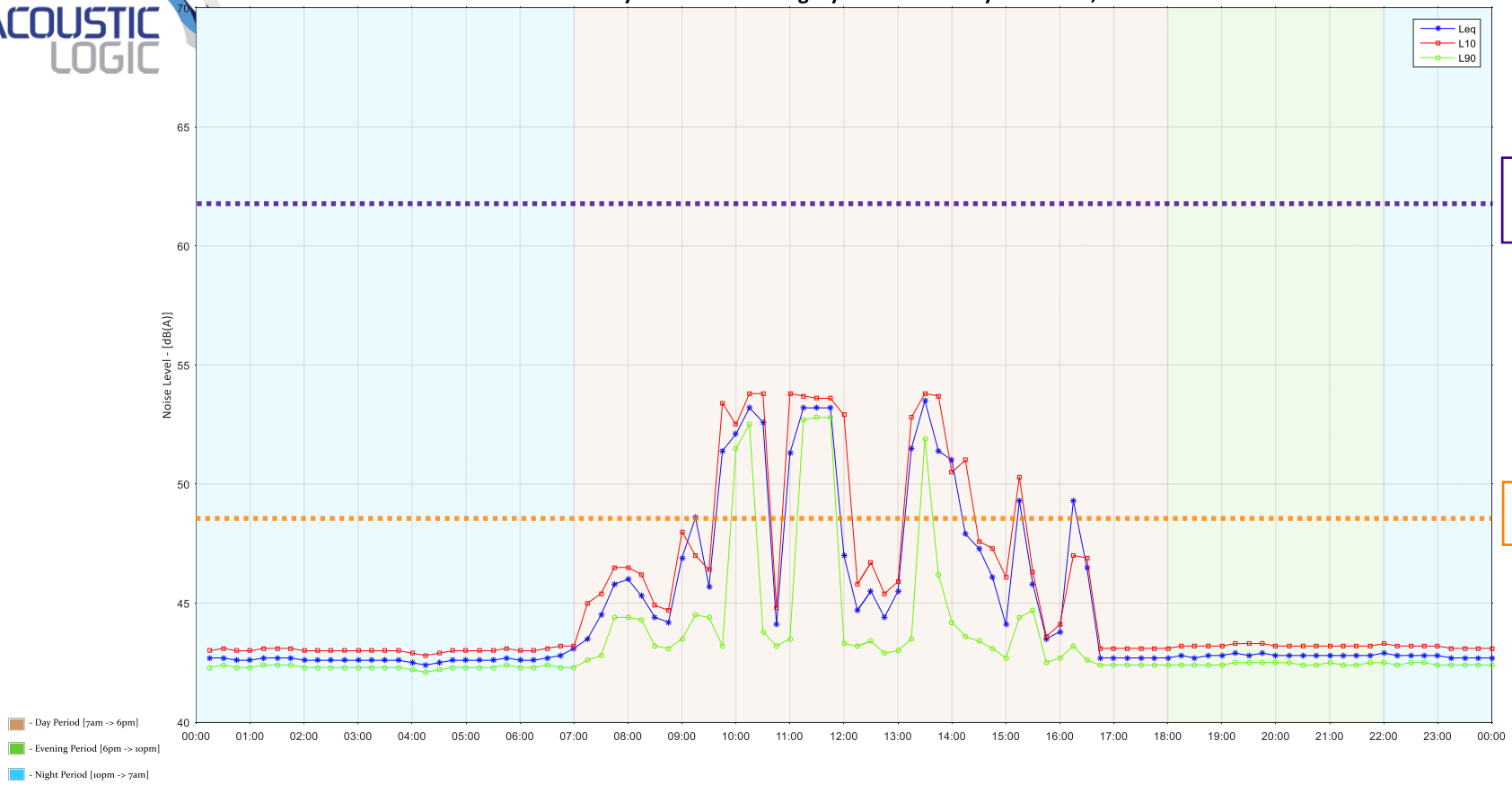
CENTENARY INSTITUTE – LEVEL 4 SURGERY ROOM (SOUTHERN FAÇADE)



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

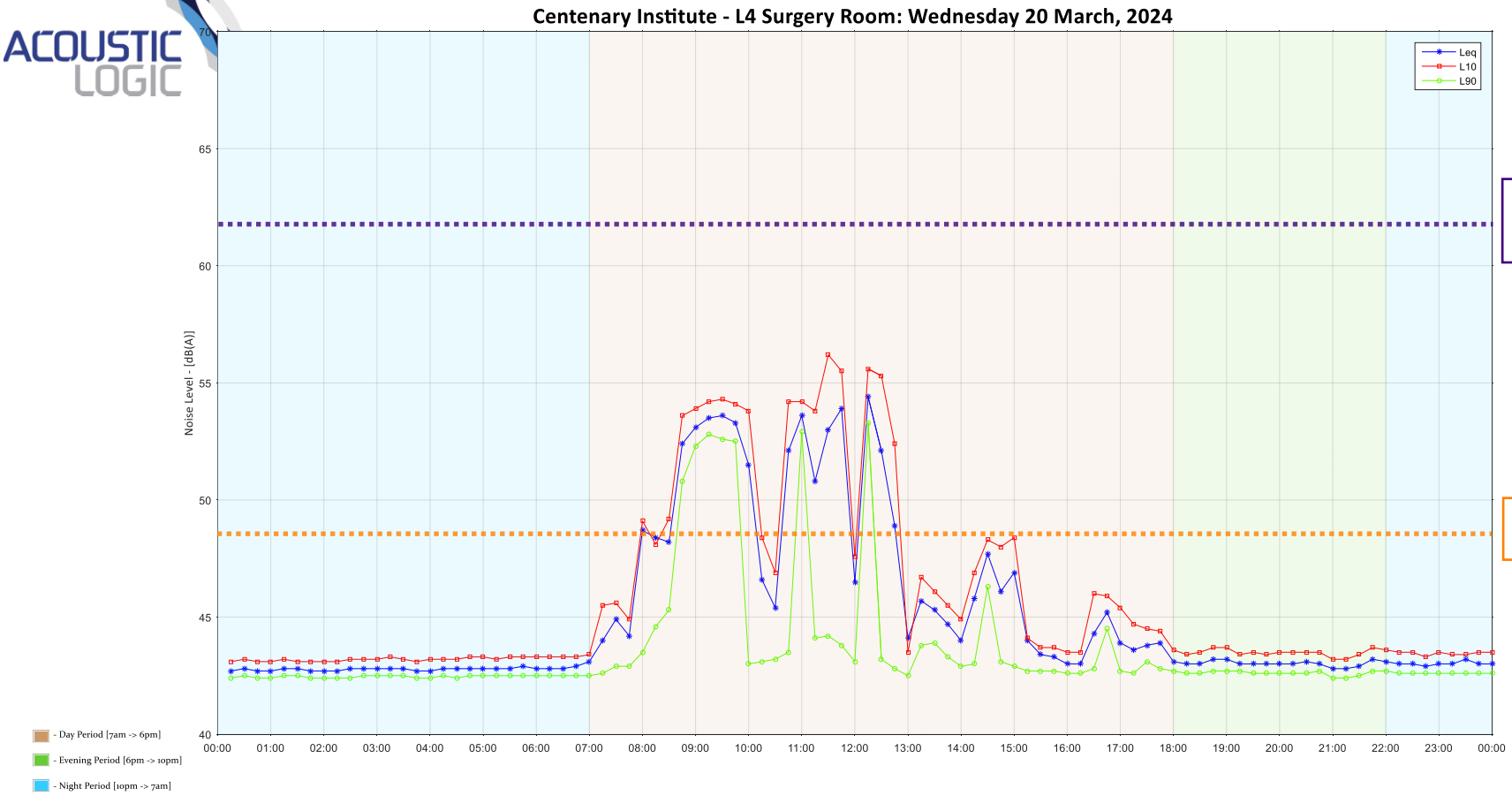
Animal Operating Room NML
≤ 48dB(A)L_{eq}

Centenary Institute - L4 Surgery Room: Tuesday 19 March, 2024



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

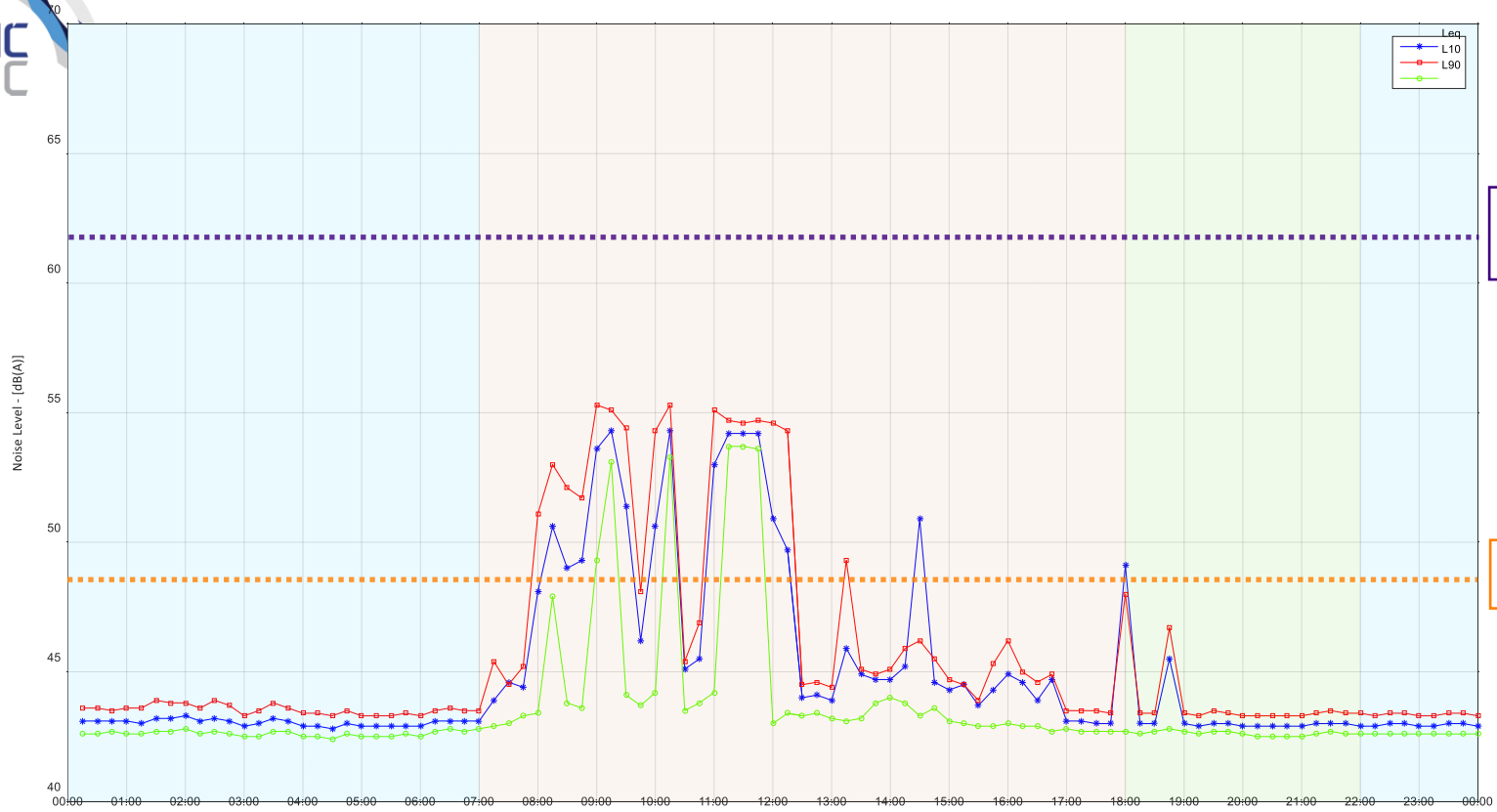
Animal Operating Room NML
≤ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

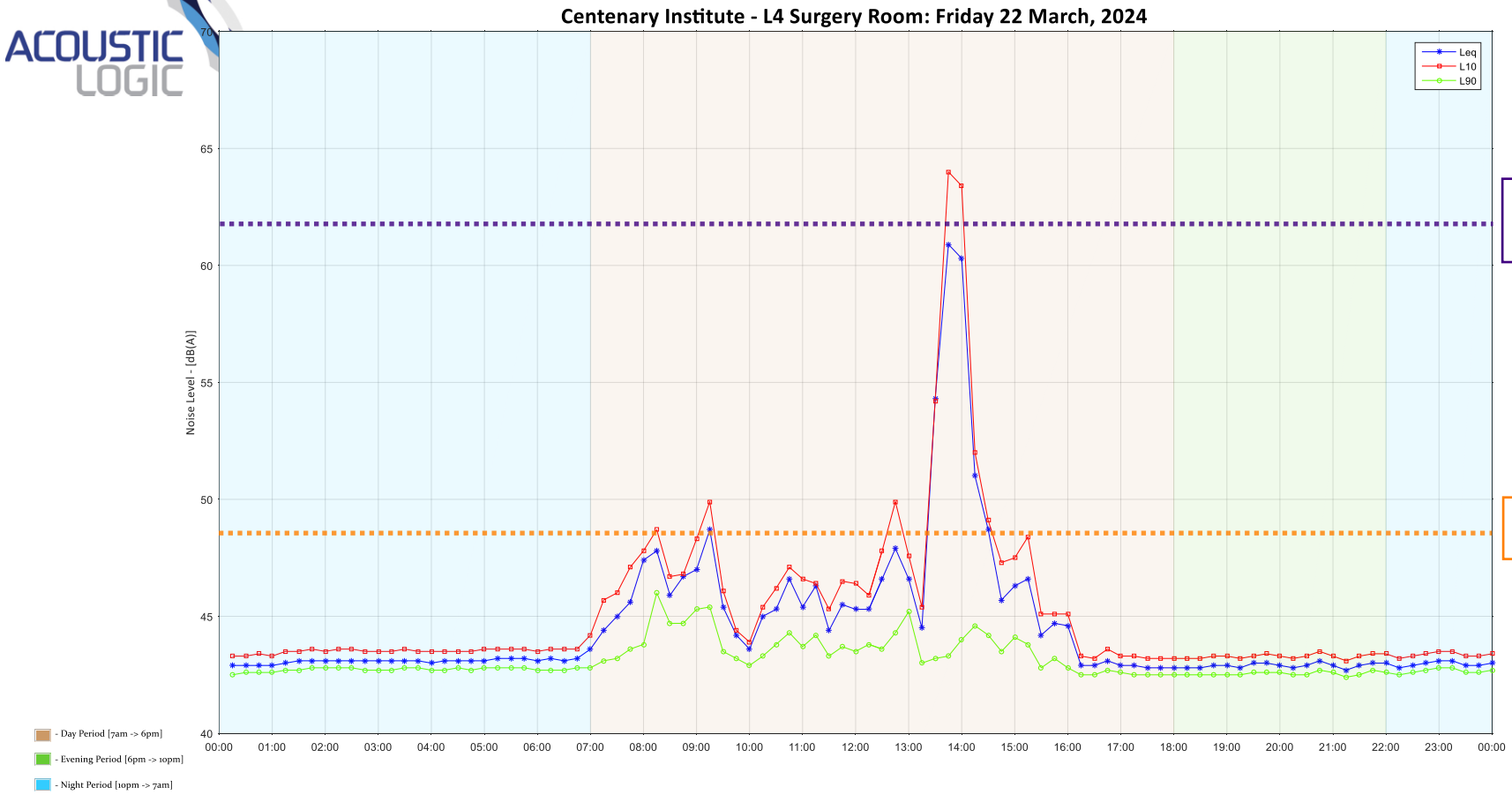
Animal Operating Room NML
≤ 48dB(A)L_{eq}

Centenary Institute - L4 Surgery Room: Thursday 21 March, 2024



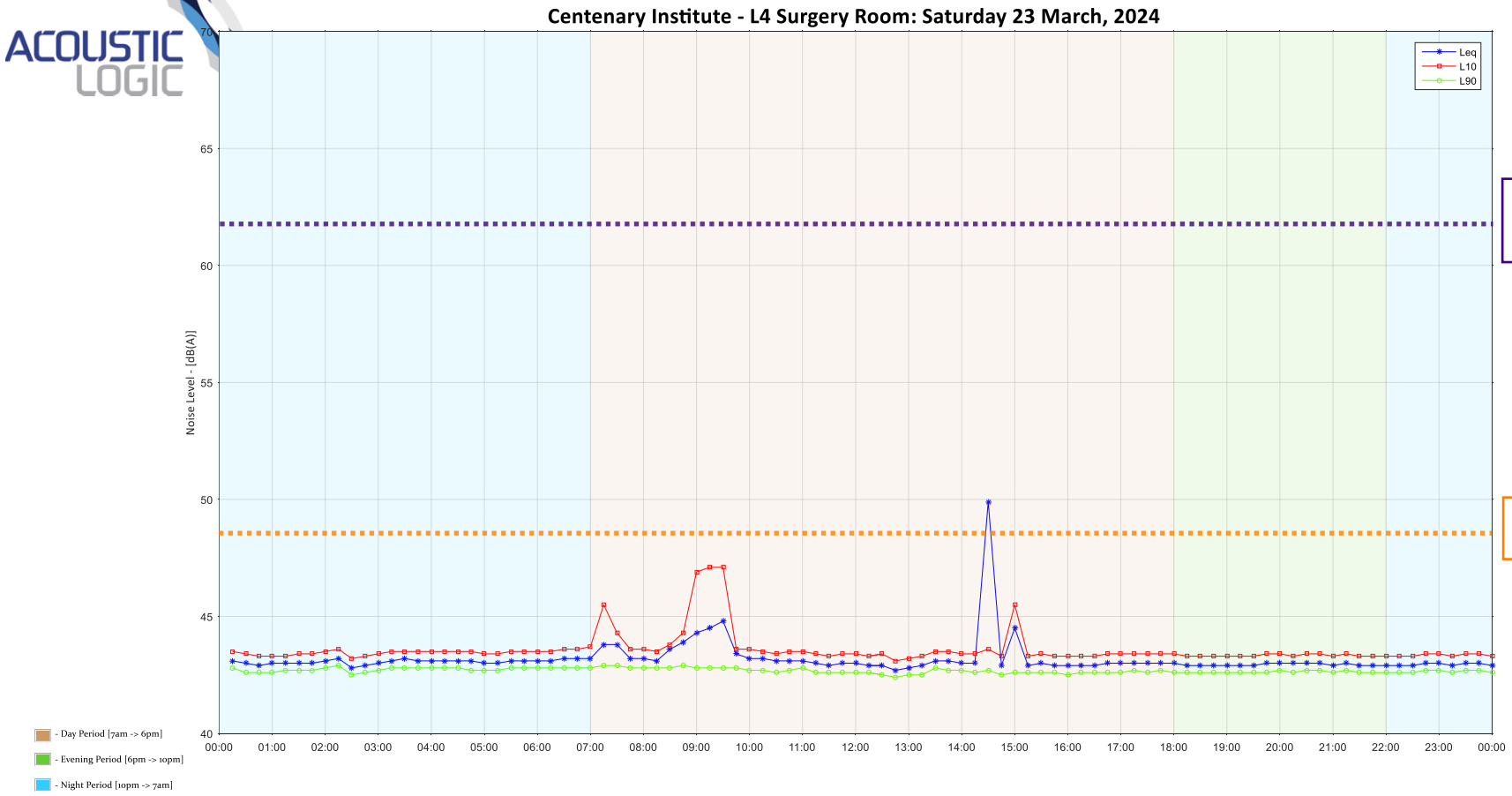
Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}



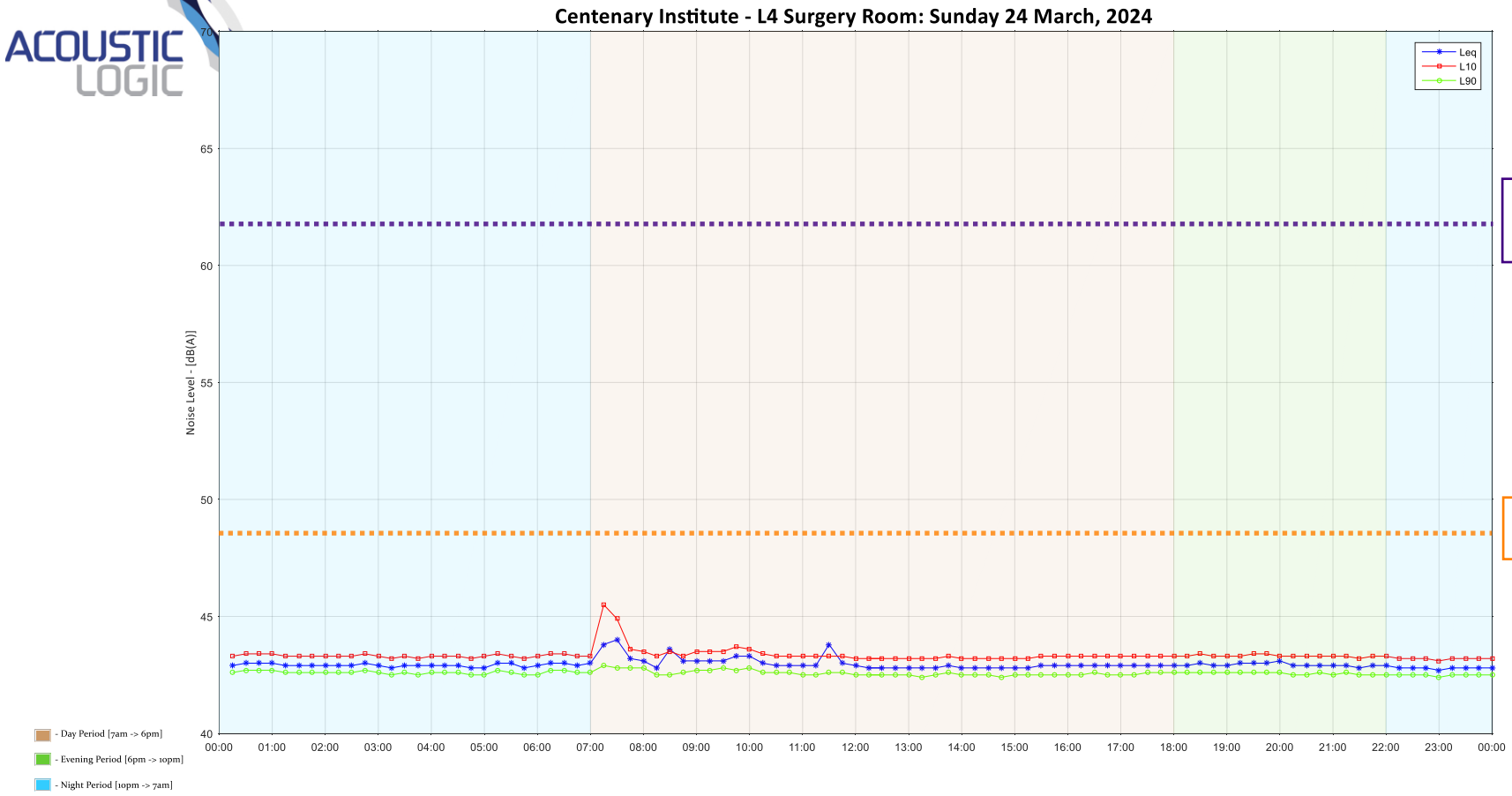
Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
$\leq$ 62dB(A)L_{eq}

Animal Operating Room NML
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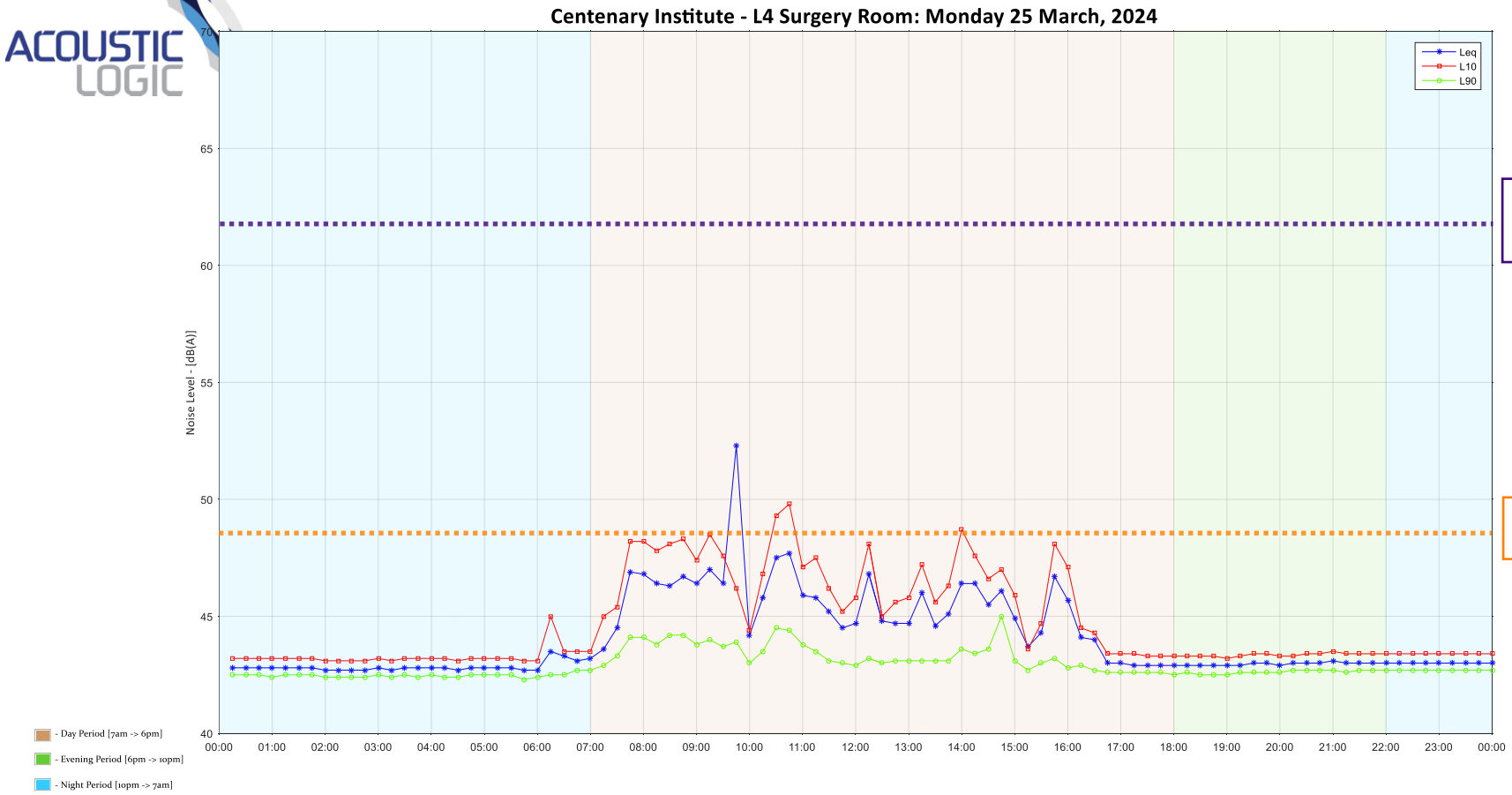
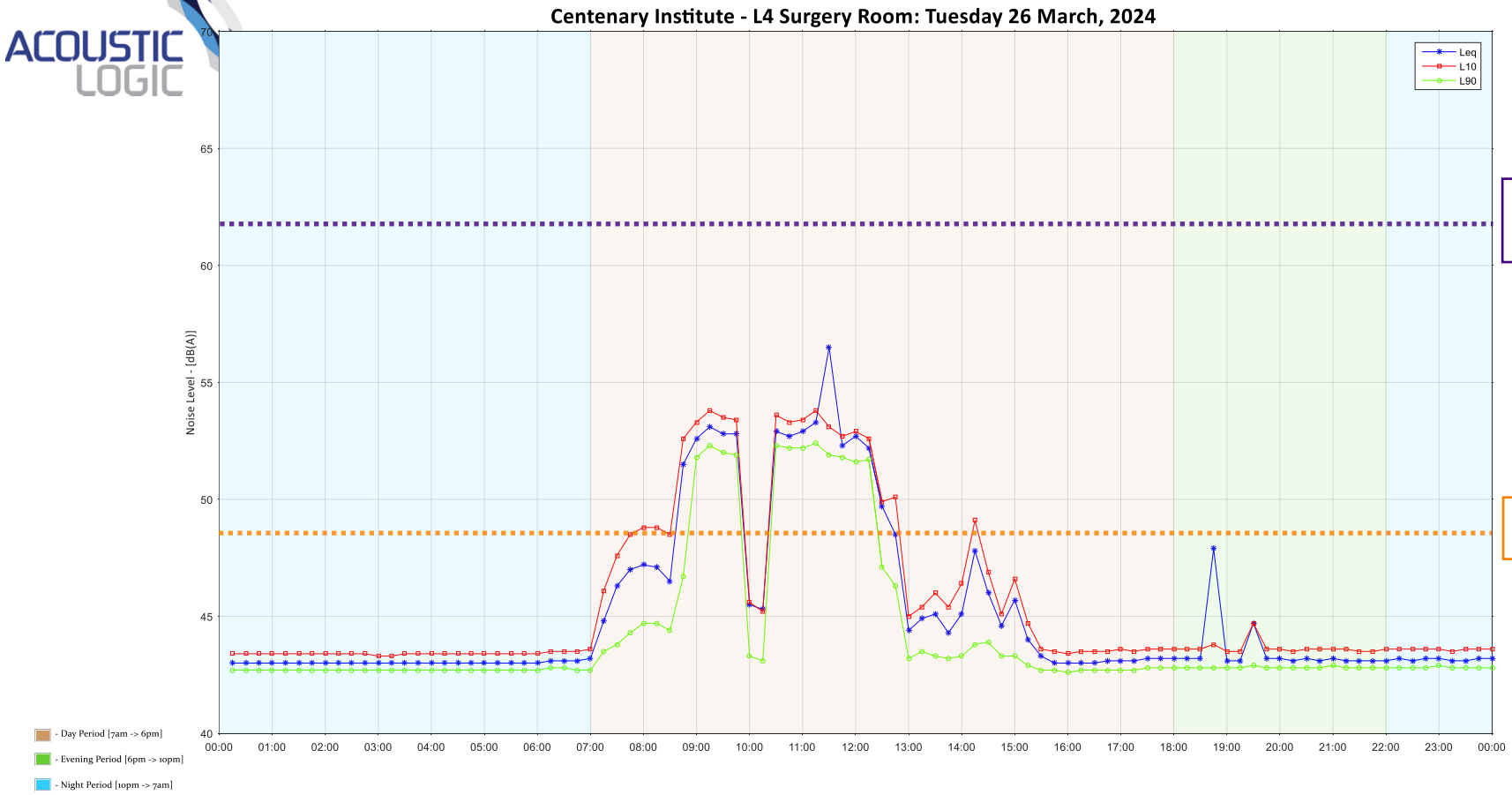


Animal Housing / Breeding / Observation Room NML
$\leq$ 62dB(A)L_{eq}

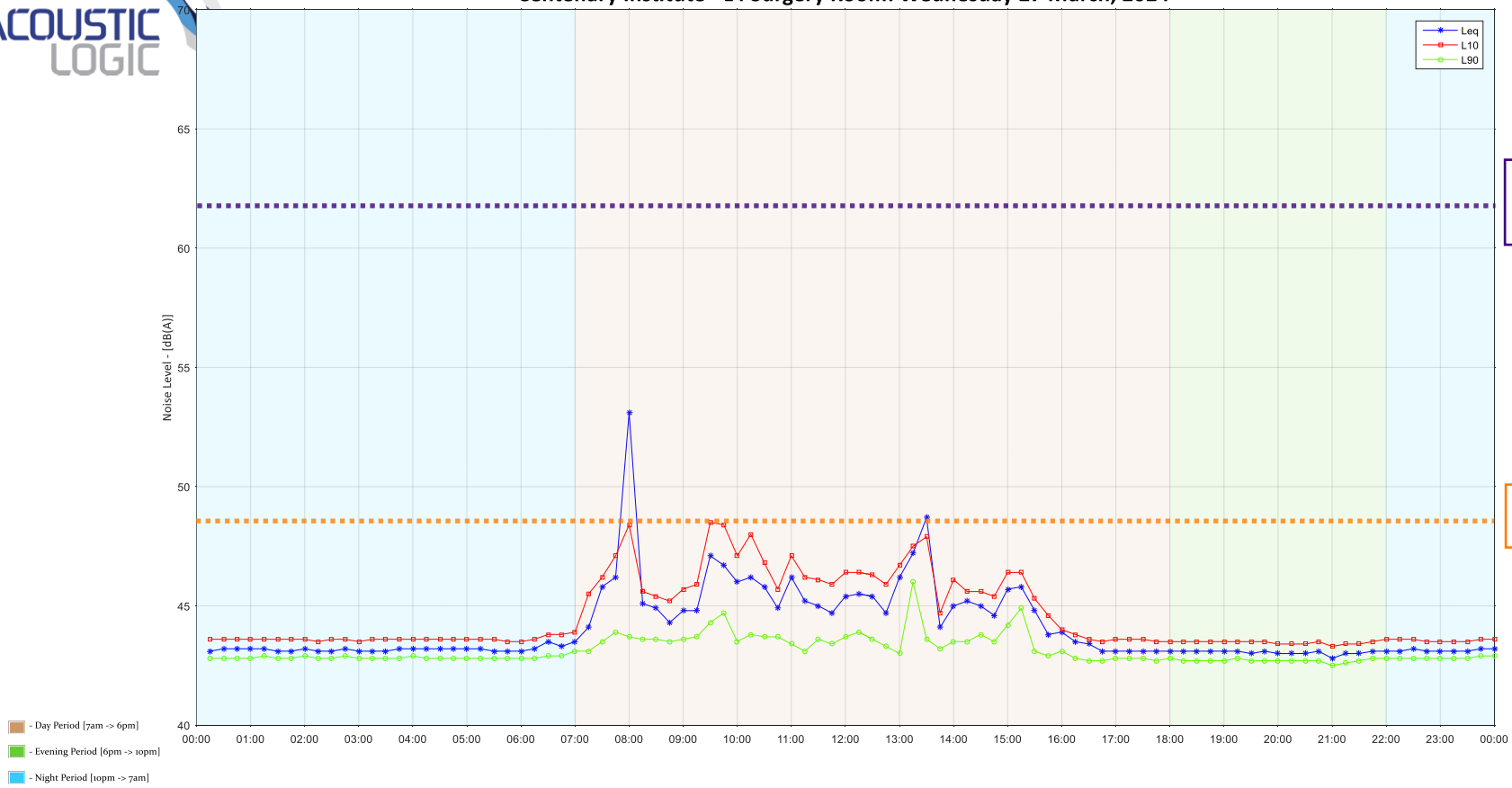
Animal Operating Room NML
$\leq$ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}

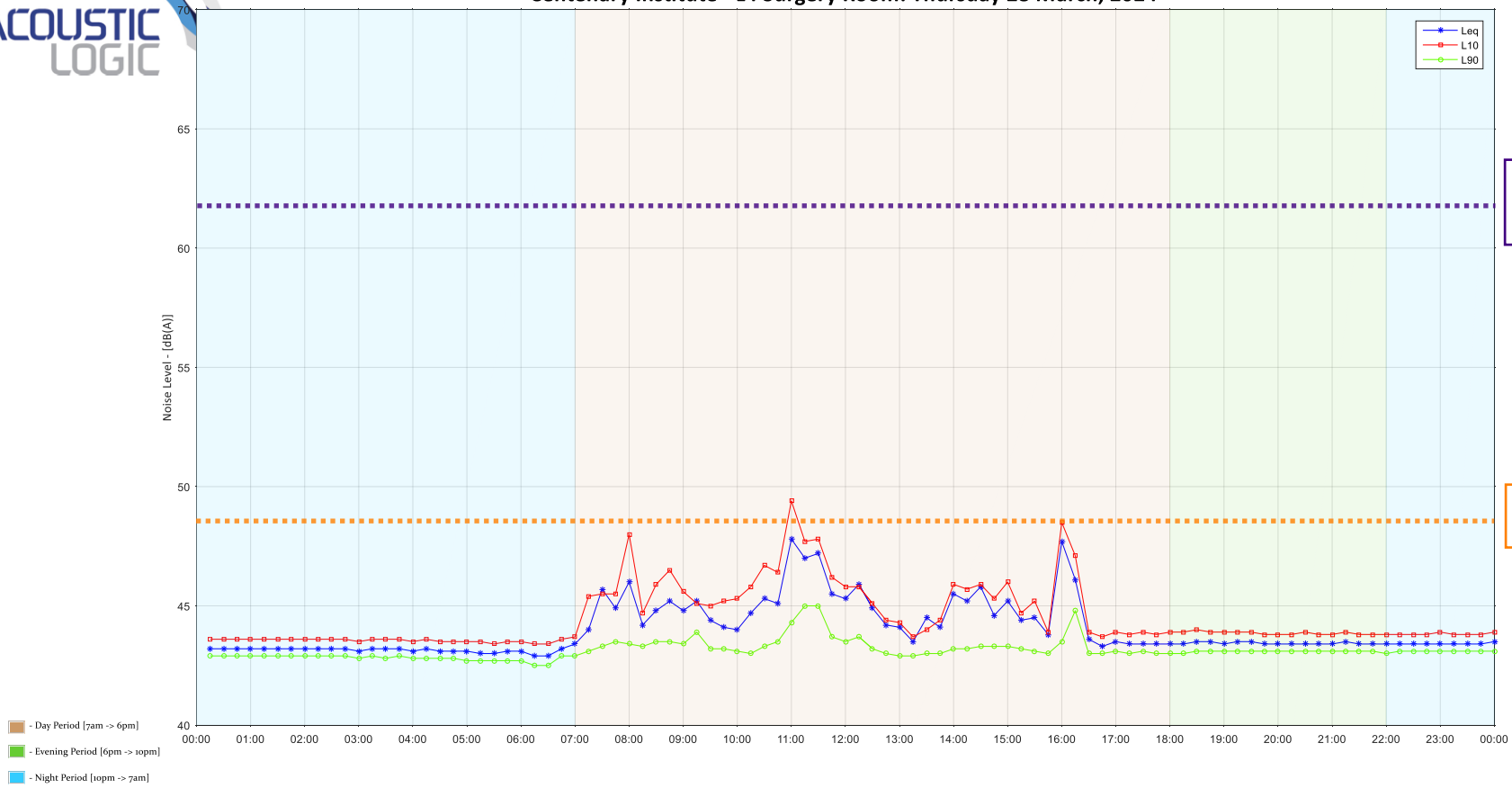
Centenary Institute - L4 Surgery Room: Wednesday 27 March, 2024



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

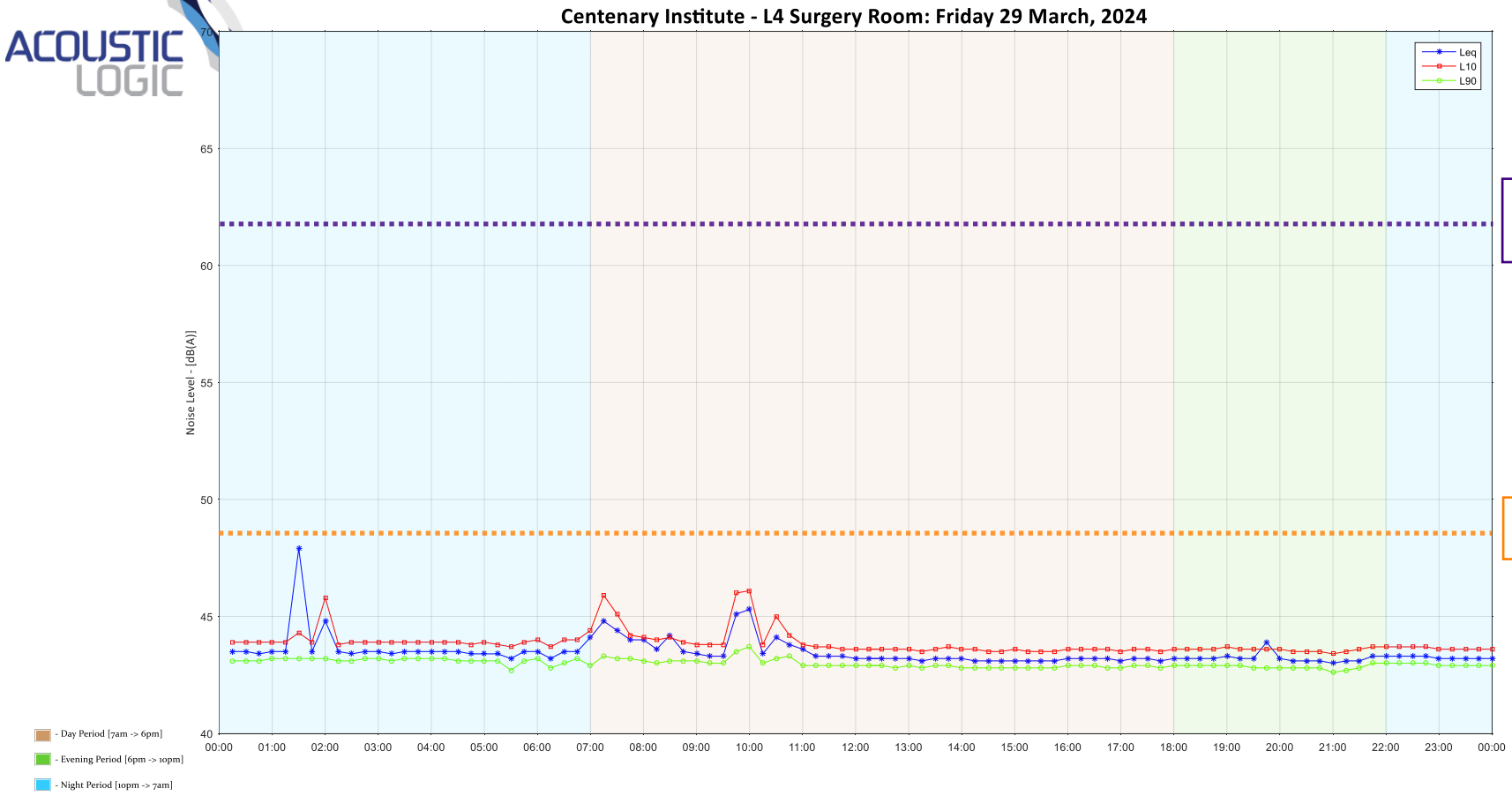
Animal Operating Room NML
≤ 48dB(A)L_{eq}

Centenary Institute - L4 Surgery Room: Thursday 28 March, 2024



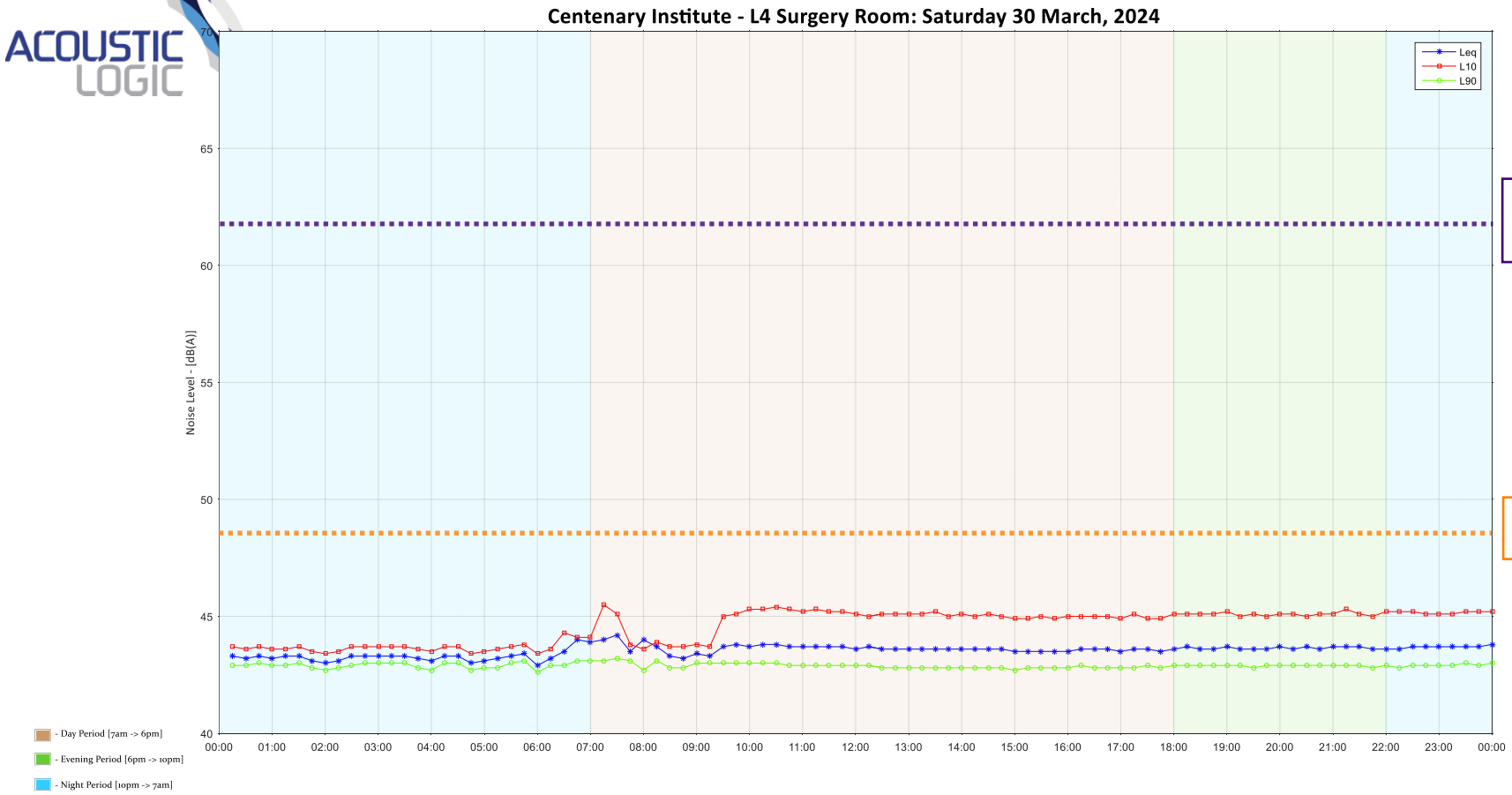
Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}



Animal Housing / Breeding / Observation Room NML
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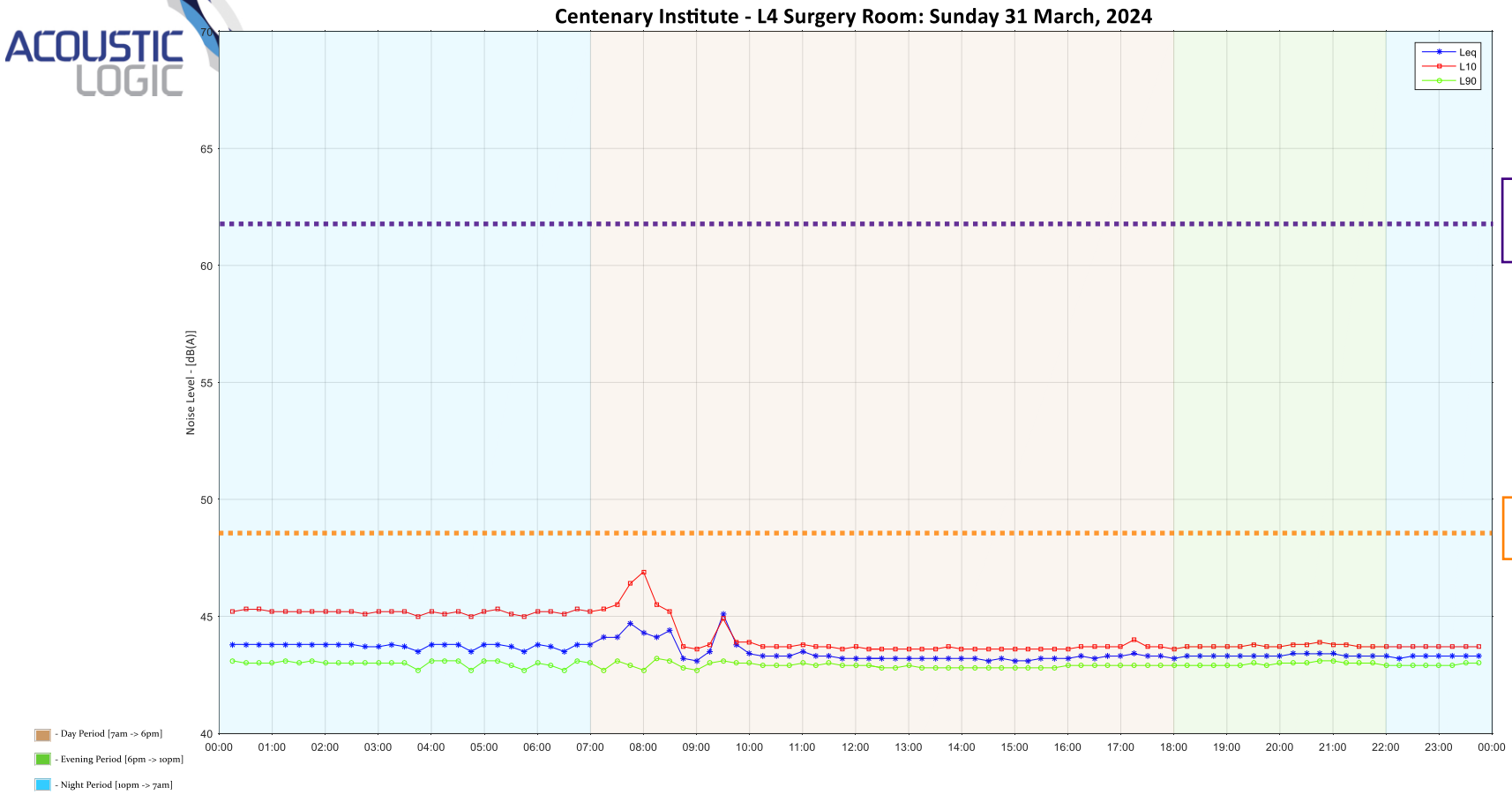
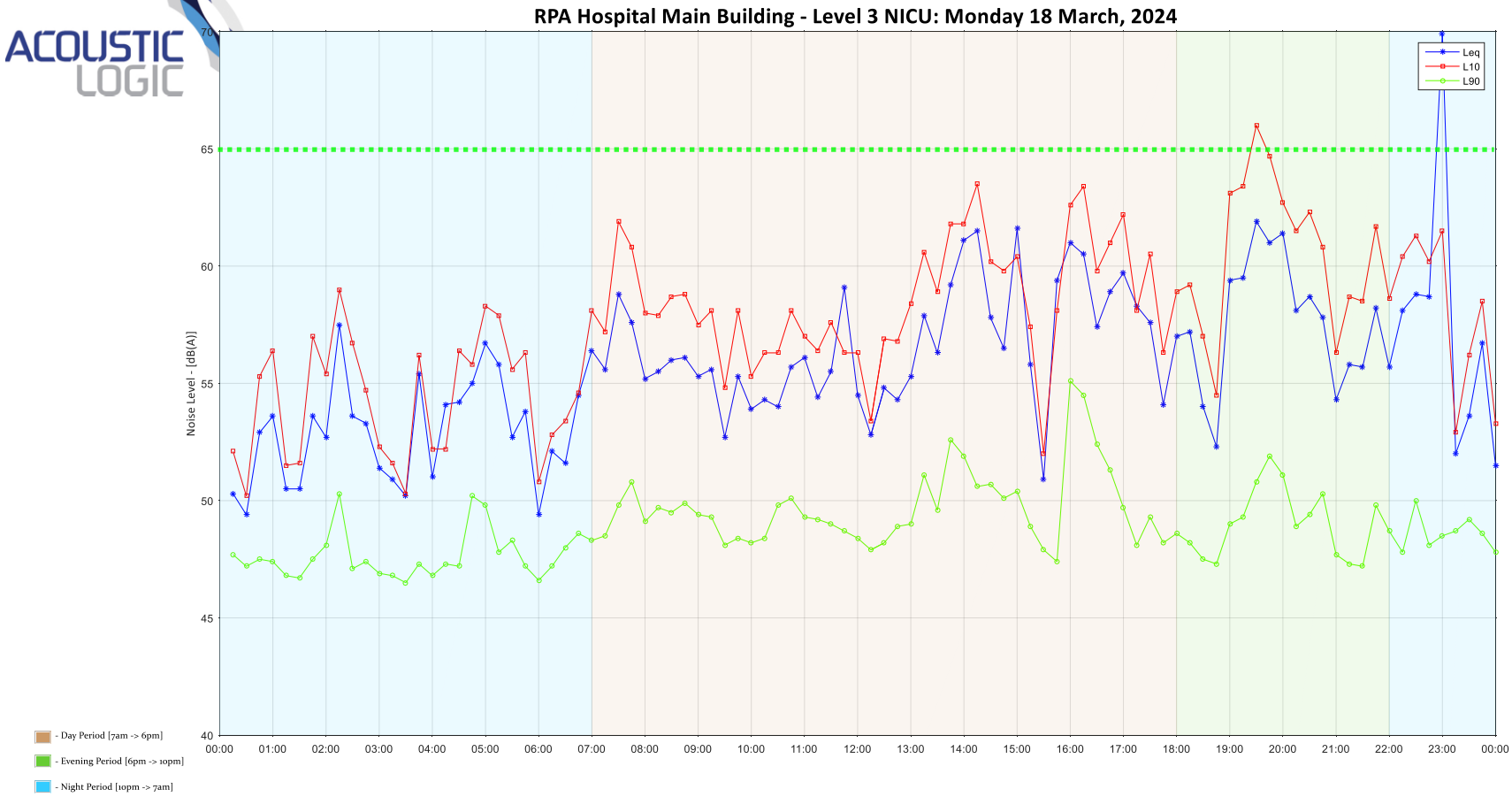
Animal Operating Room NML
≤ 48dB(A)L_{eq}



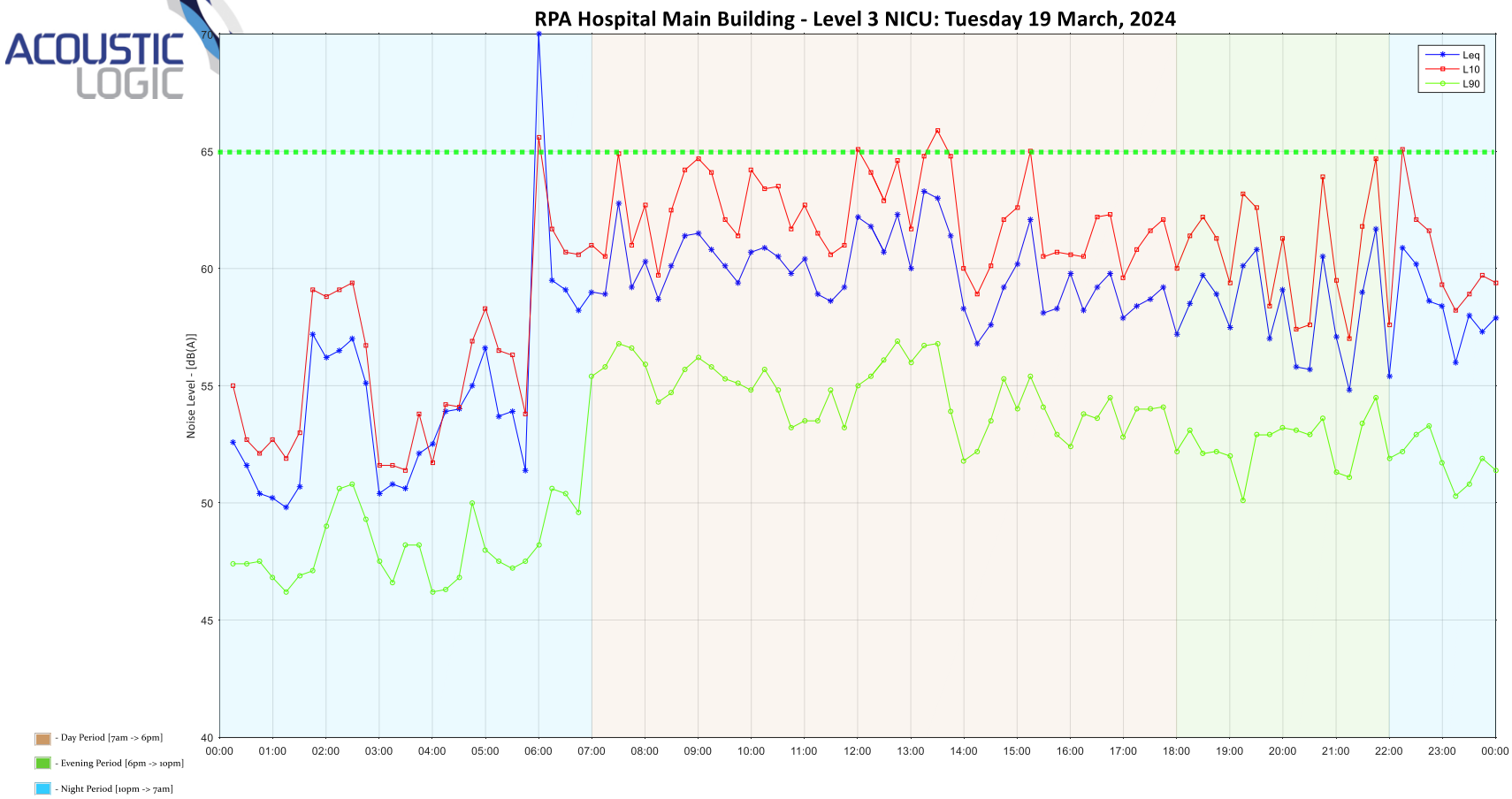
Animal Housing / Breeding / Observation Room NML
≤ 62dB(A)L_{eq}

Animal Operating Room NML
≤ 48dB(A)L_{eq}

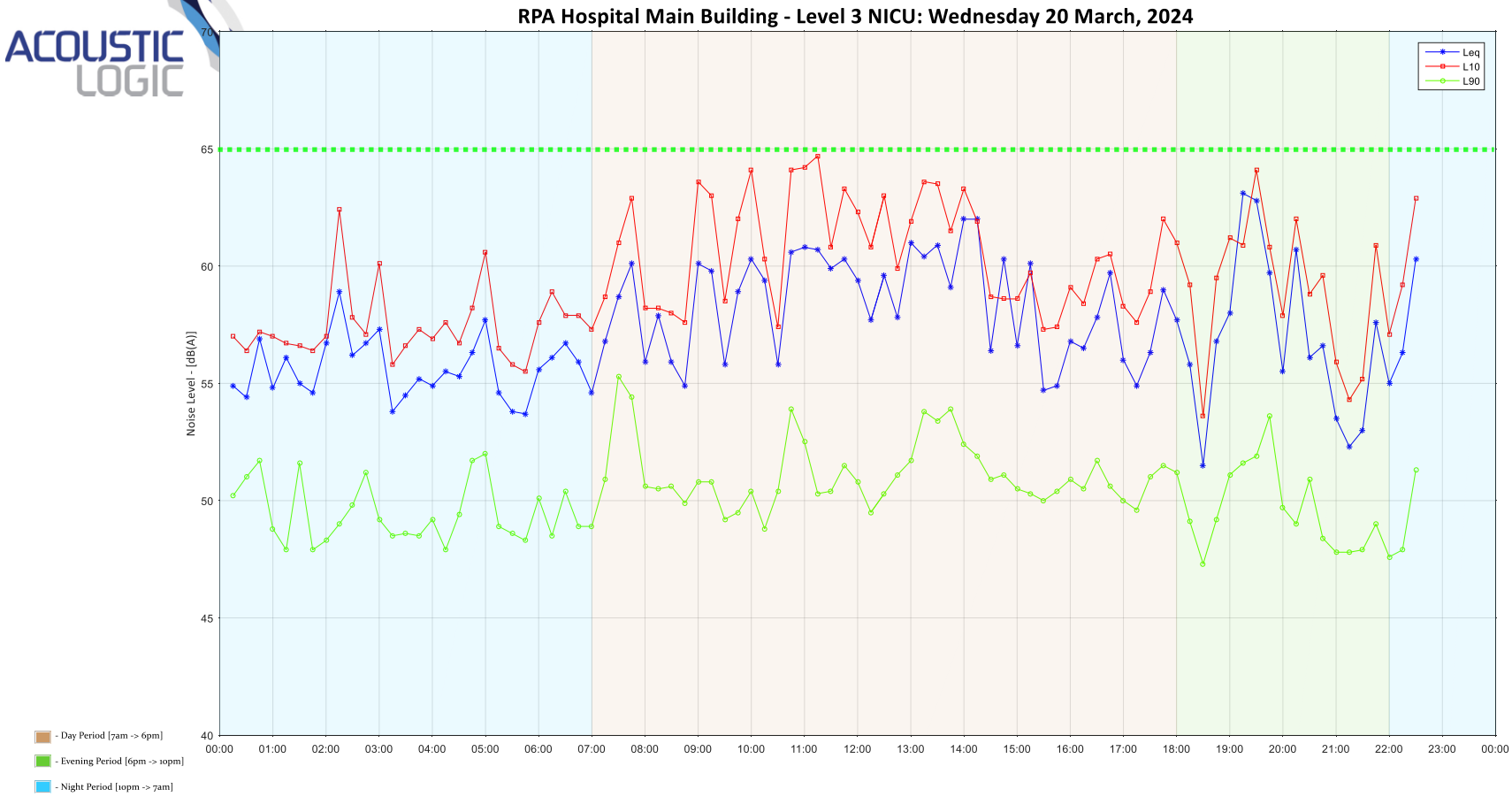
RPA HOSPITAL MAIN BUILDING – LEVEL 3 NICU



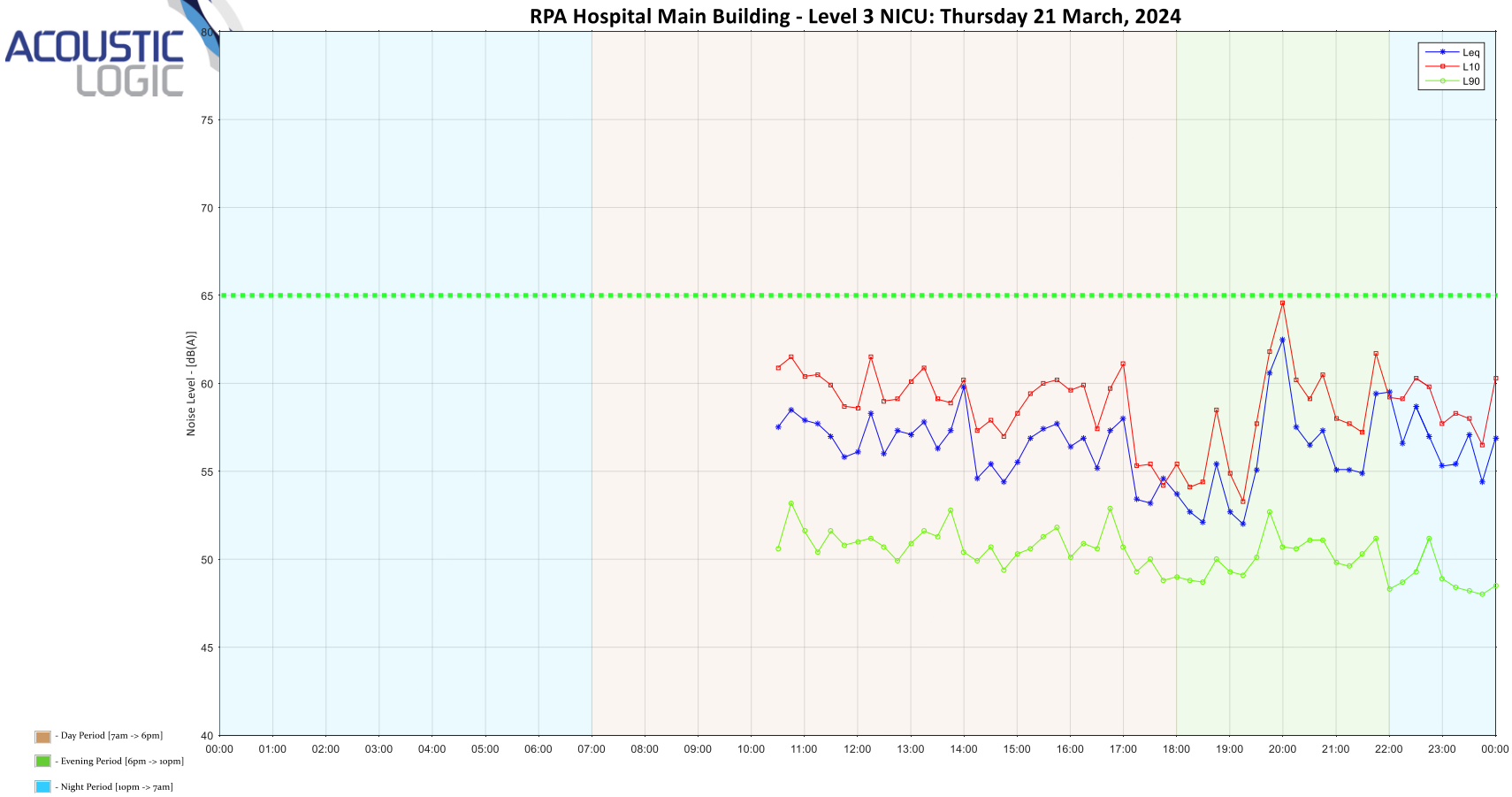
NICU NML (Including correction) ≤ 65dB(A)L_{eq}



NICU NML (Including correction) ≤ 65dB(A)L_{eq}



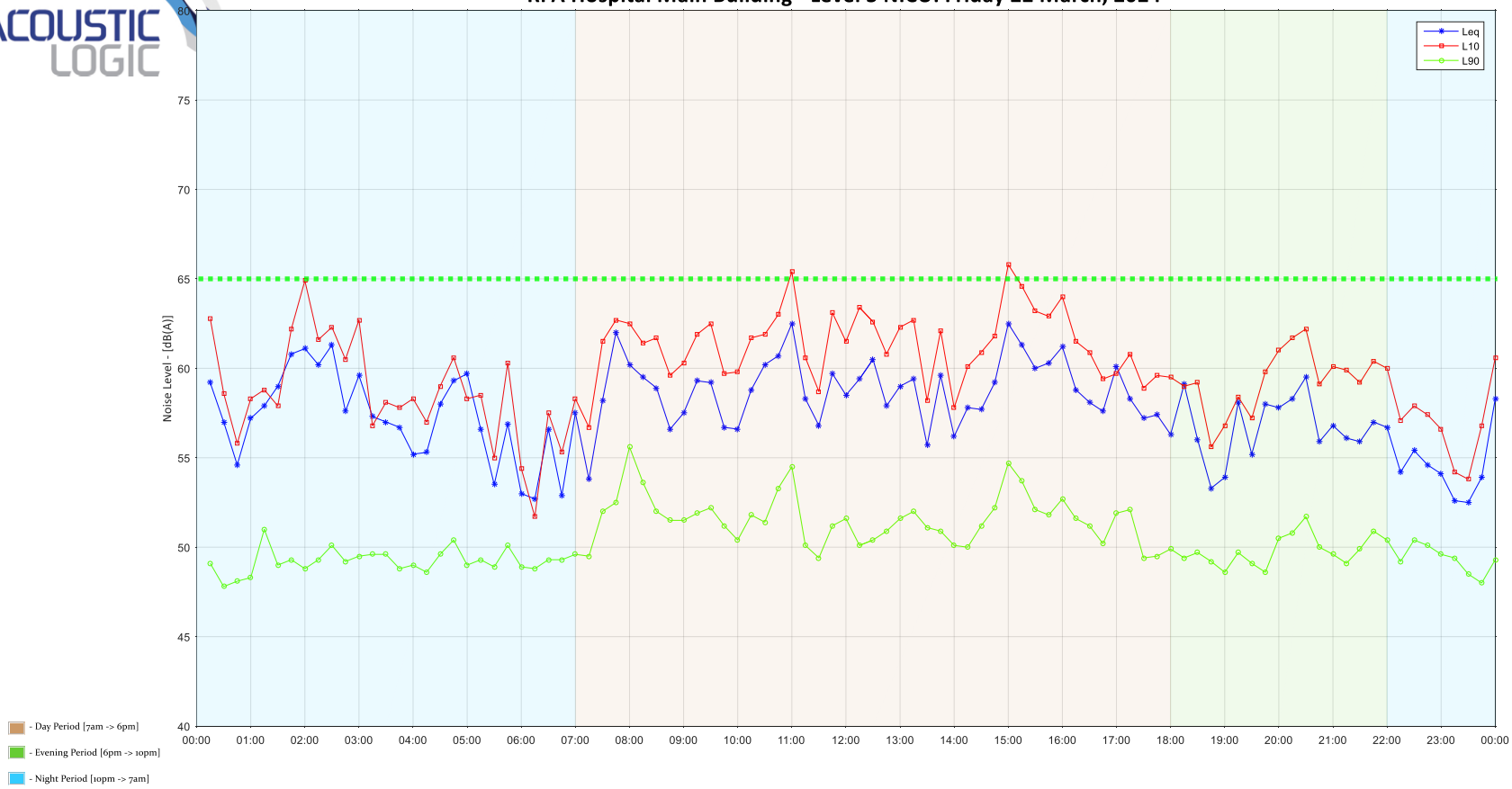
NICU NML (Including correction) ≤ 65dB(A)L_{eq}



NICU NML (Including correction) ≤ 65dB(A)L_{eq}

ACOUSTIC LOGIC

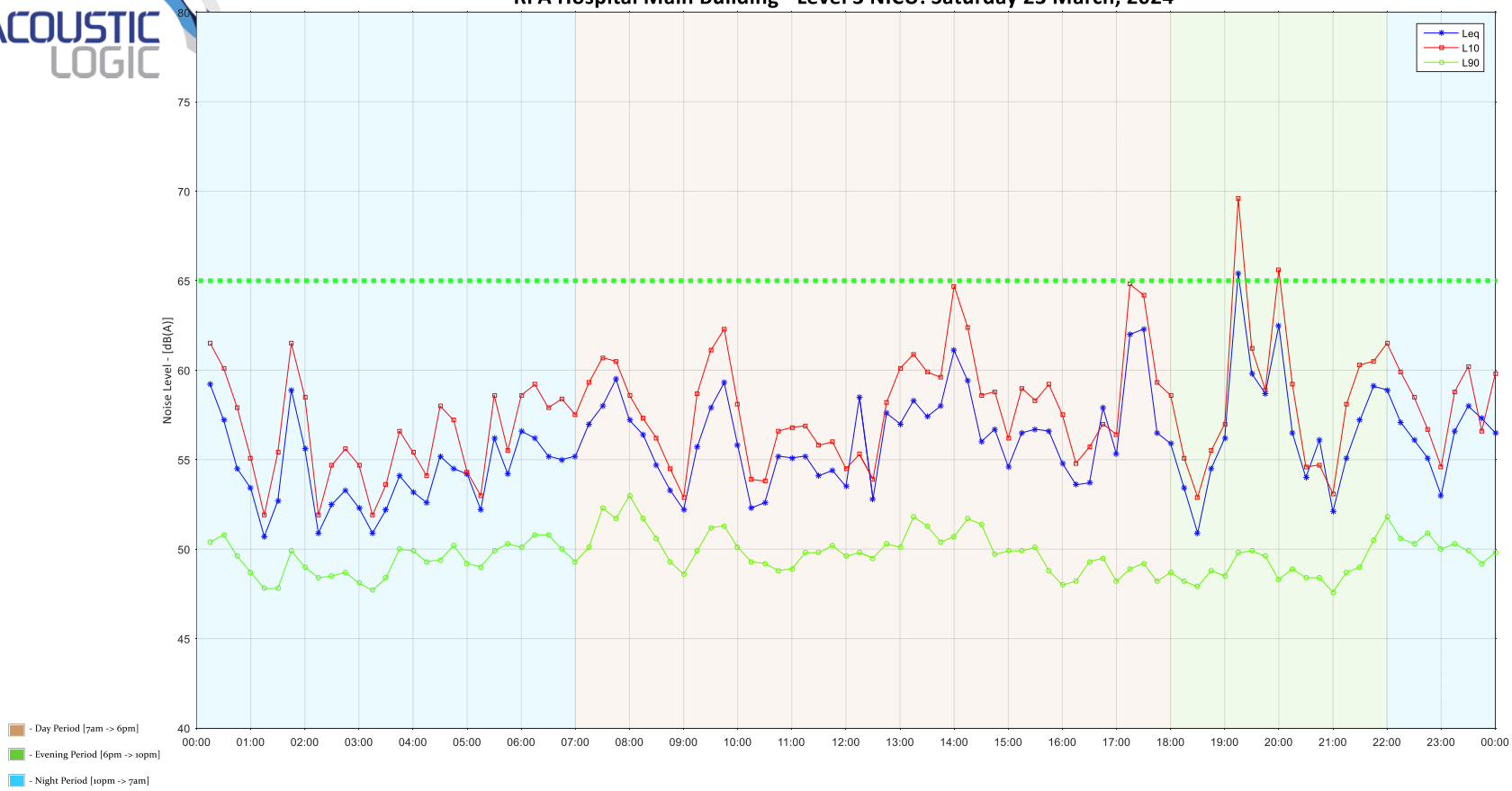
RPA Hospital Main Building - Level 3 NICU: Friday 22 March, 2024



NICU NML (Including correction) ≤ 65dB(A)L_{eq}

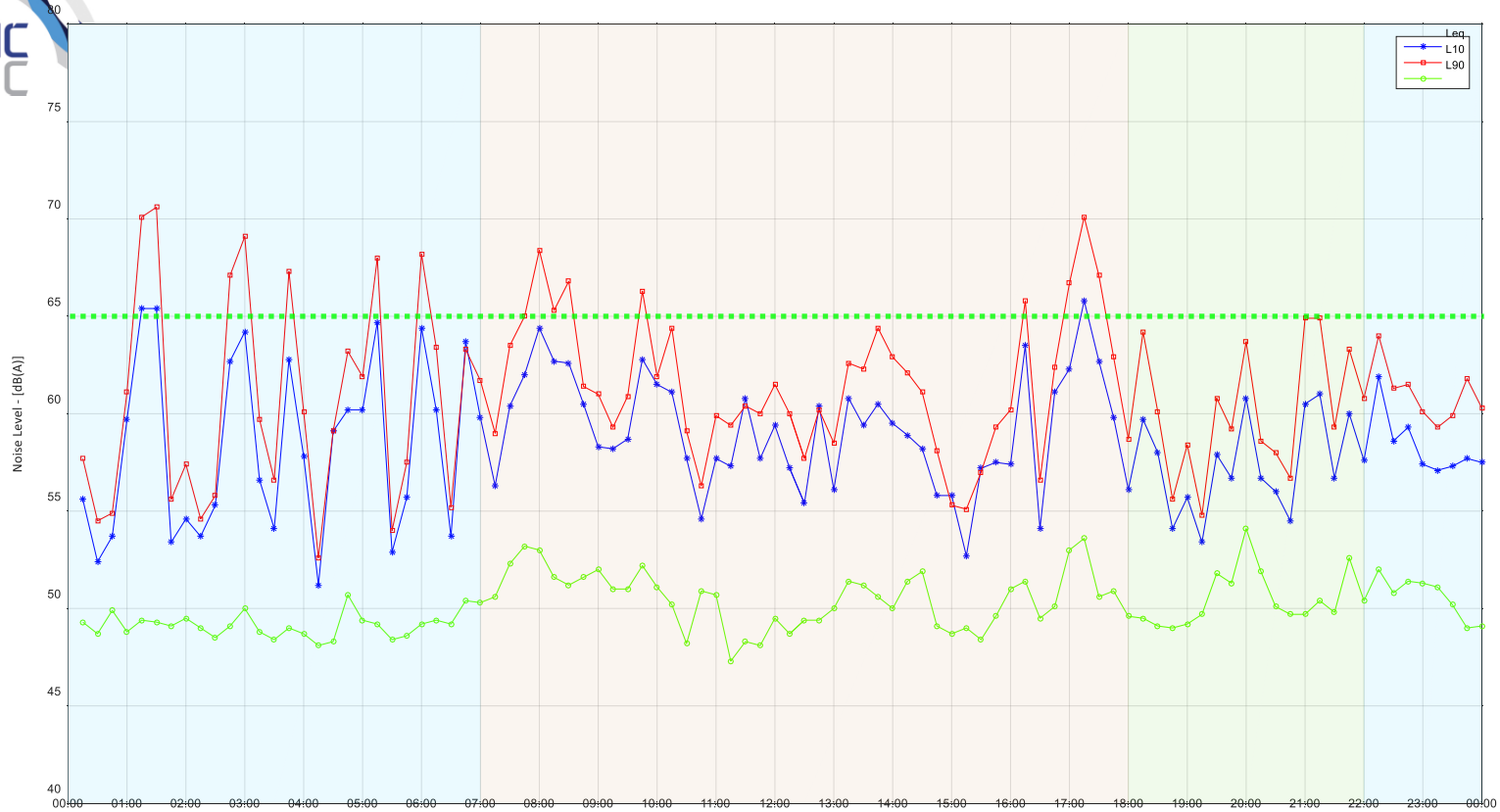
ACOUSTIC LOGIC

RPA Hospital Main Building - Level 3 NICU: Saturday 23 March, 2024

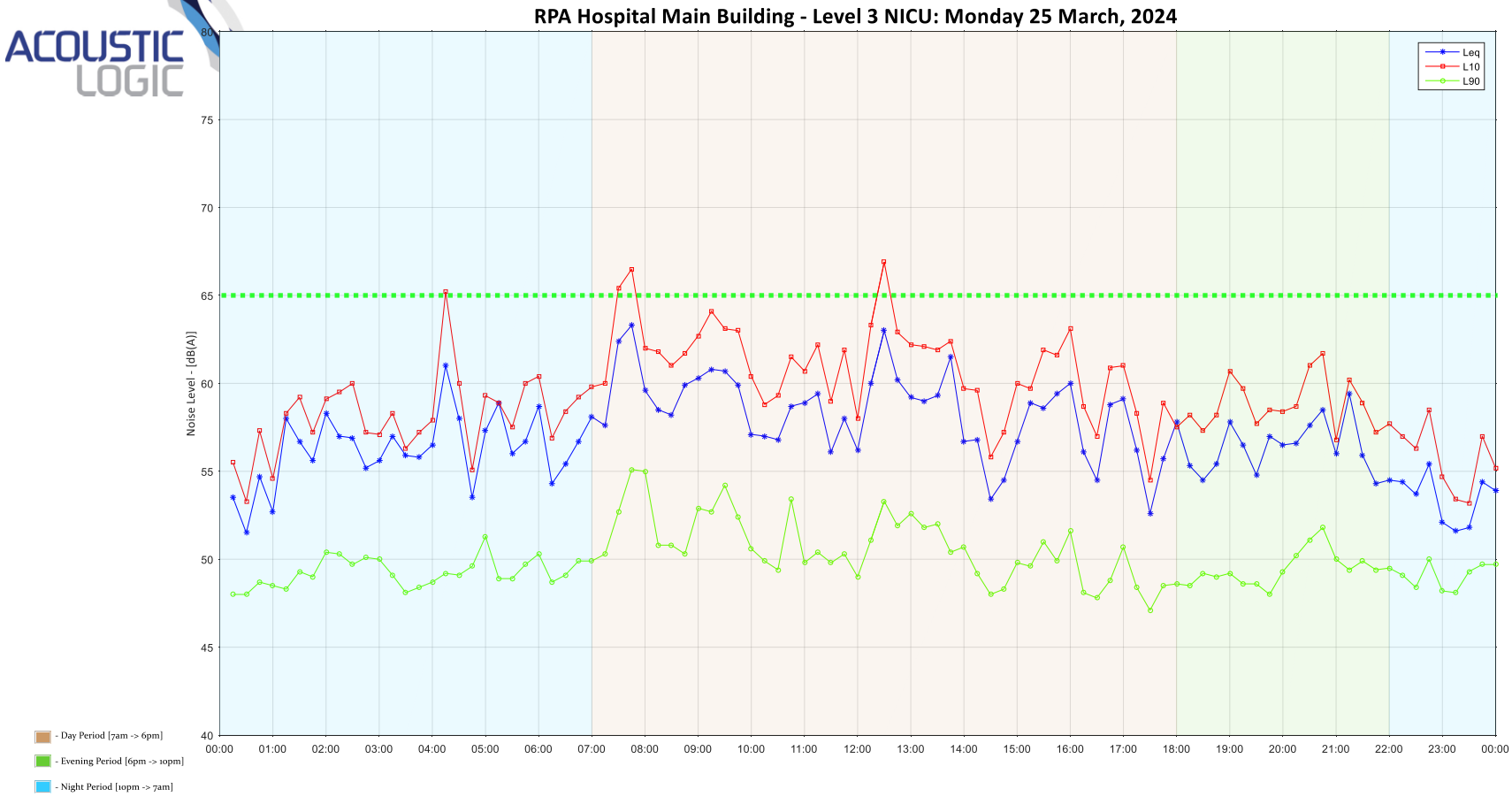


NICU NML (Including correction) ≤ 65dB(A)L_{eq}

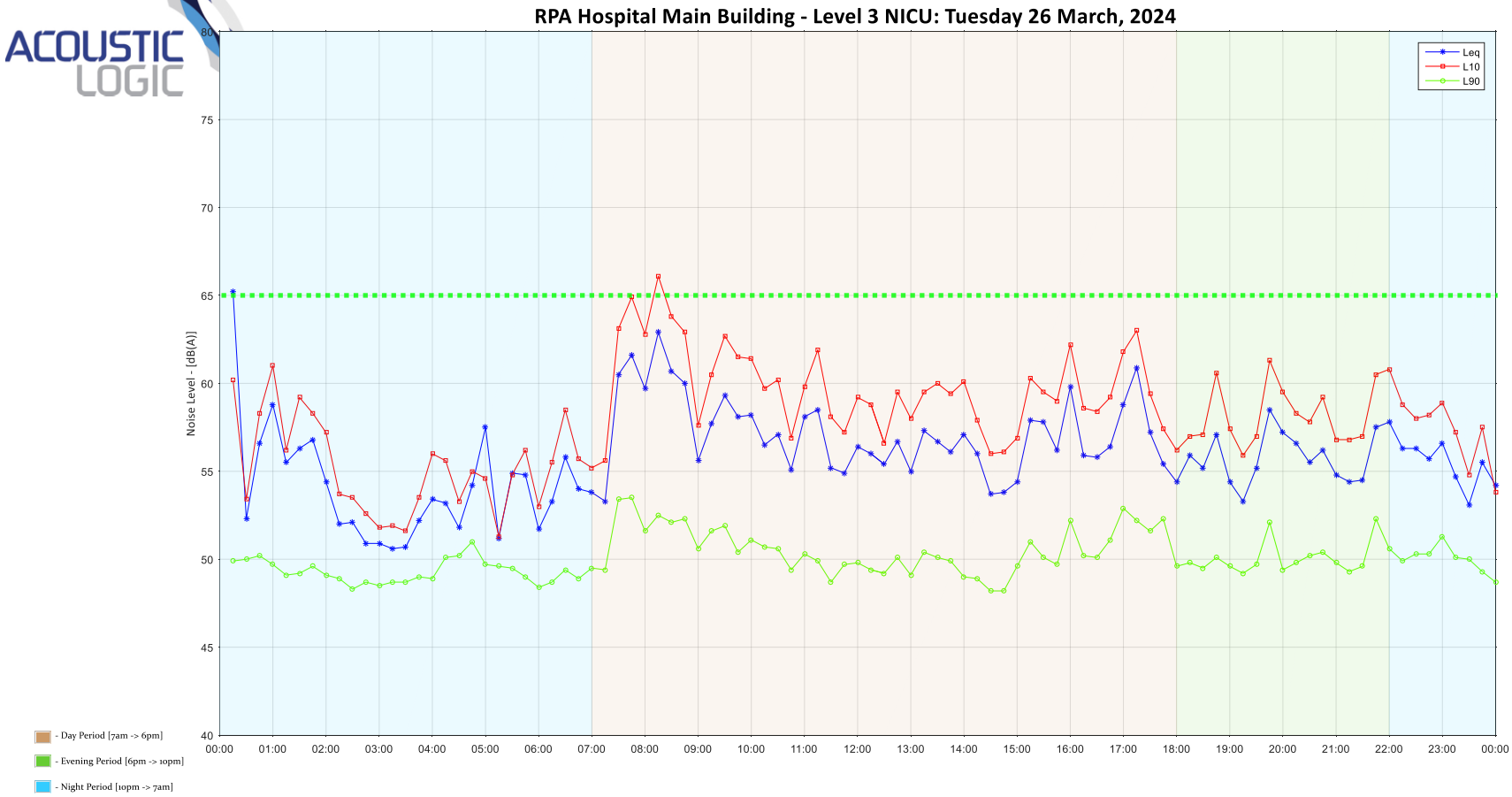
RPA Hospital Main Building - Level 3 NICU: Sunday 24 March, 2024



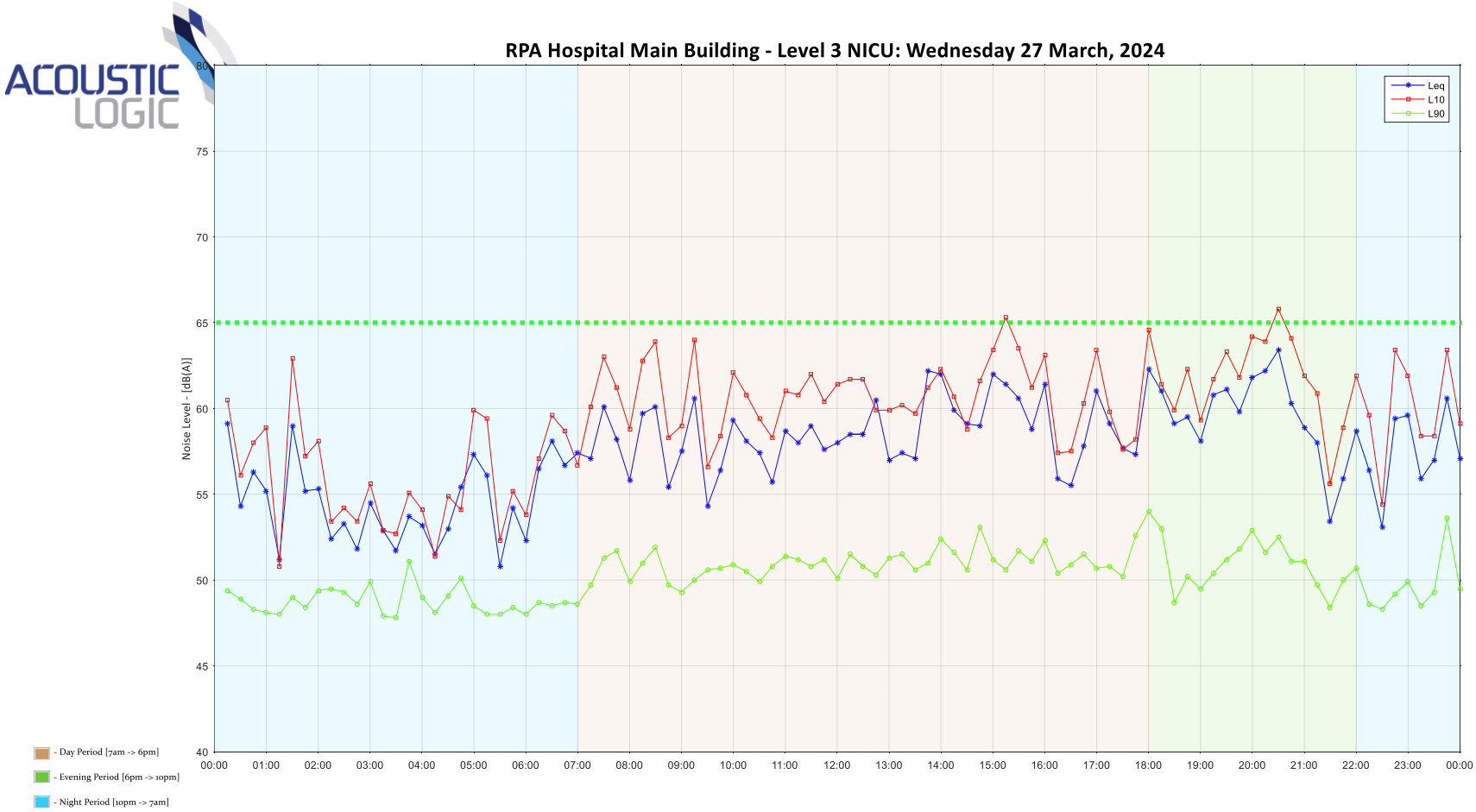
NICU NML (Including correction) ≤ 65dB(A)L_{eq}



NICU NML (Including correction) ≤ 65dB(A)L_{eq}

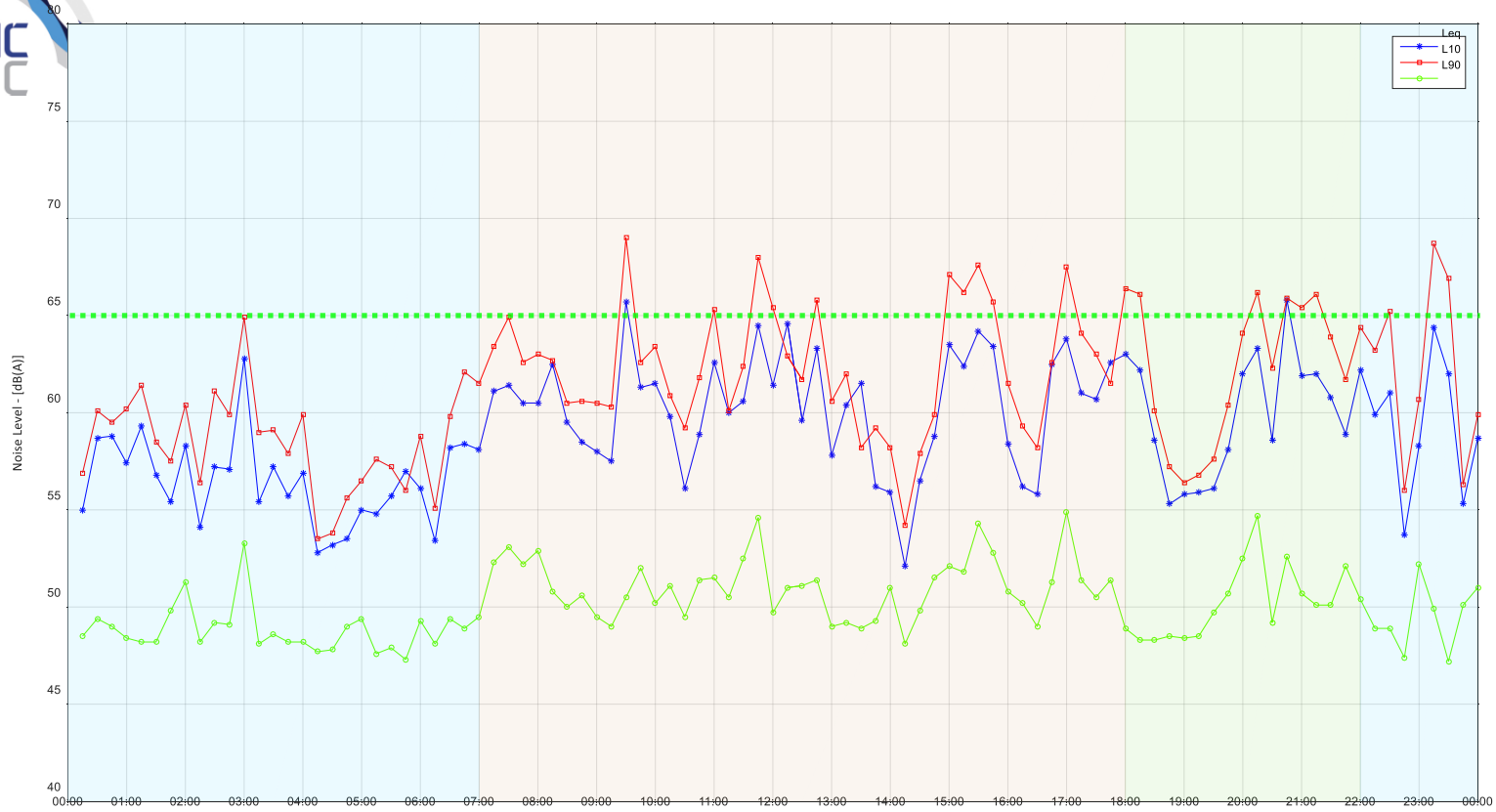


NICU NML (Including correction) ≤ 65dB(A)L_{eq}



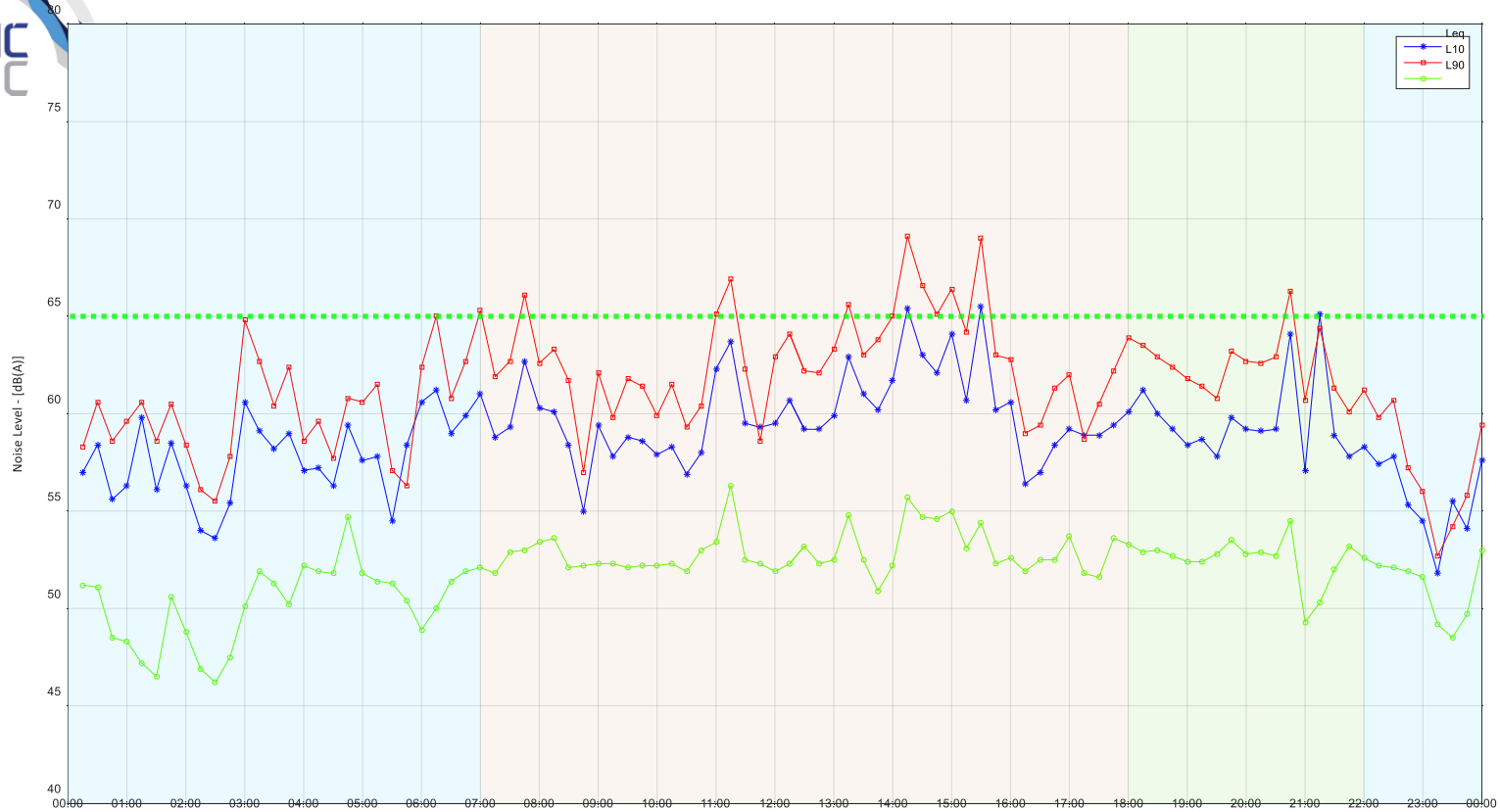
NICU NML (Including correction) ≤ 65dB(A)L_{eq}

RPA Hospital Main Building - Level 3 NICU: Thursday 28 March, 2024



NICU NML (Including correction) ≤ 65dB(A)L_{eq}

RPA Hospital Main Building - Level 3 NICU: Friday 29 March, 2024

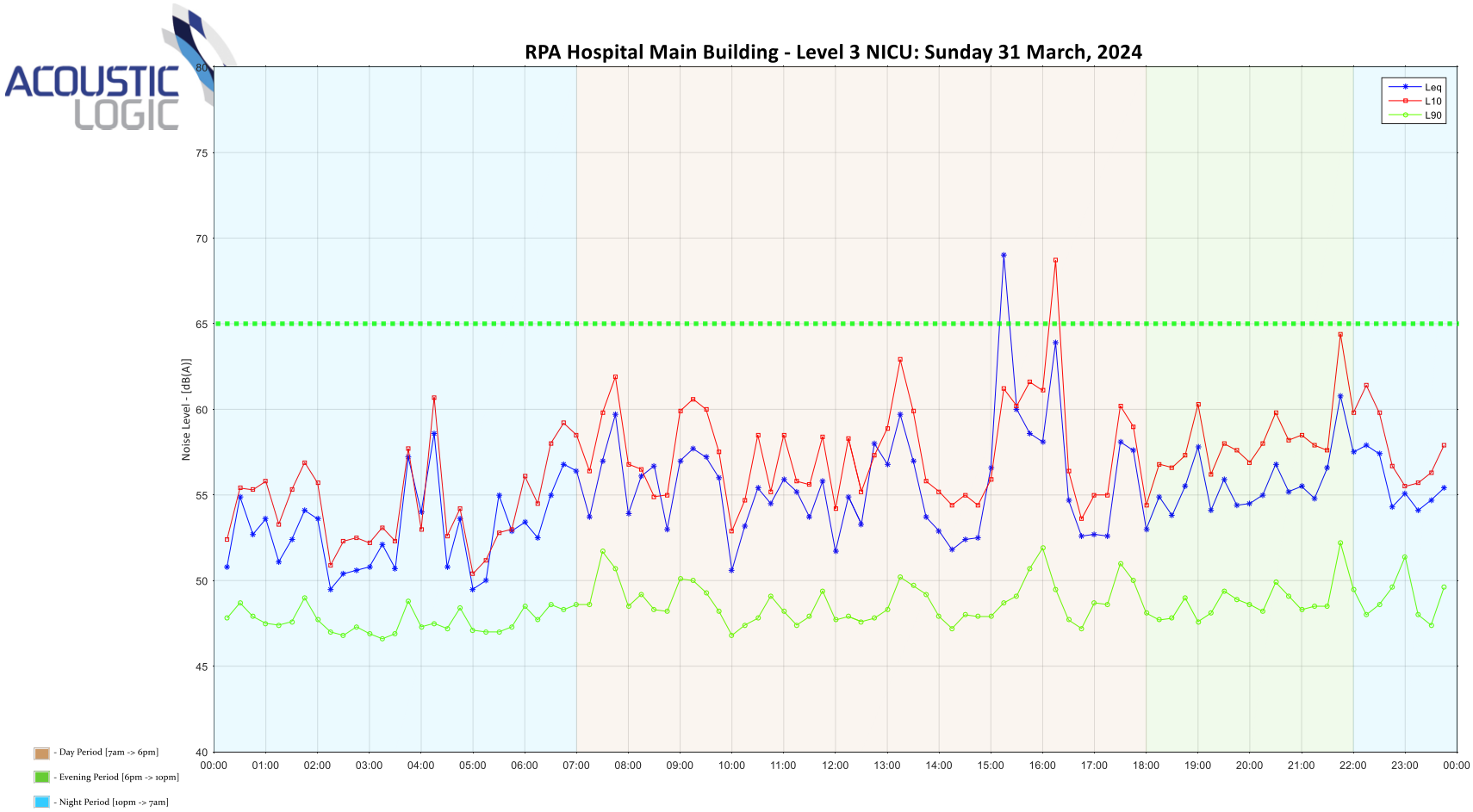


NICU NML (Including correction) ≤ 65dB(A)L_{eq}

ACOUSTIC LOGIC

RPA Hospital Main Building - Level 3 NICU: Saturday 30 March, 2024

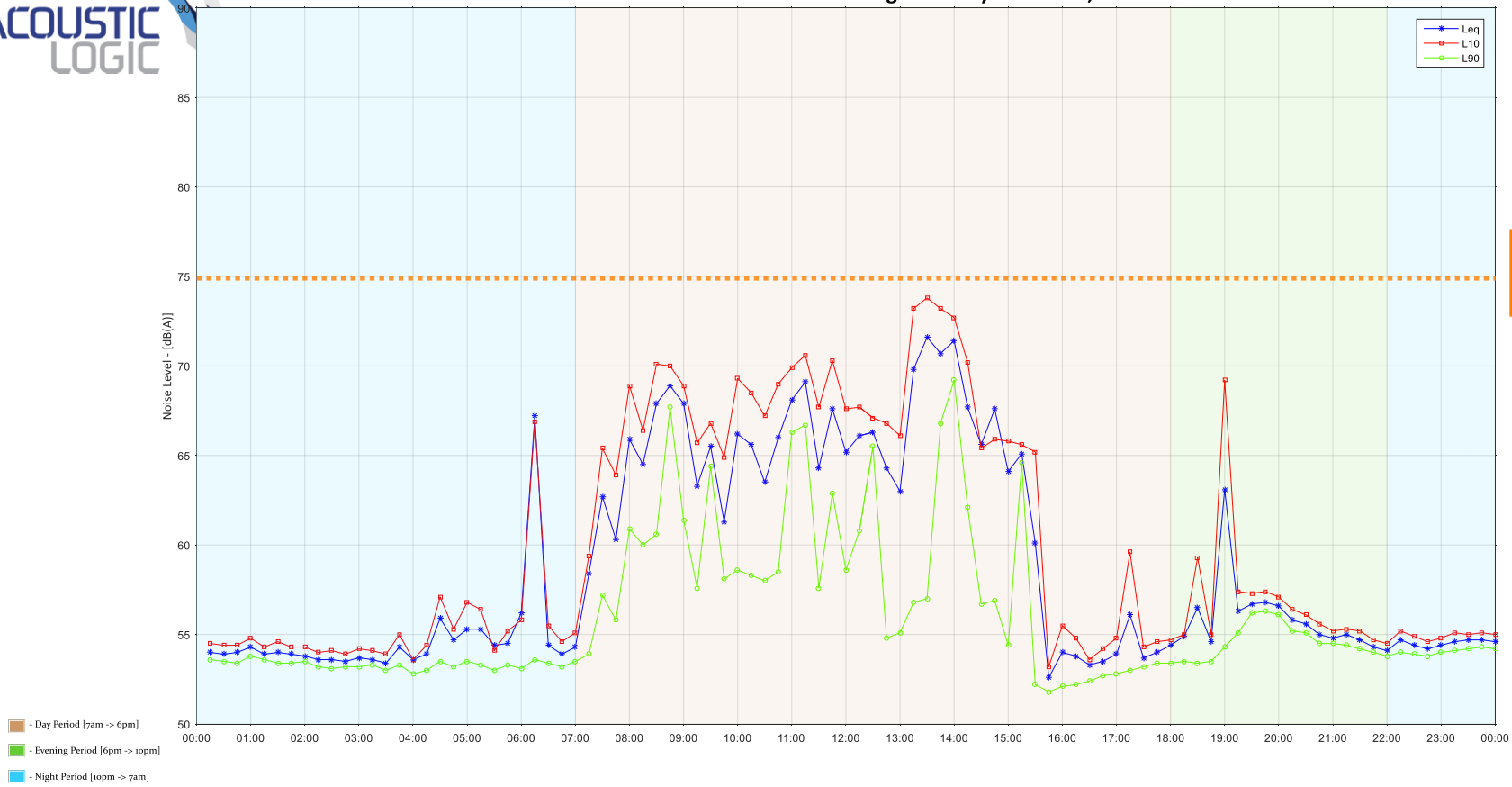
NICU NML (Including correction) ≤ 65dB(A)L_{eq}



NICU NML (Including correction) ≤ 65dB(A)L_{eq}

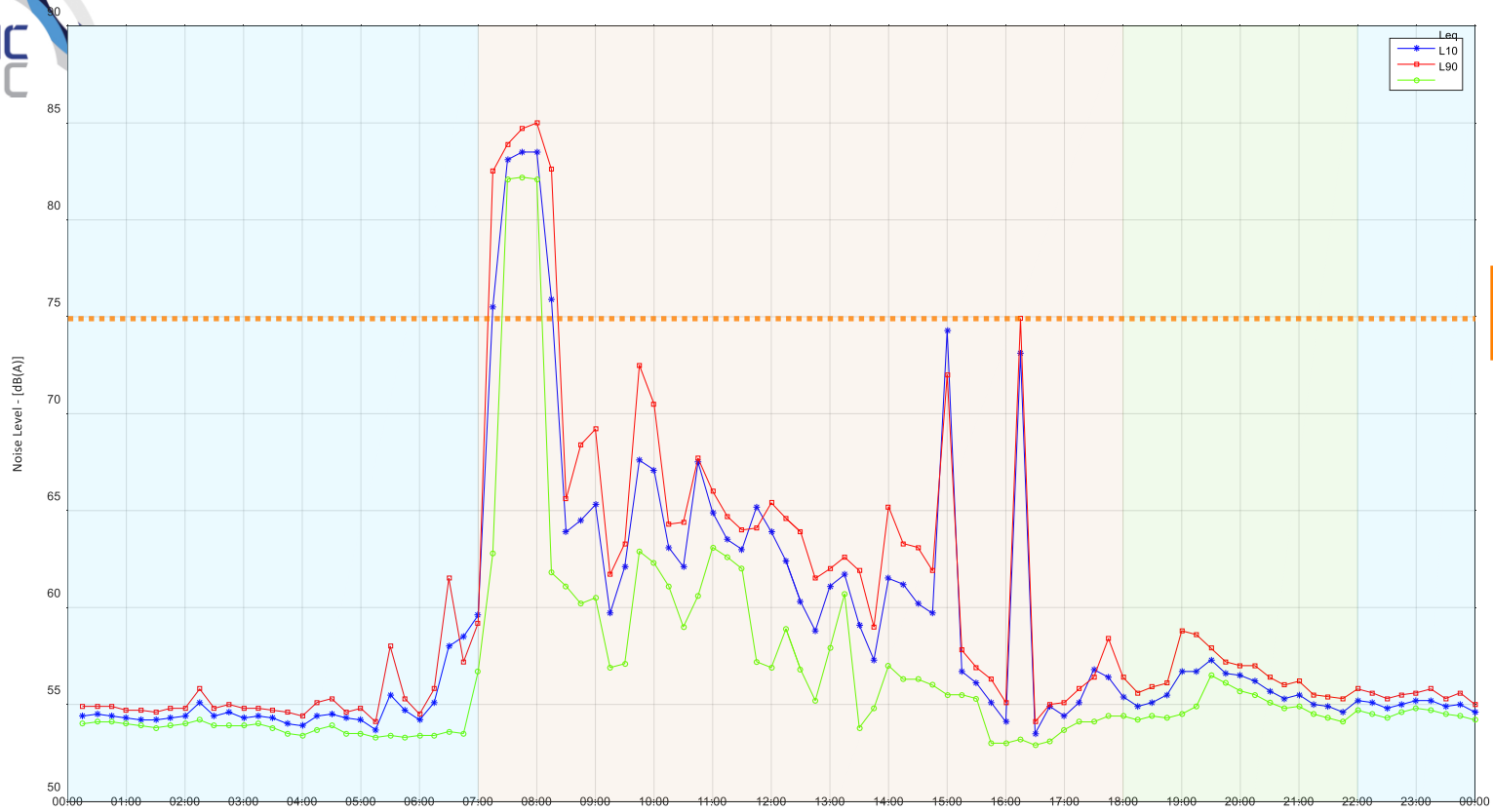
OUTSIDE SUSAN WAKIL HEALTH BUILDING

Outside Susan Wakil Health Building: Monday 18 March, 2024



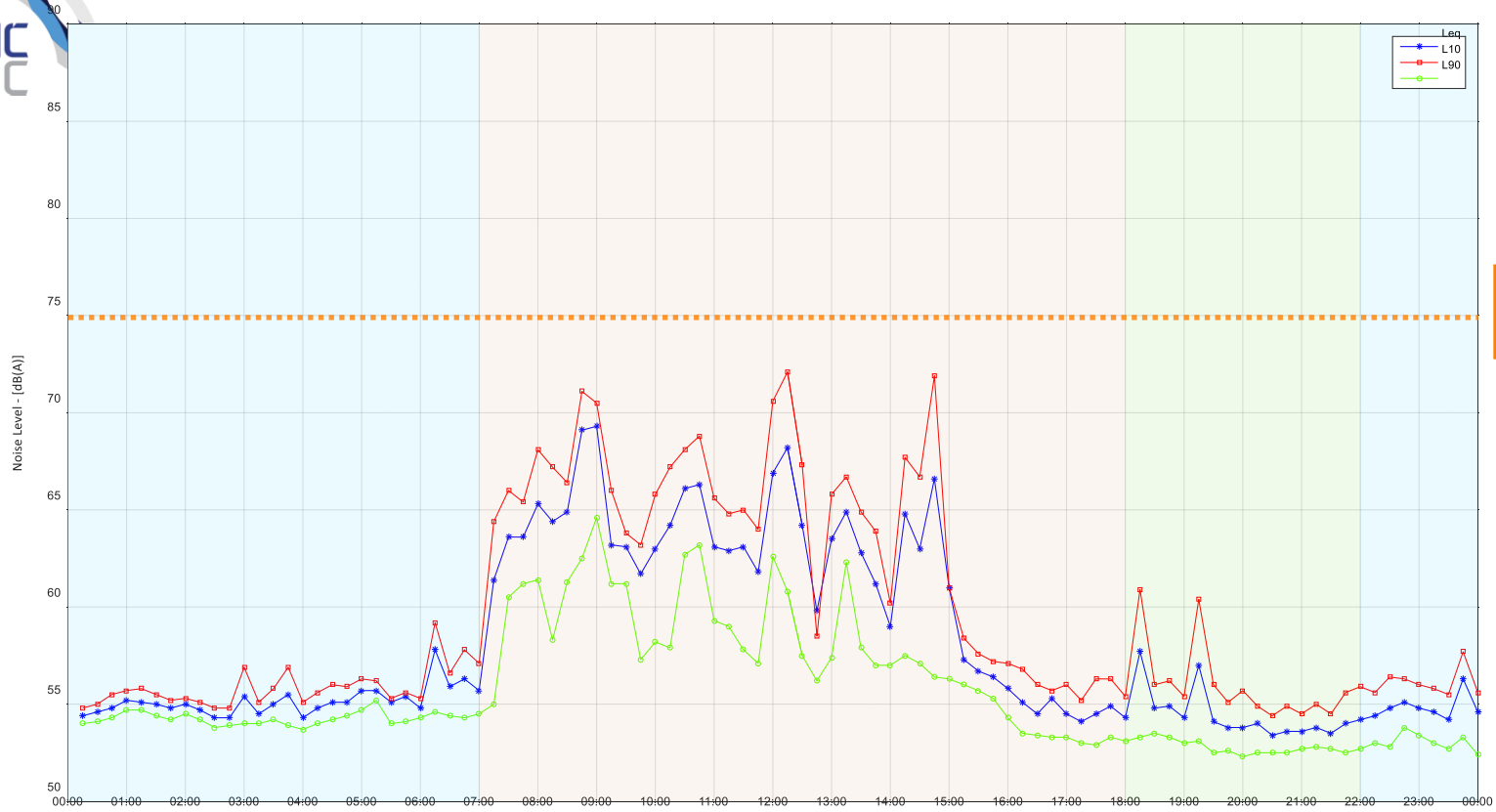
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Tuesday 19 March, 2024



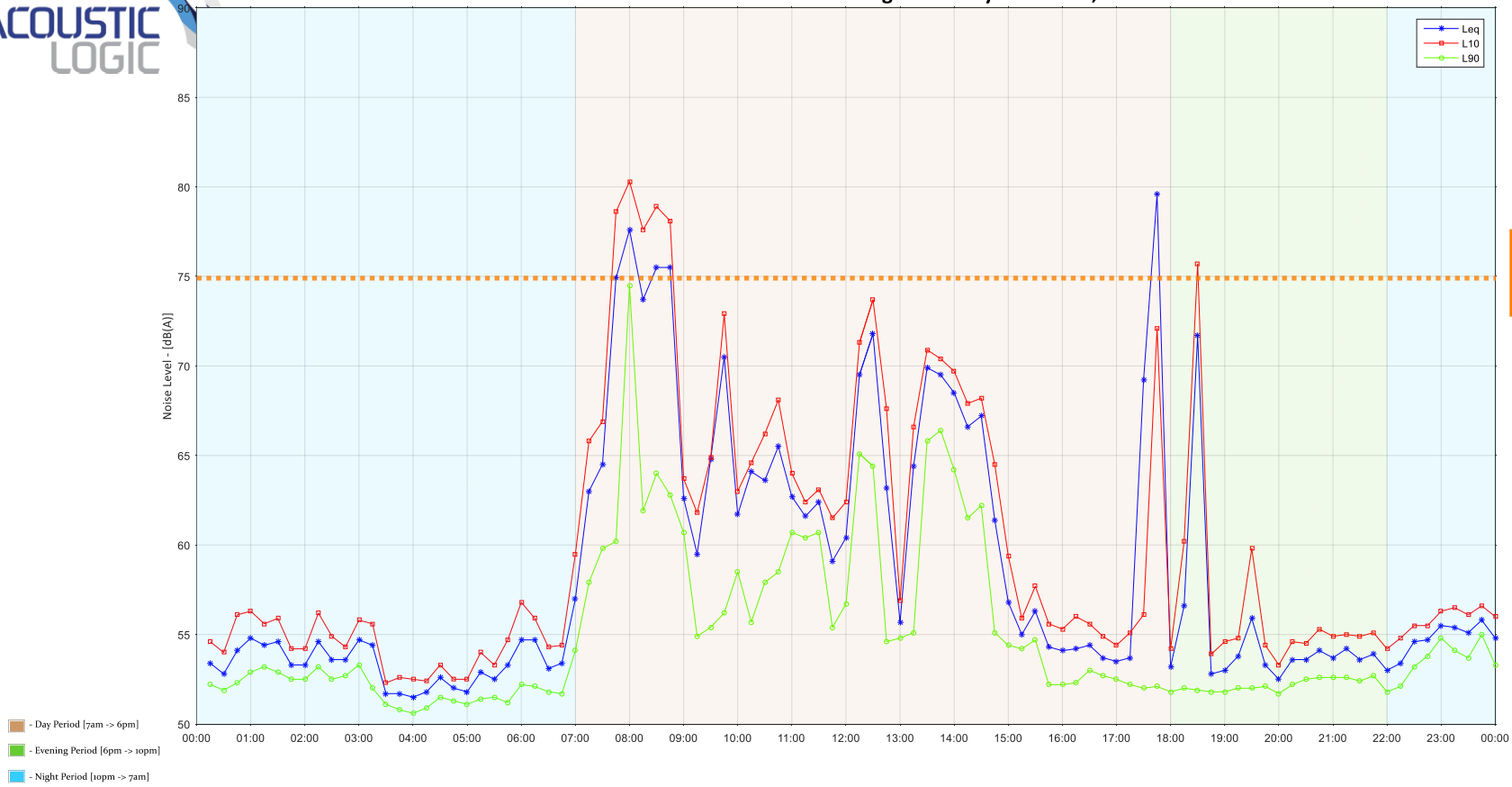
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Wednesday 20 March, 2024



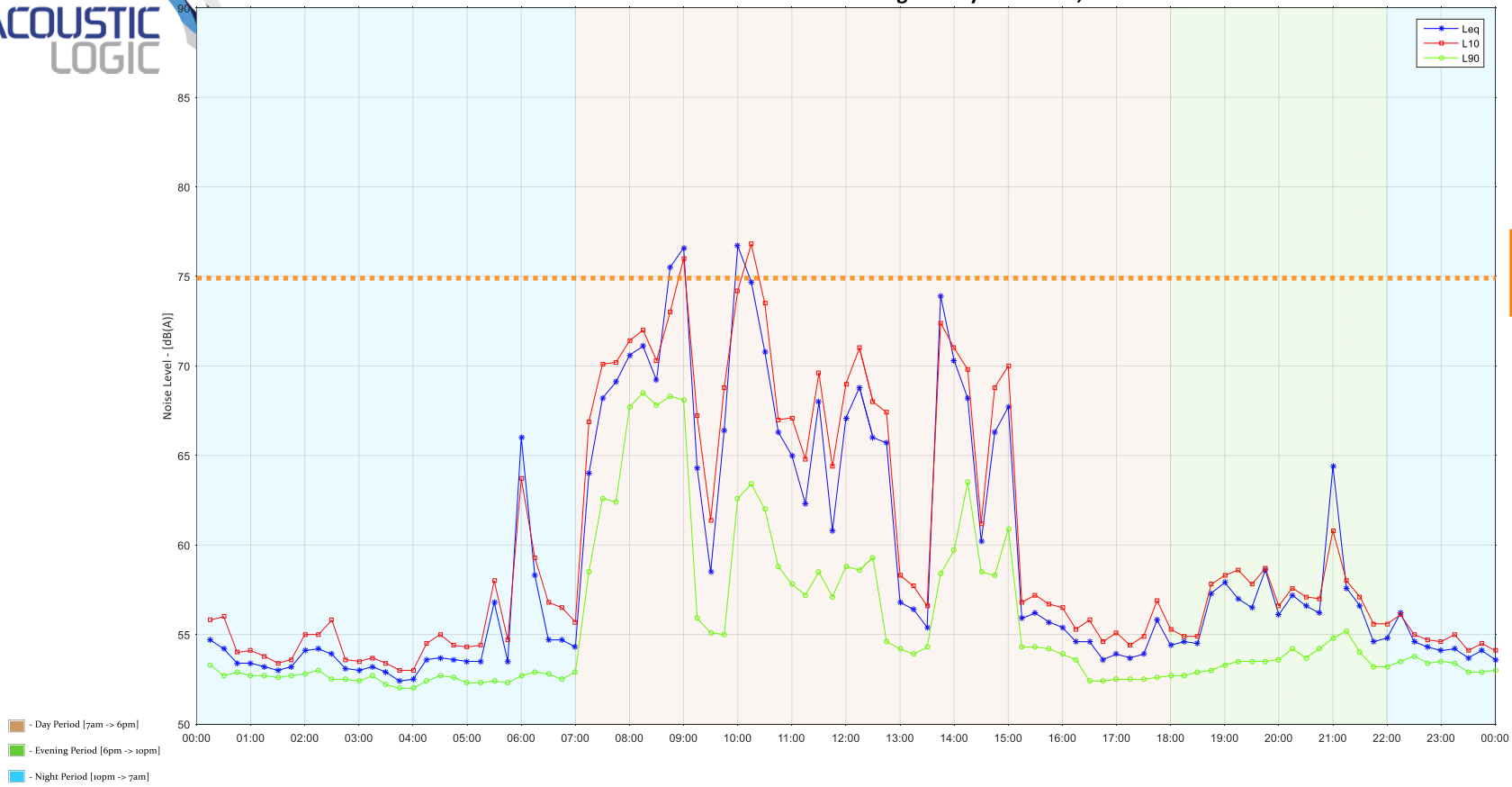
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Thursday 21 March, 2024



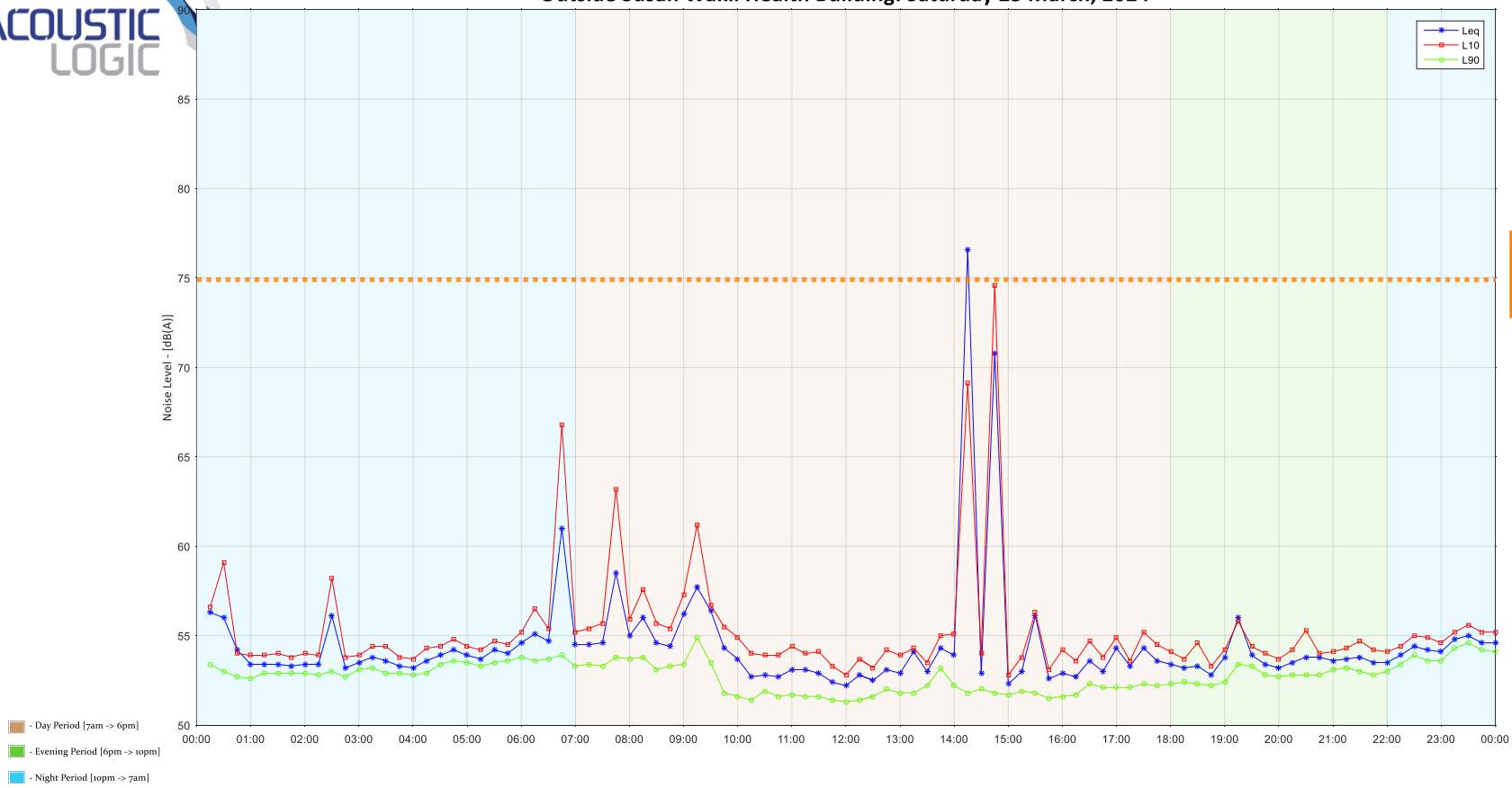
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Friday 22 March, 2024



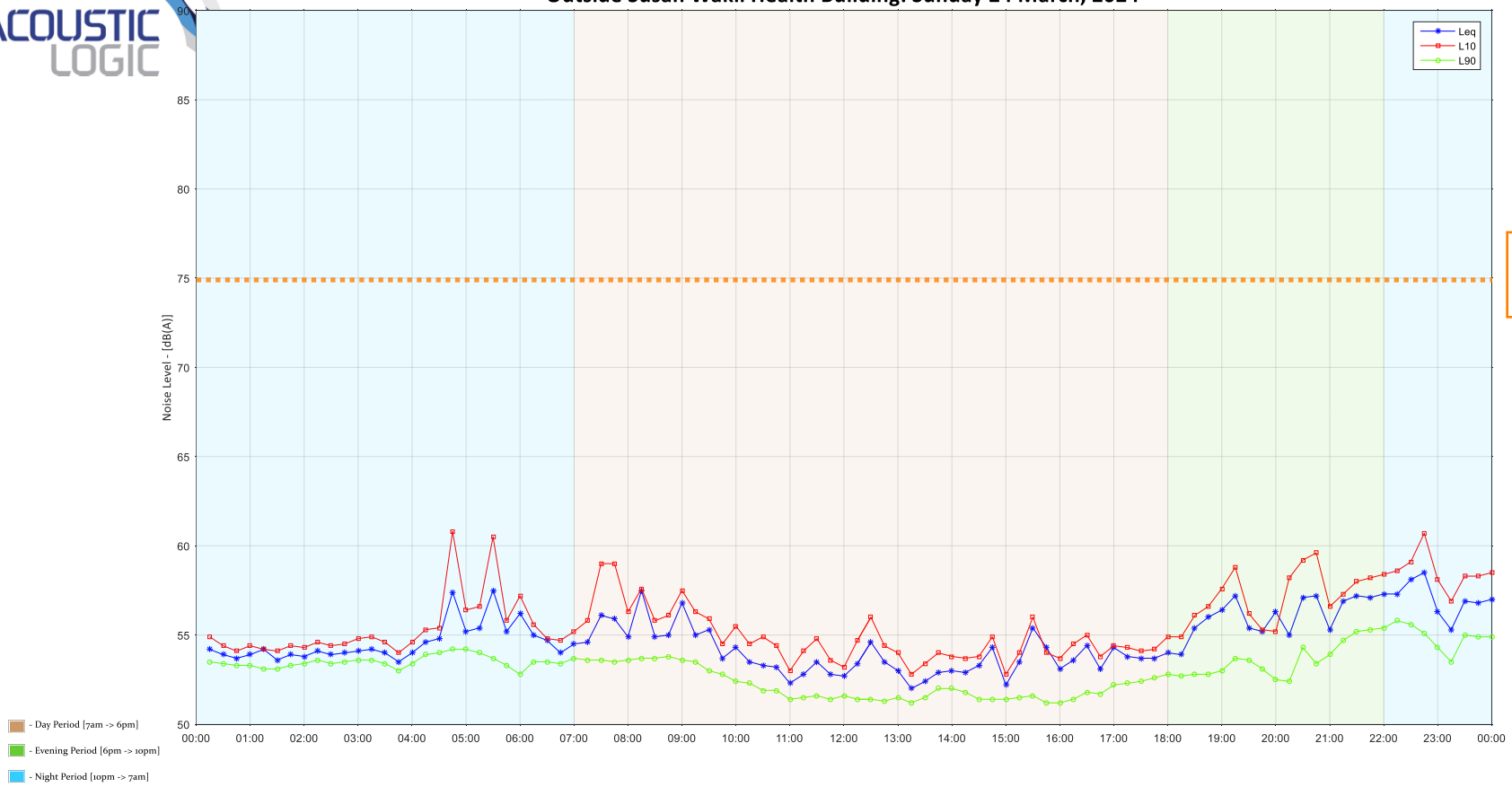
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Saturday 23 March, 2024



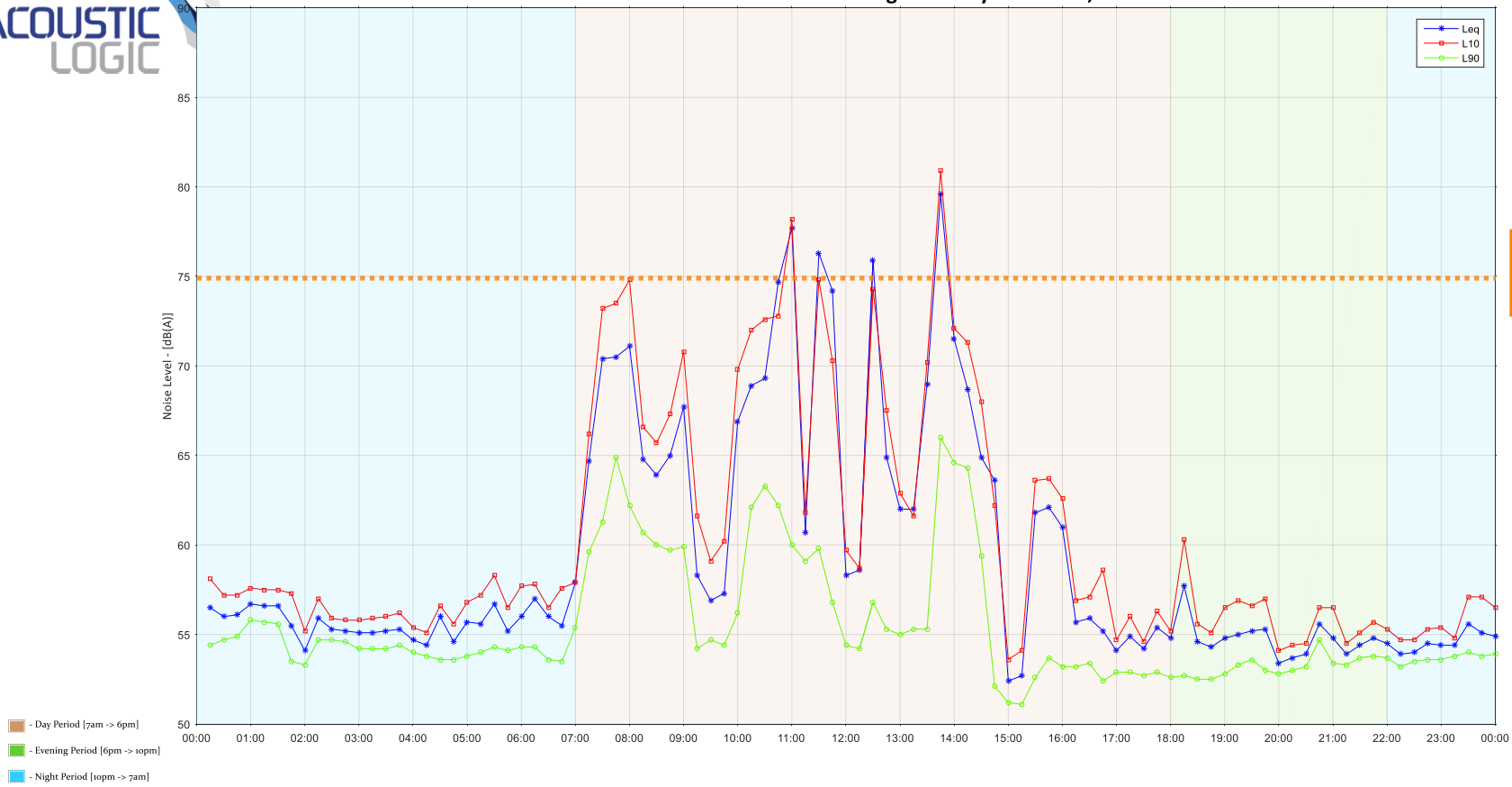
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Sunday 24 March, 2024



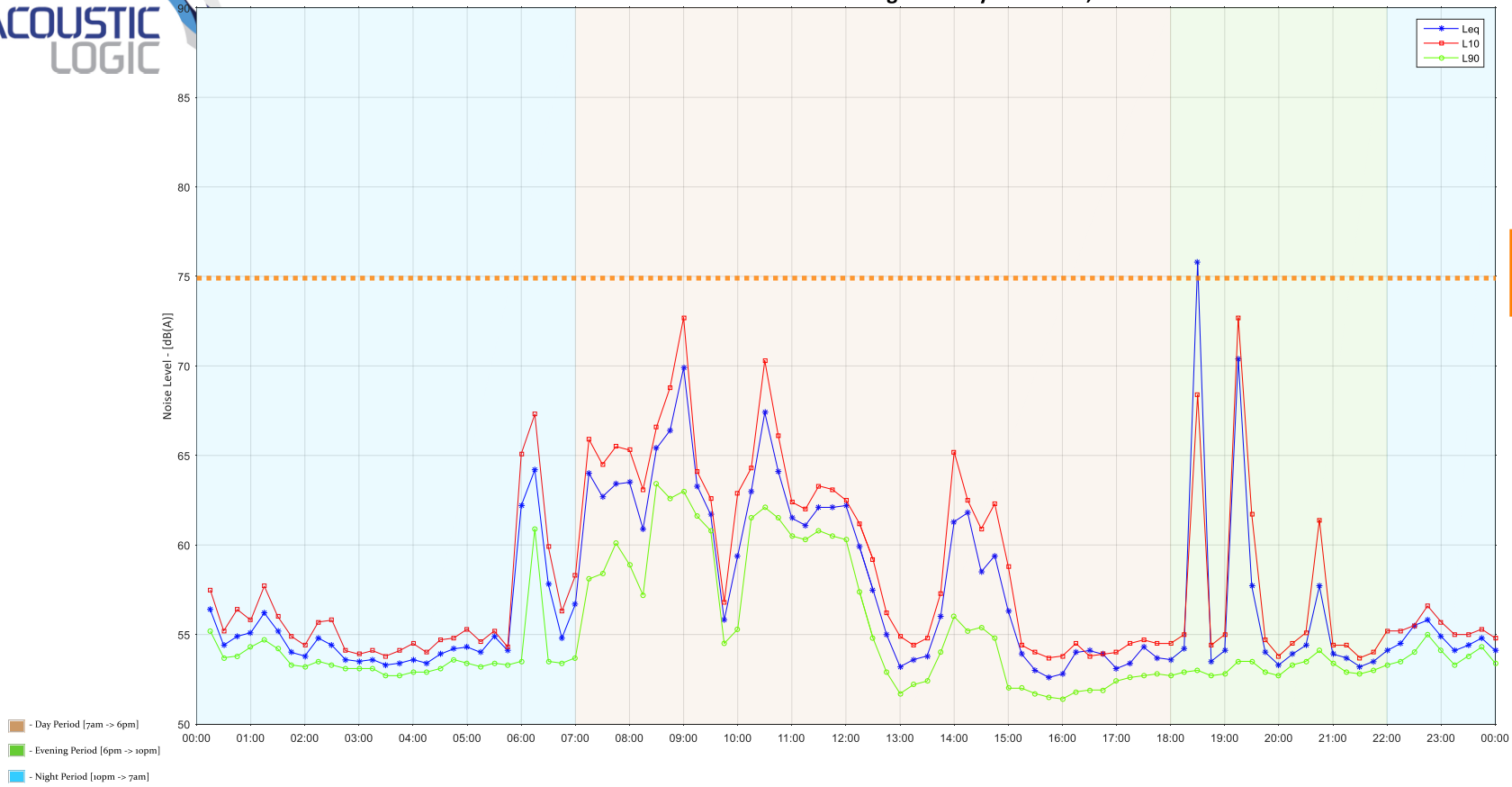
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Monday 25 March, 2024



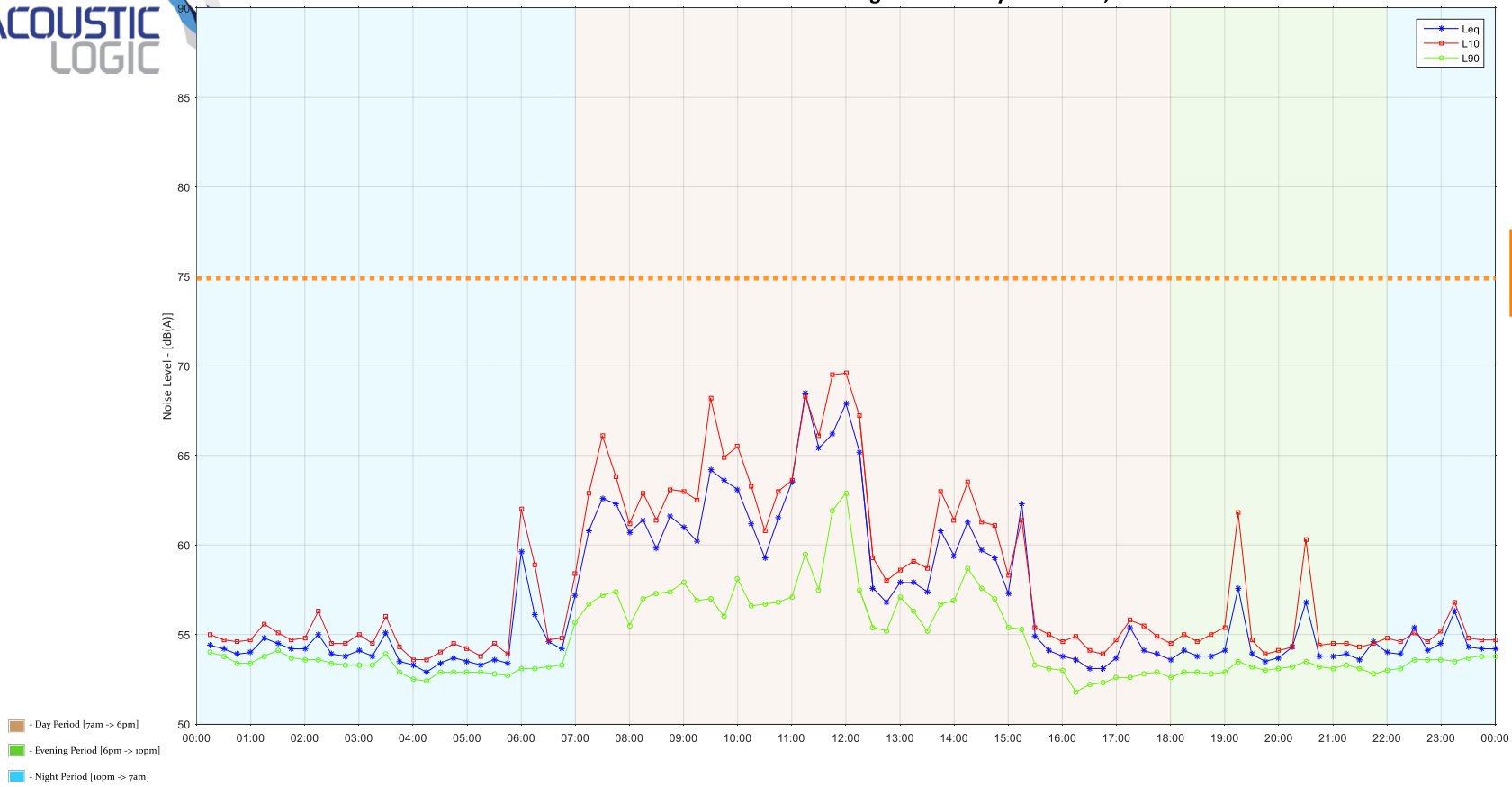
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Tuesday 26 March, 2024



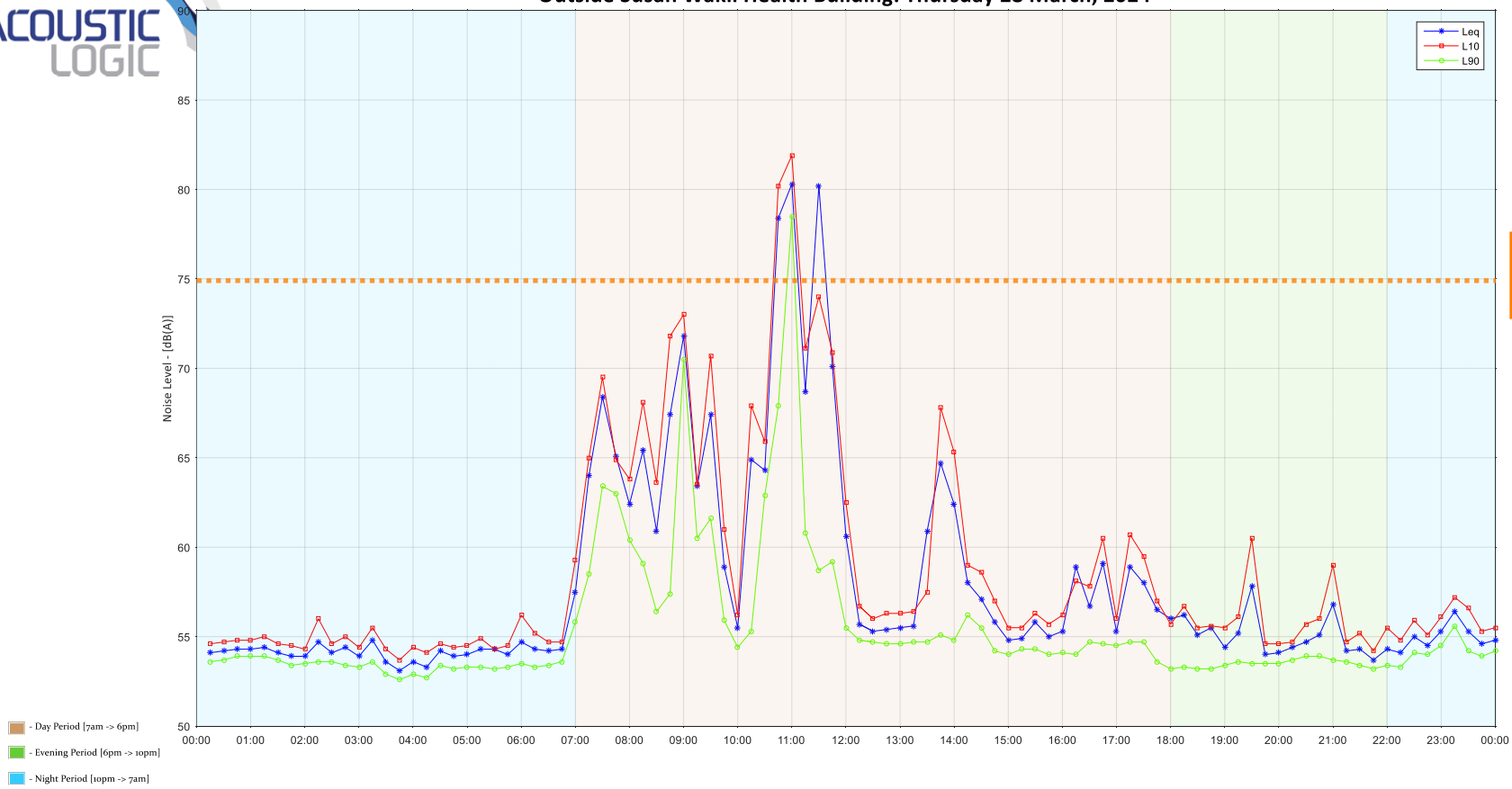
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Wednesday 27 March, 2024



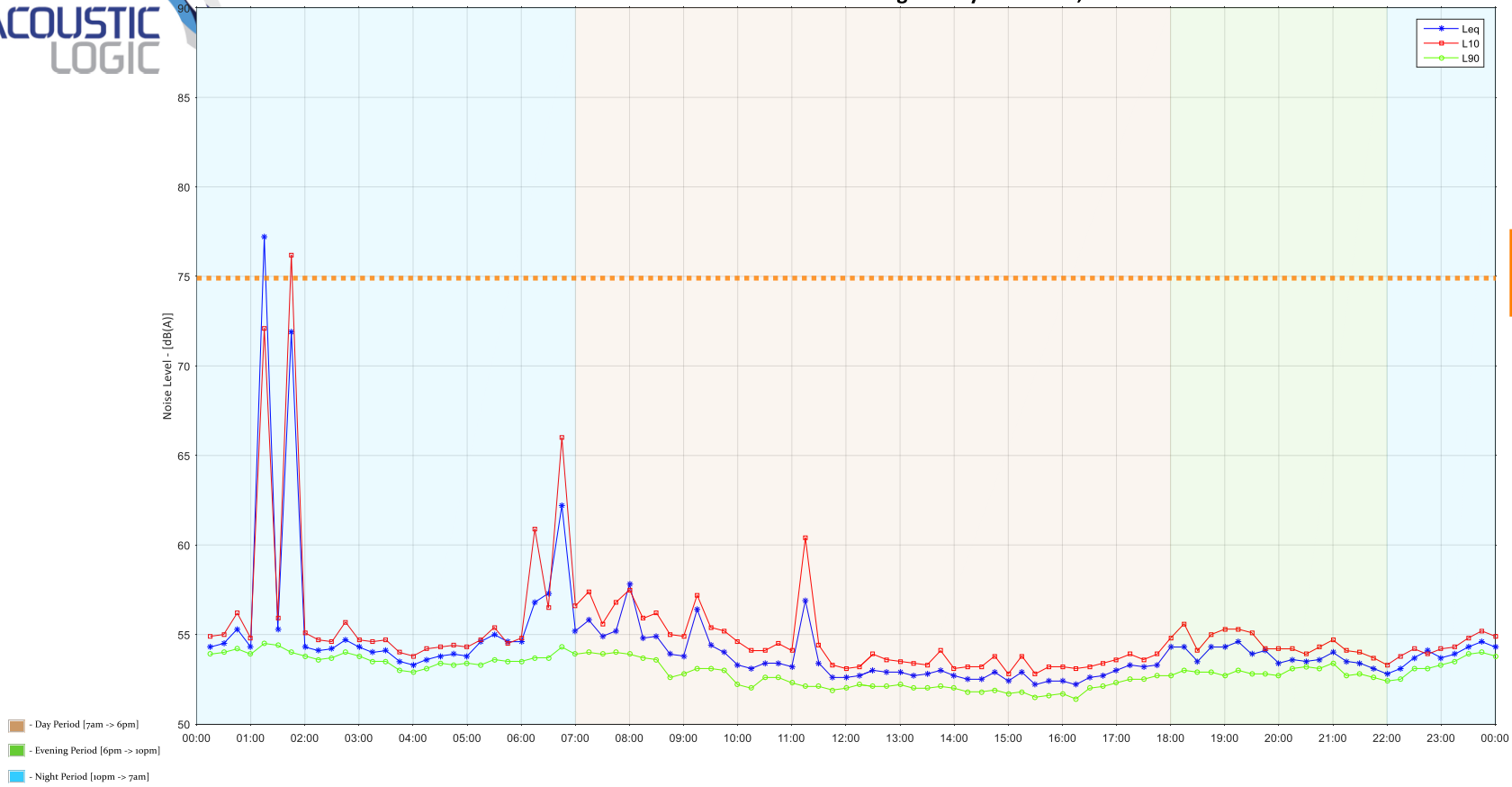
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Thursday 28 March, 2024



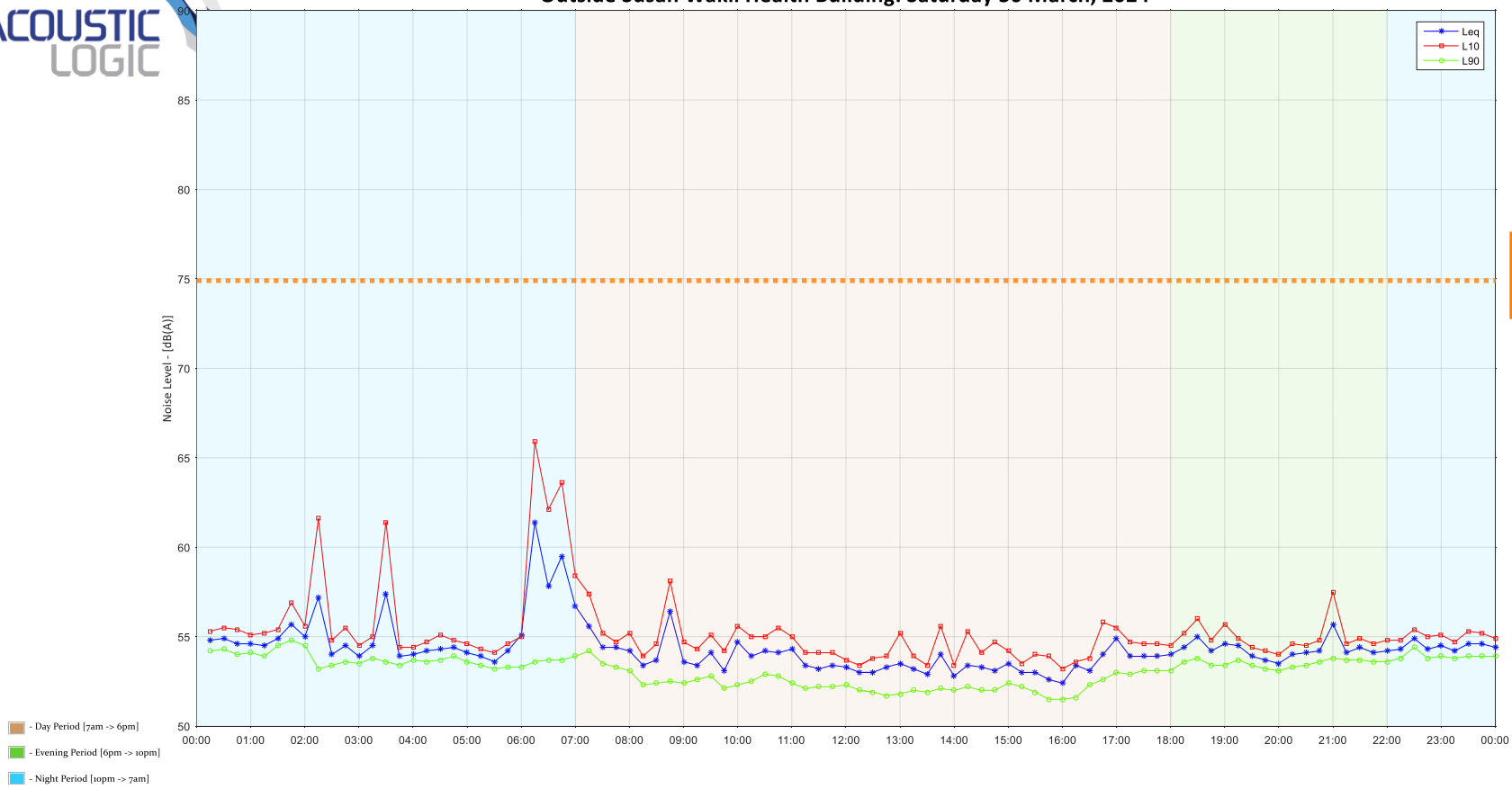
Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Friday 29 March, 2024

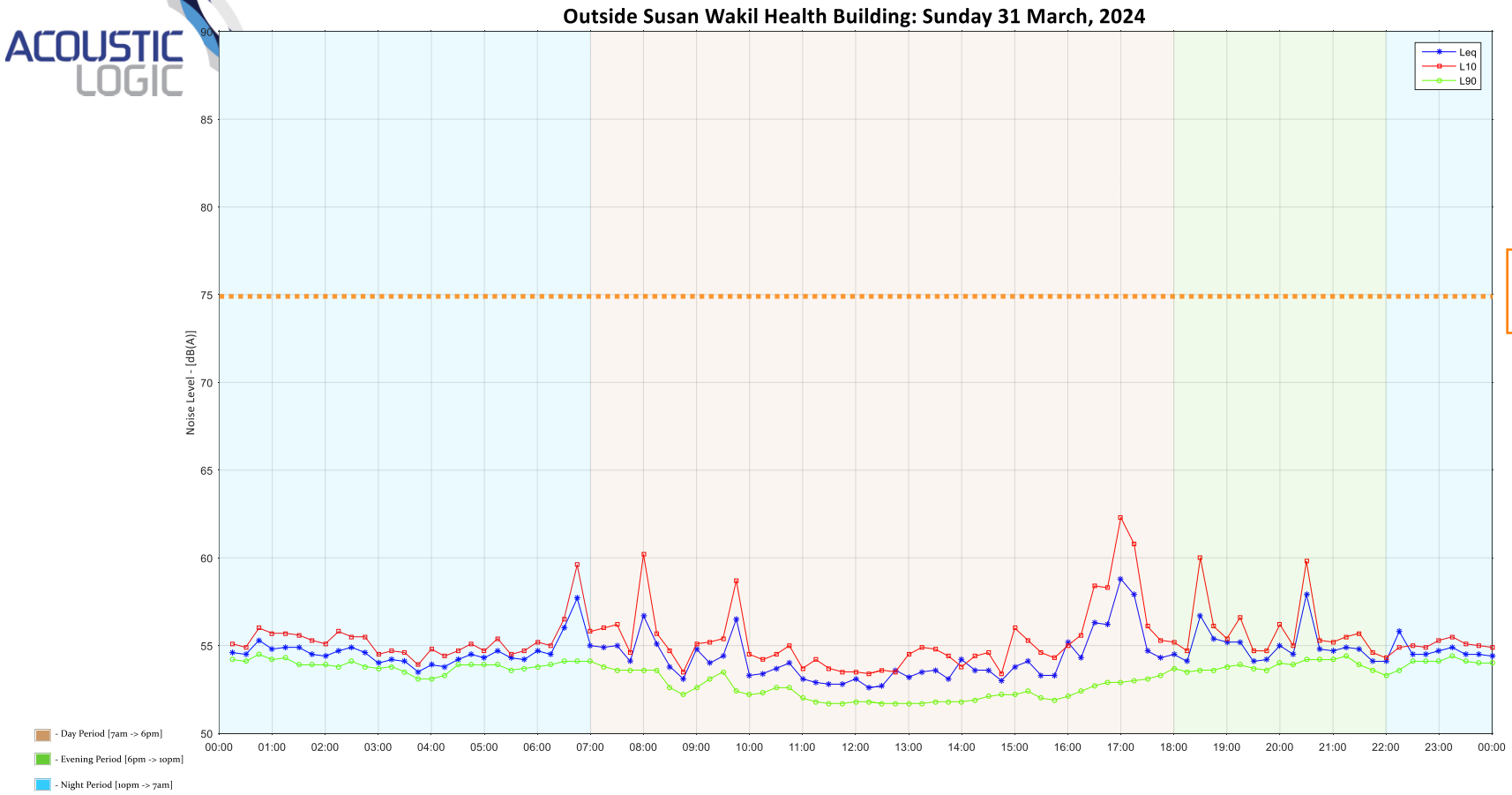


Education NML (Including correction) ≤ 75dB(A)L_{eq}

Outside Susan Wakil Health Building: Saturday 30 March, 2024



Education NML (Including correction) ≤ 75dB(A)L_{eq}



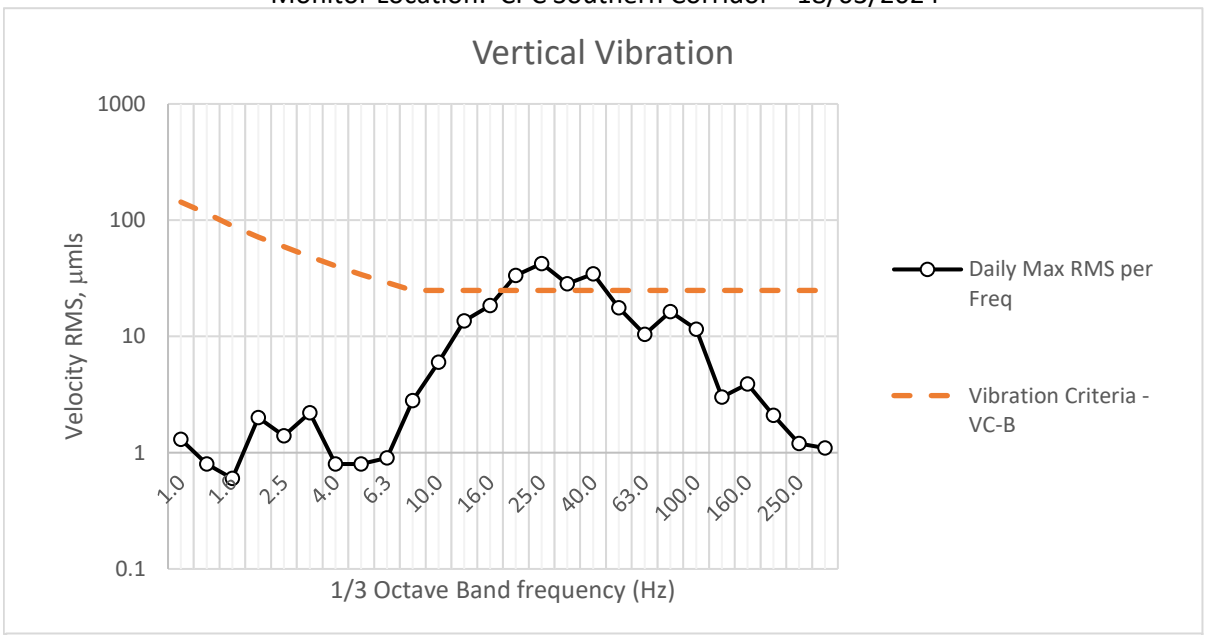
Education NML (Including correction) ≤ 75dB(A)L_{eq}

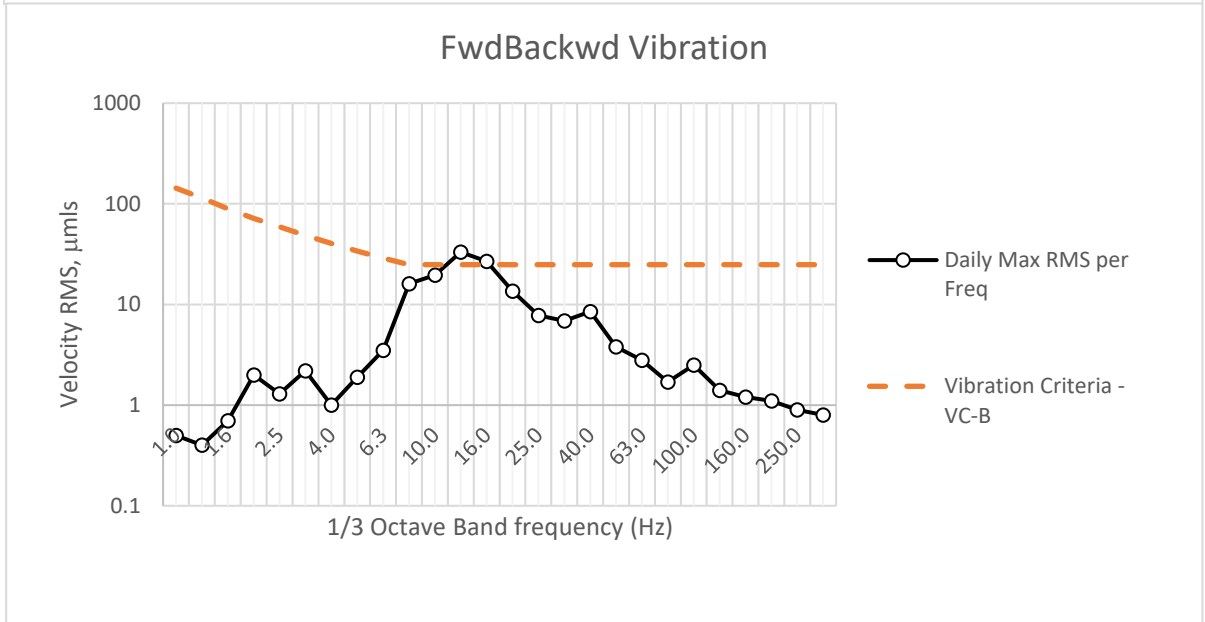
APPENDIX B – VIBRATION MONITORING RESULTS

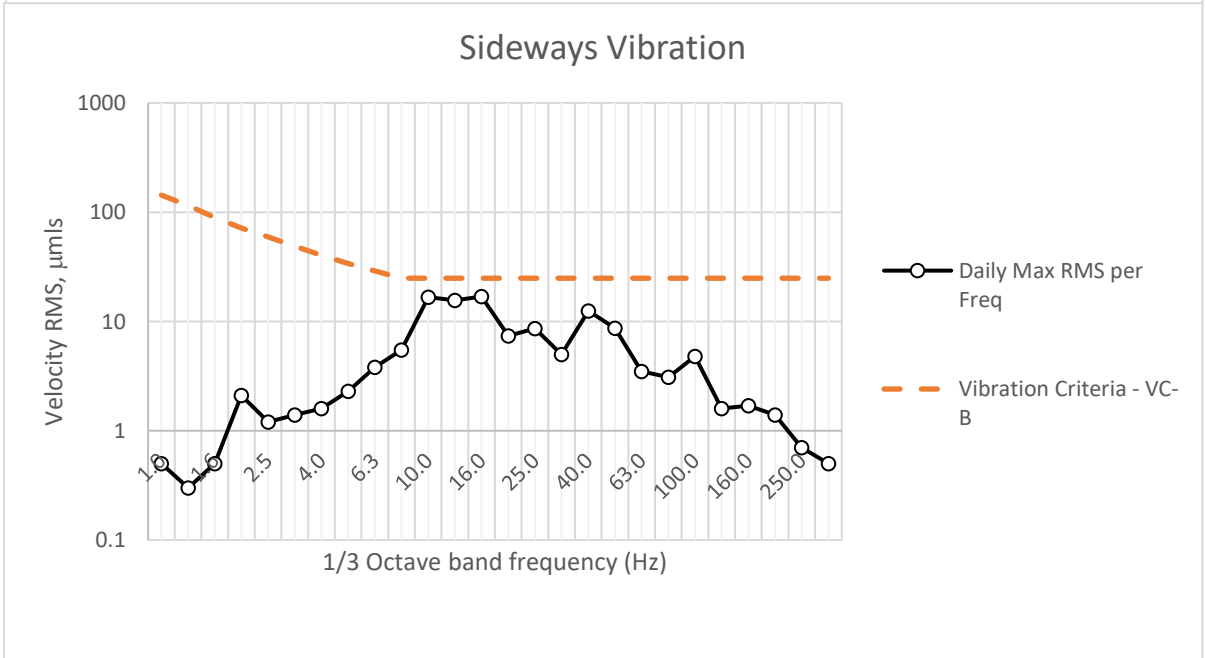
Note that only dates where exceedances of events were experienced have been provided as per discussion with relevant stakeholders.

CENTENARY INSTITUTE – LEVEL 1 LASER IMAGING ROOM

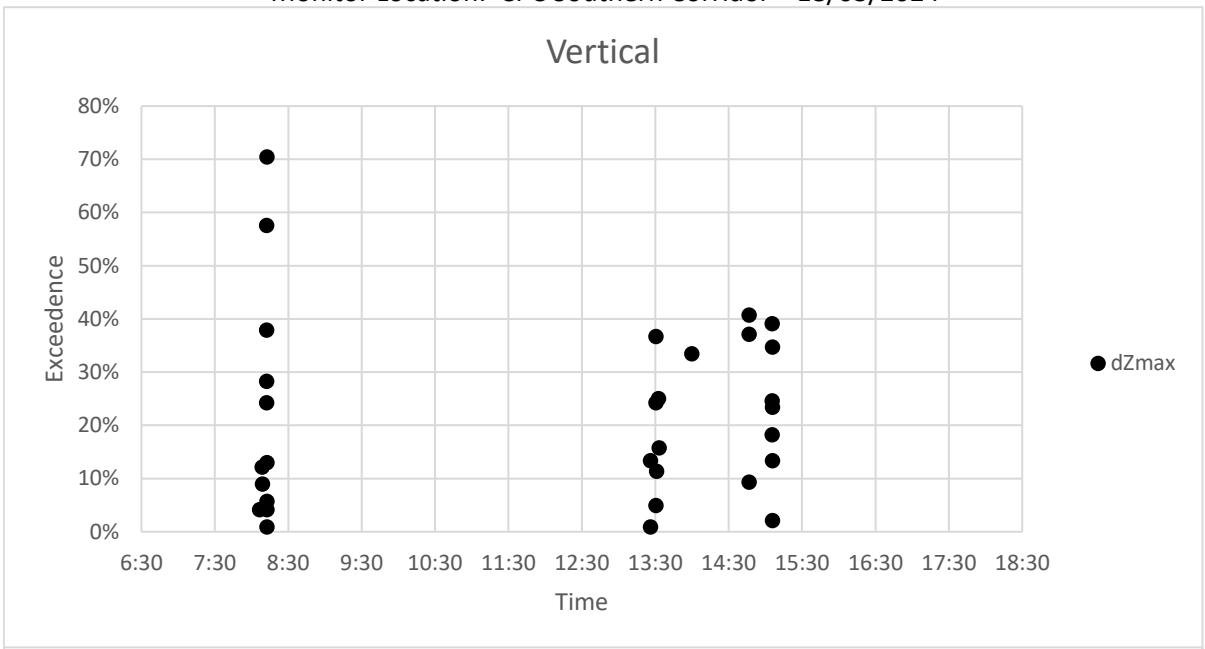
Monitor Location: CPC Southern Corridor 18/03/2024

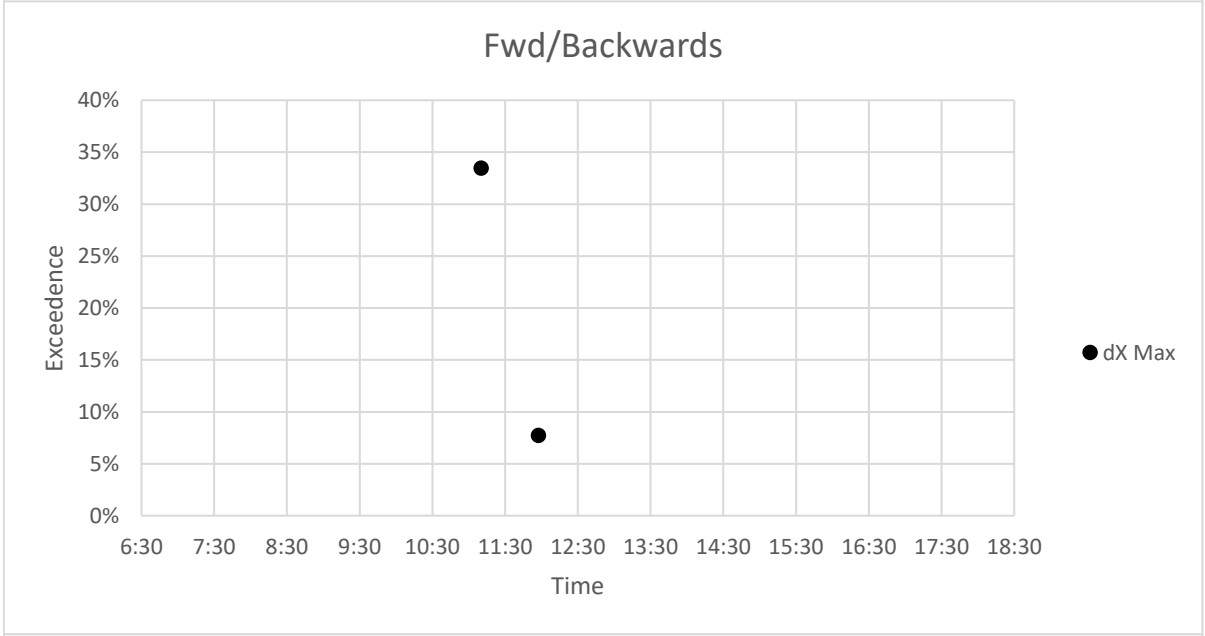


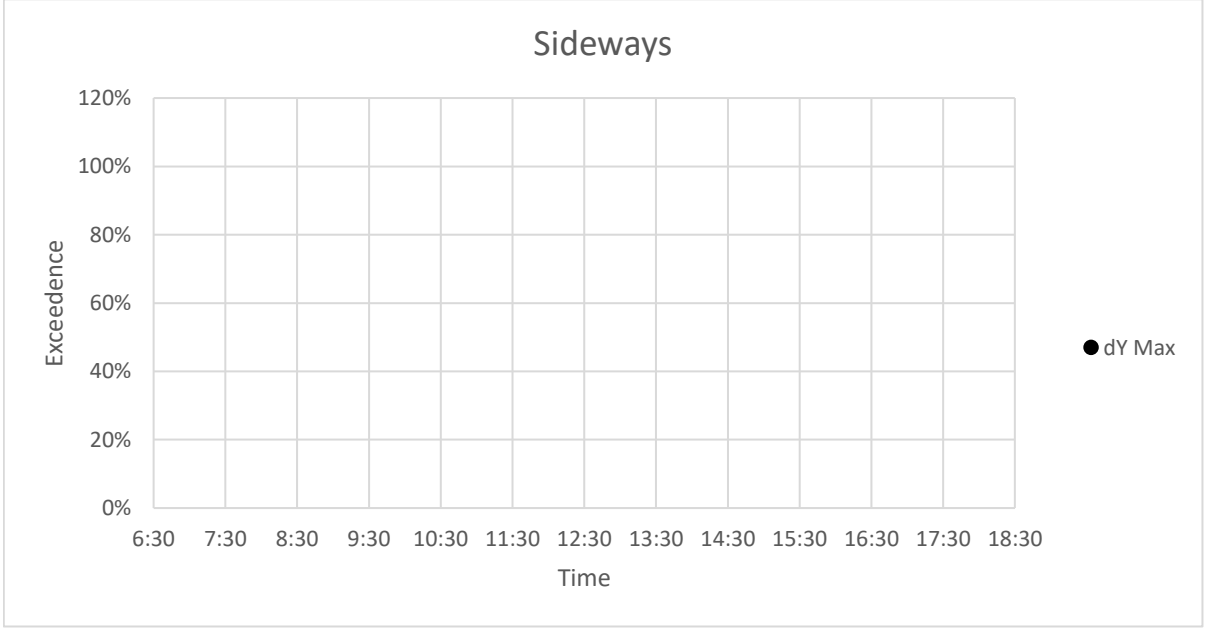




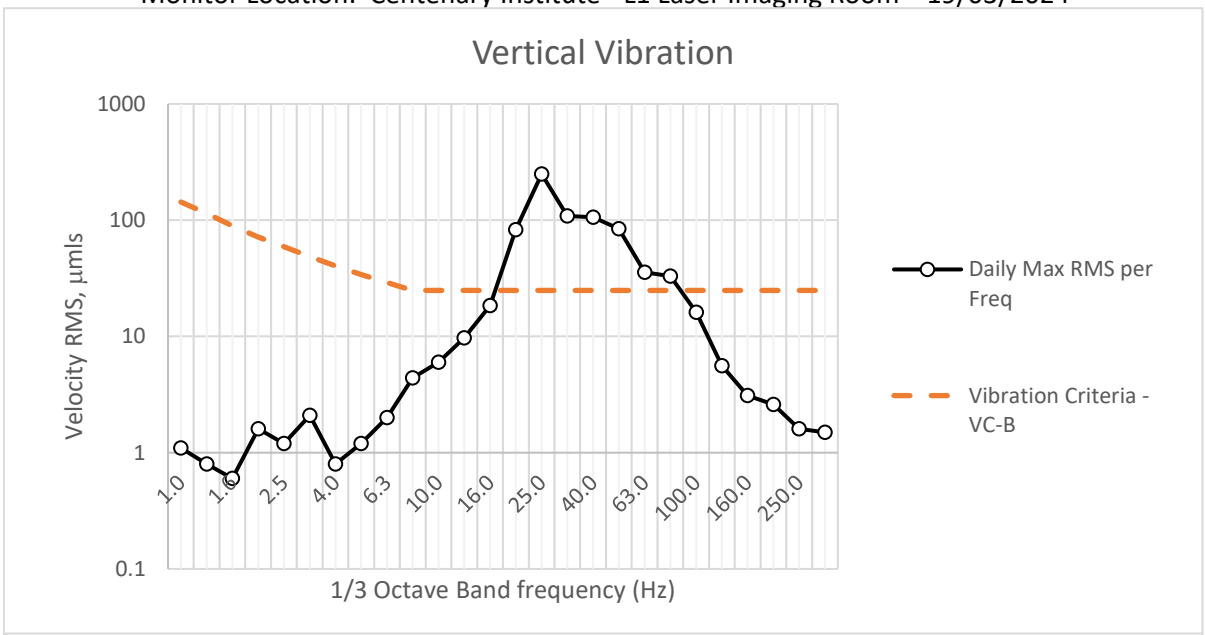
Monitor Location: CPC Southern Corridor 18/03/2024

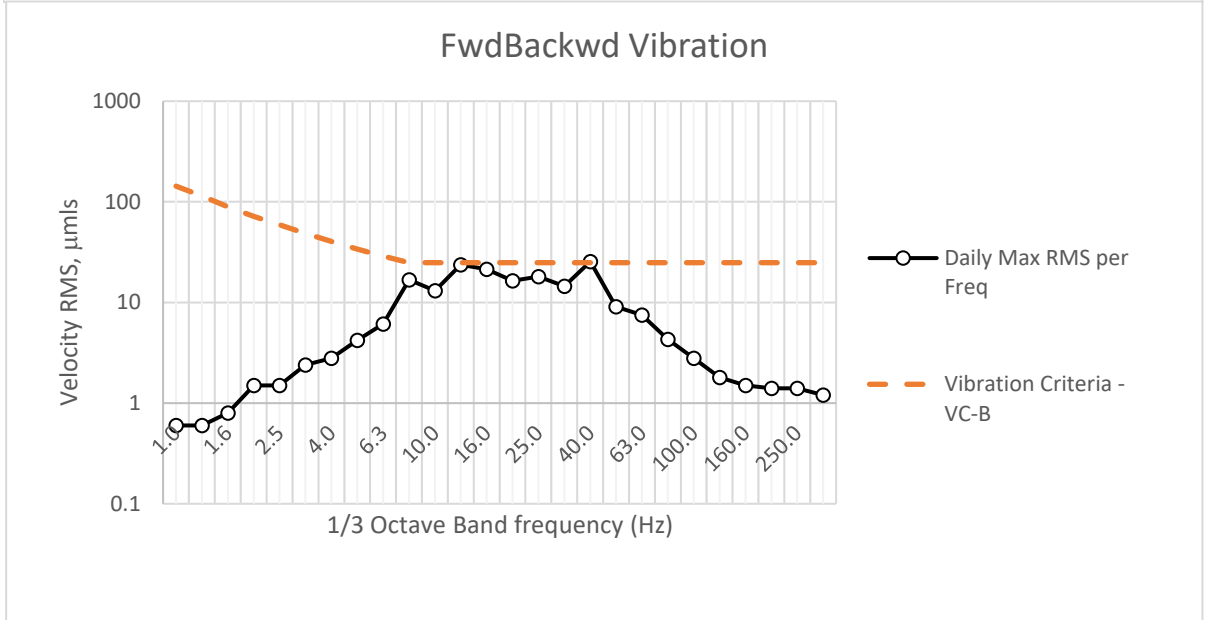


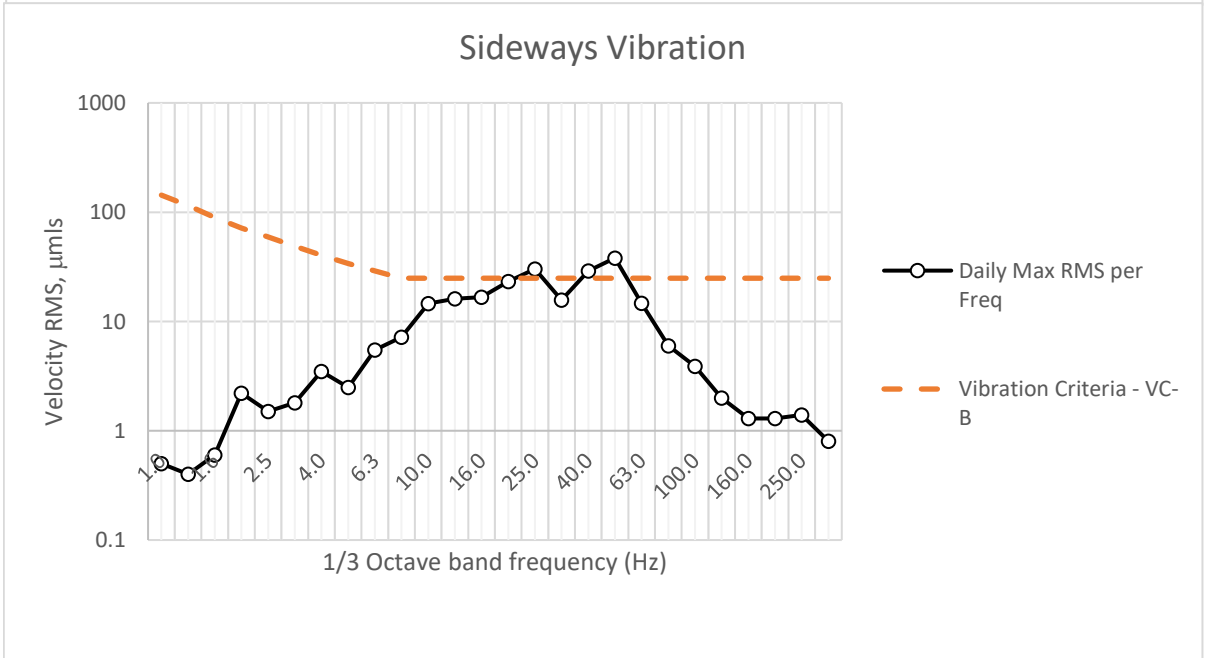




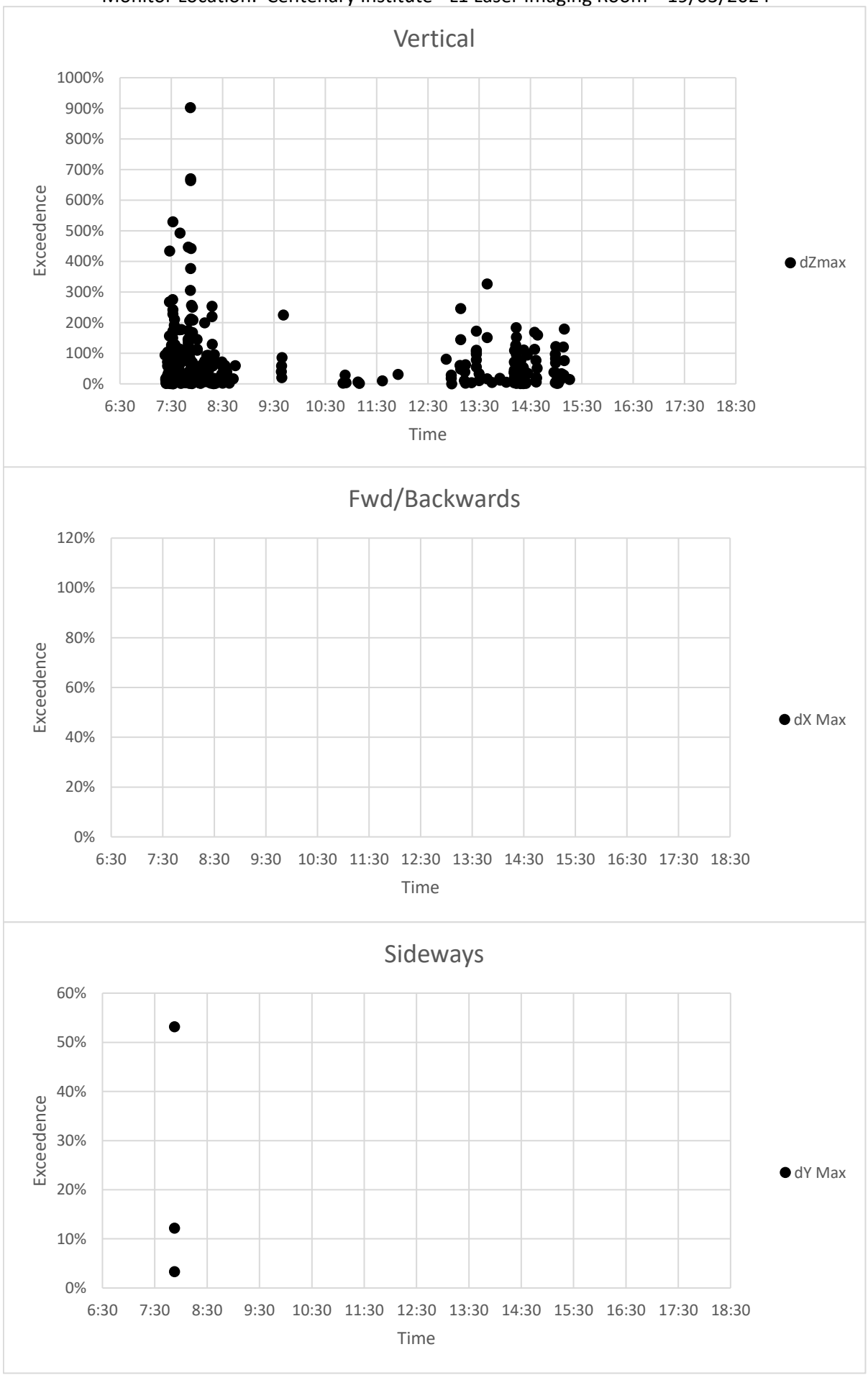
Monitor Location: Centenary Institute - L1 Laser Imaging Room 19/03/2024



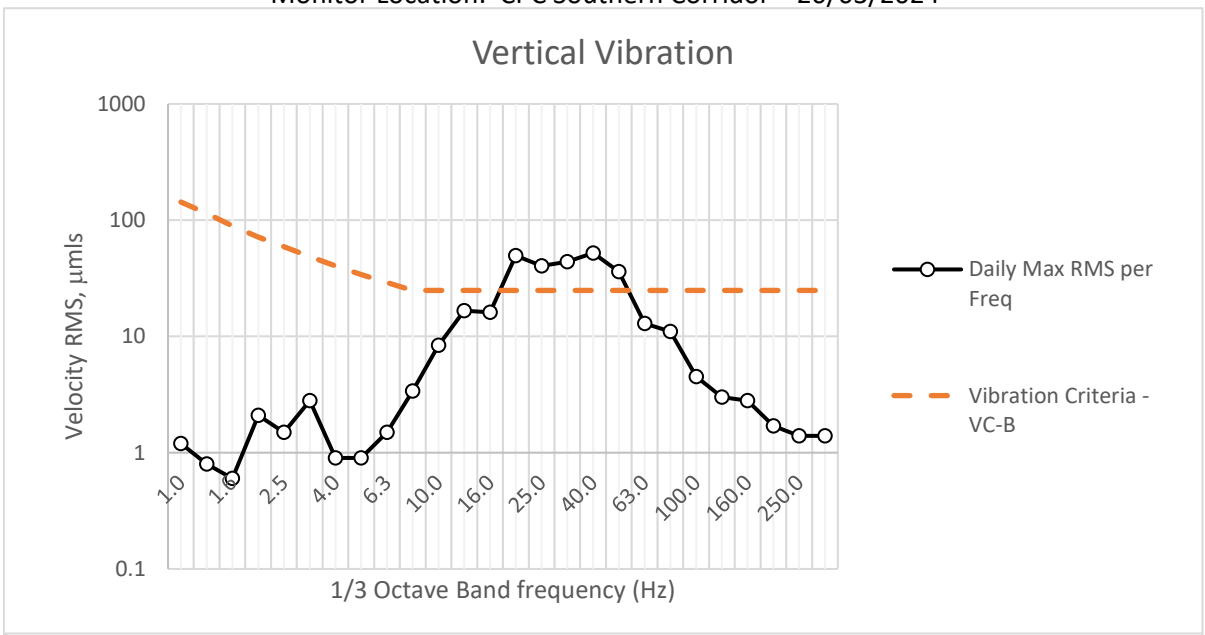


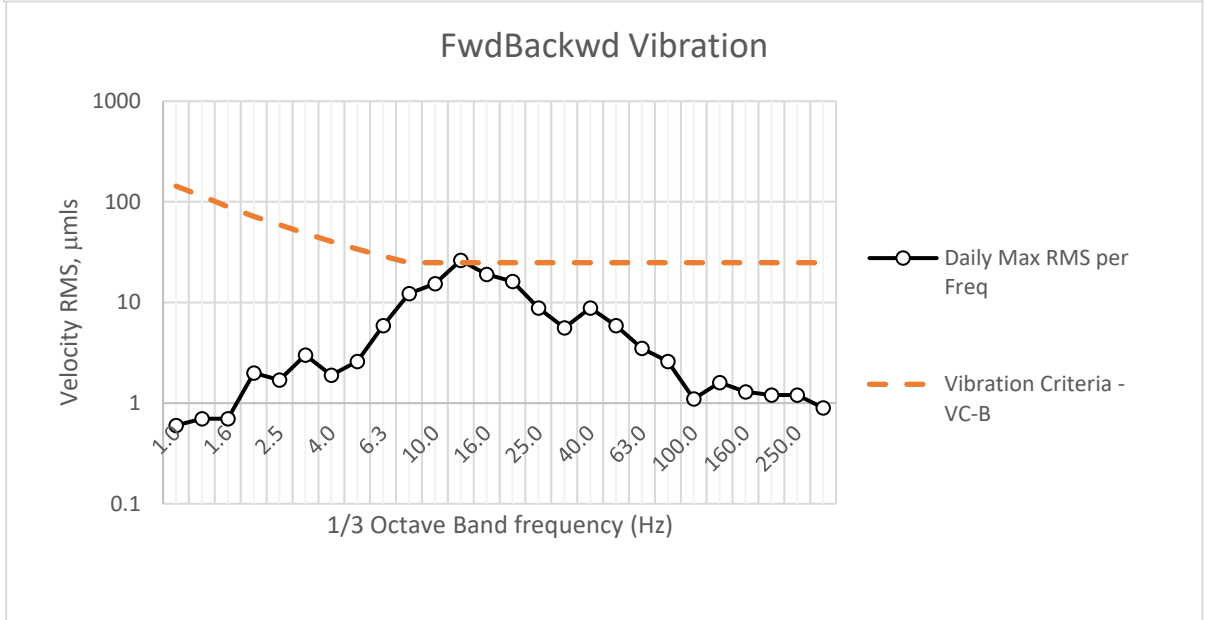


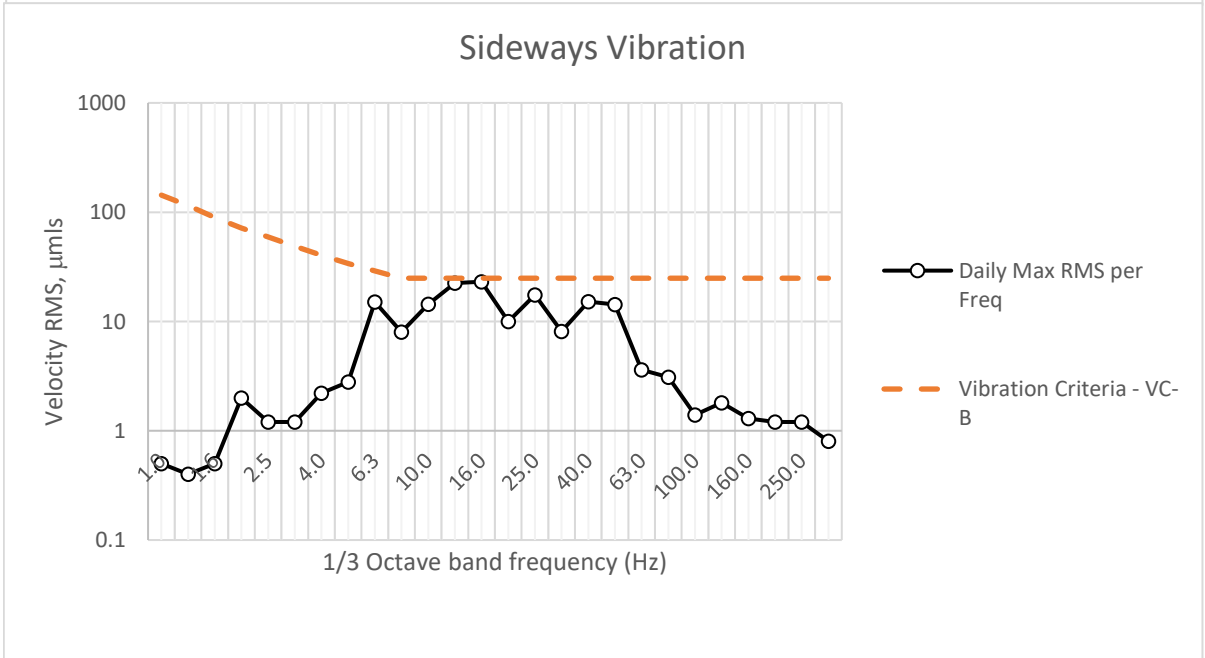
Monitor Location: Centenary Institute - L1 Laser Imaging Room 19/03/2024



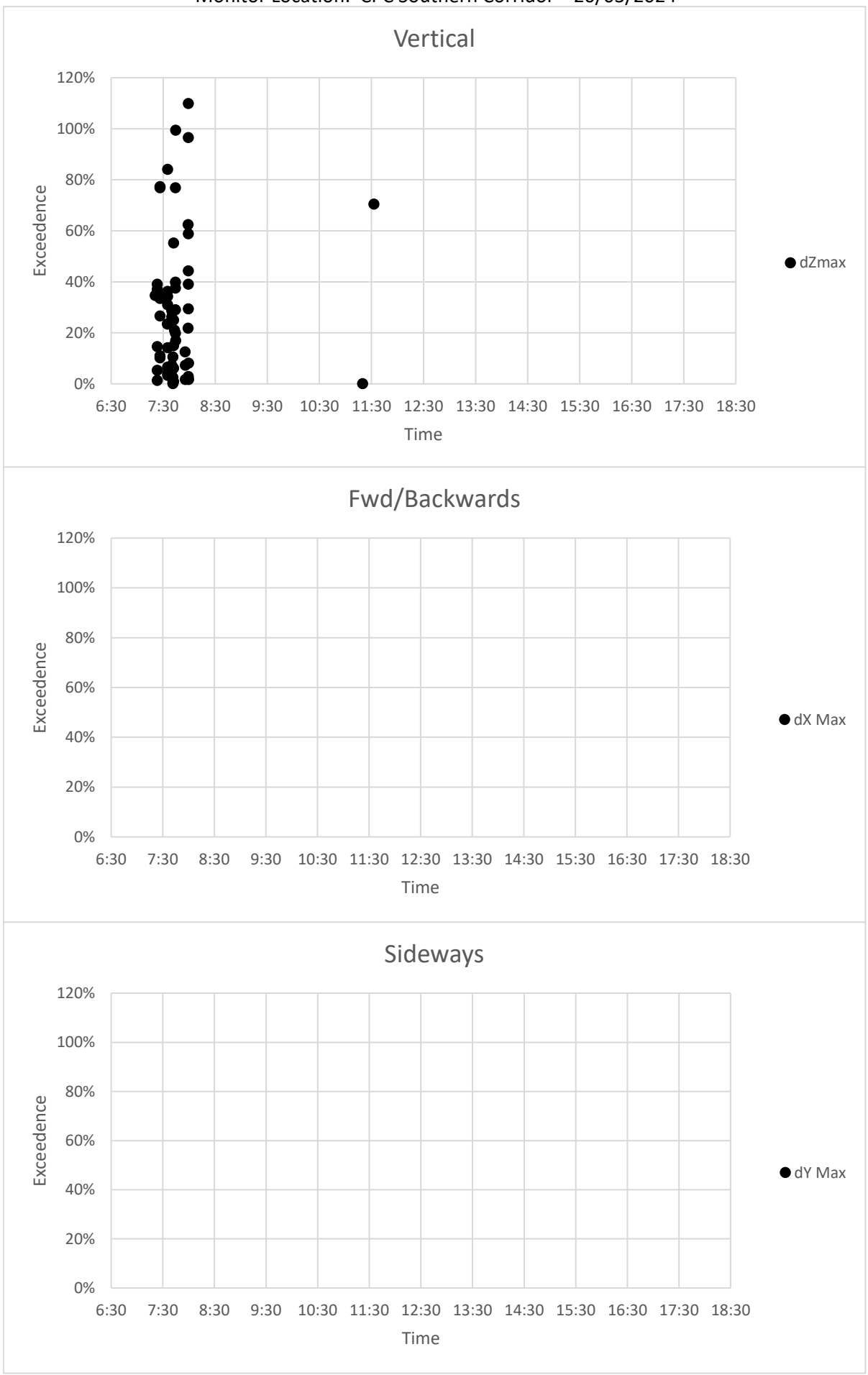
Monitor Location: CPC Southern Corridor 20/03/2024



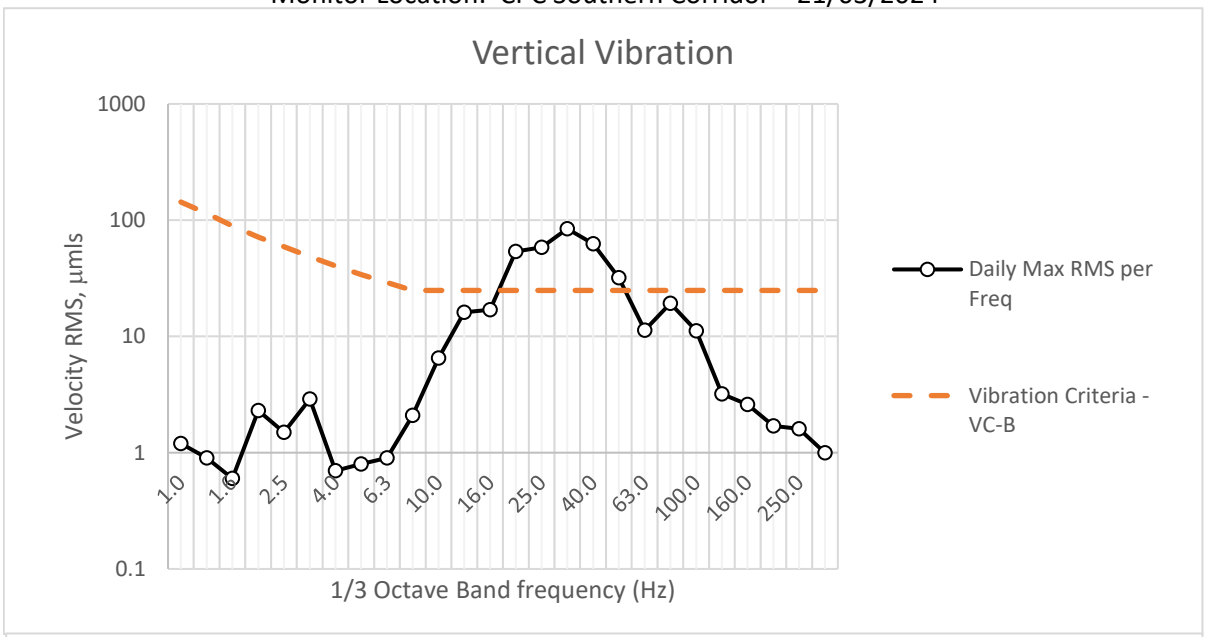


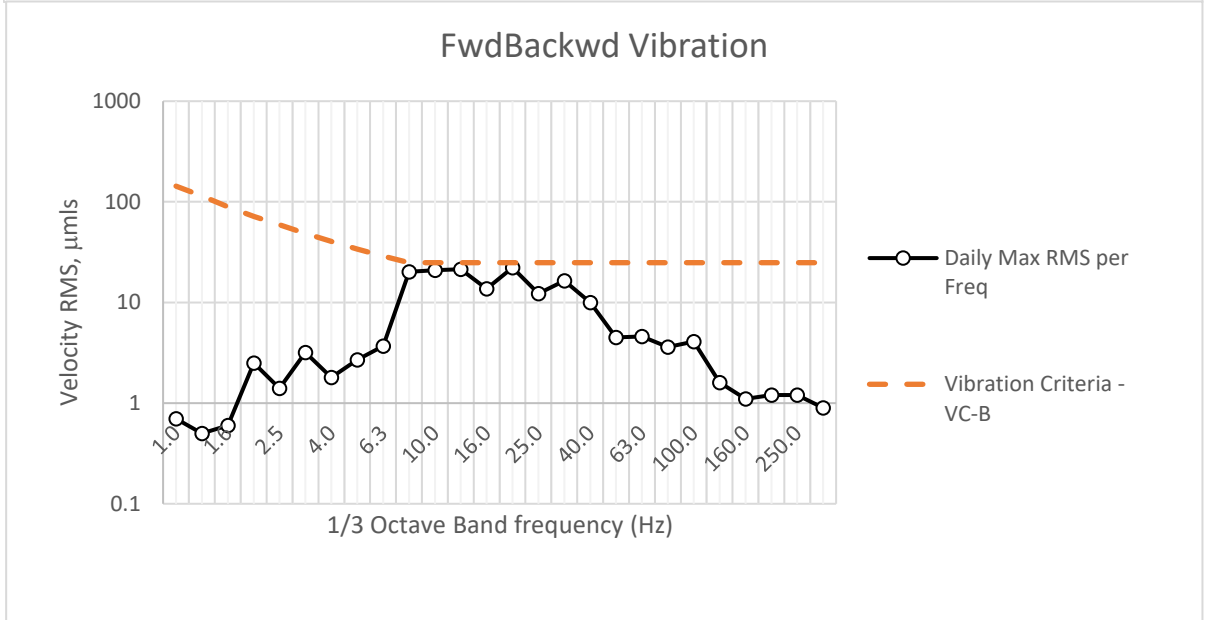


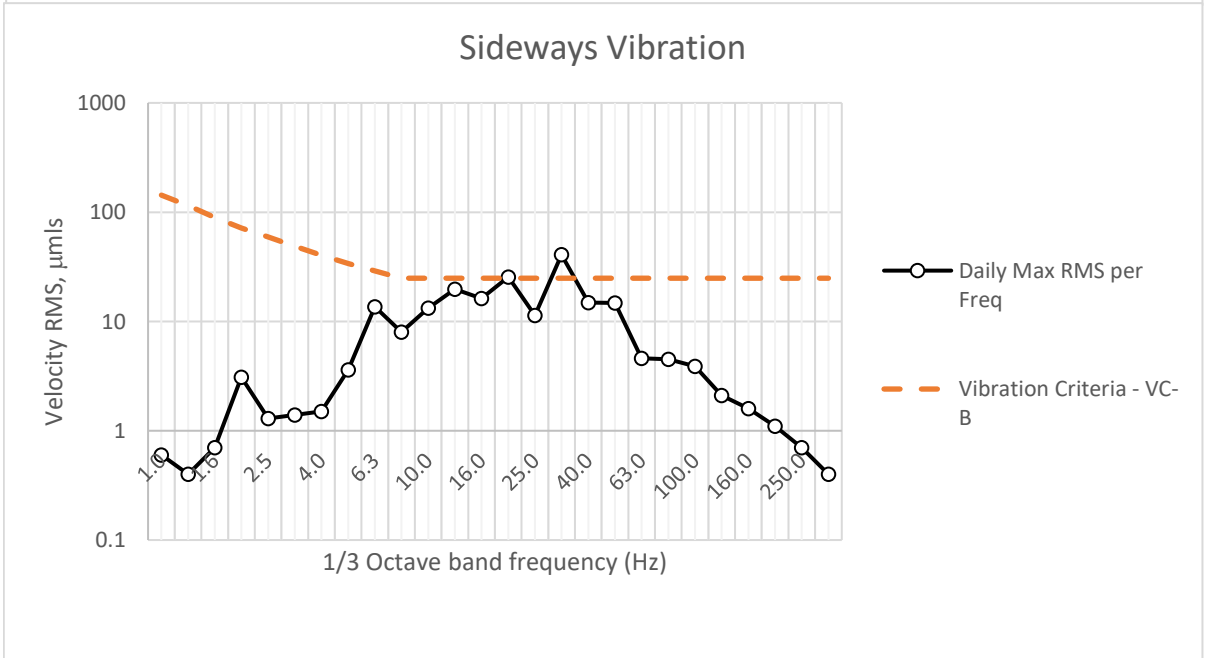
Monitor Location: CPC Southern Corridor 20/03/2024



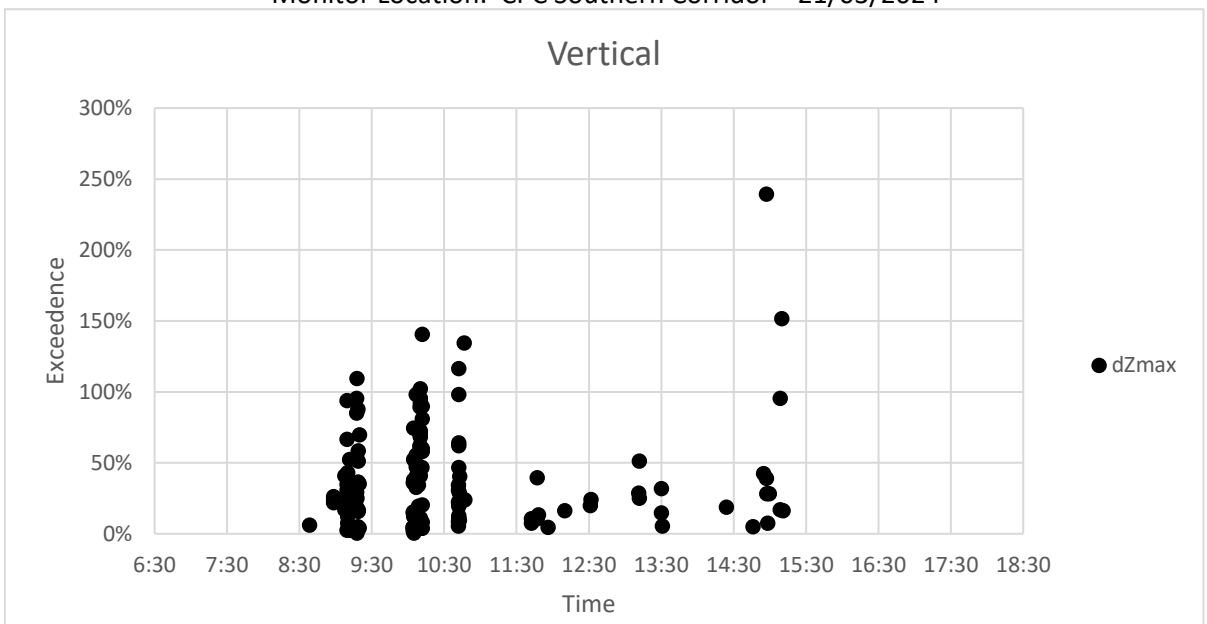
Monitor Location: CPC Southern Corridor 21/03/2024

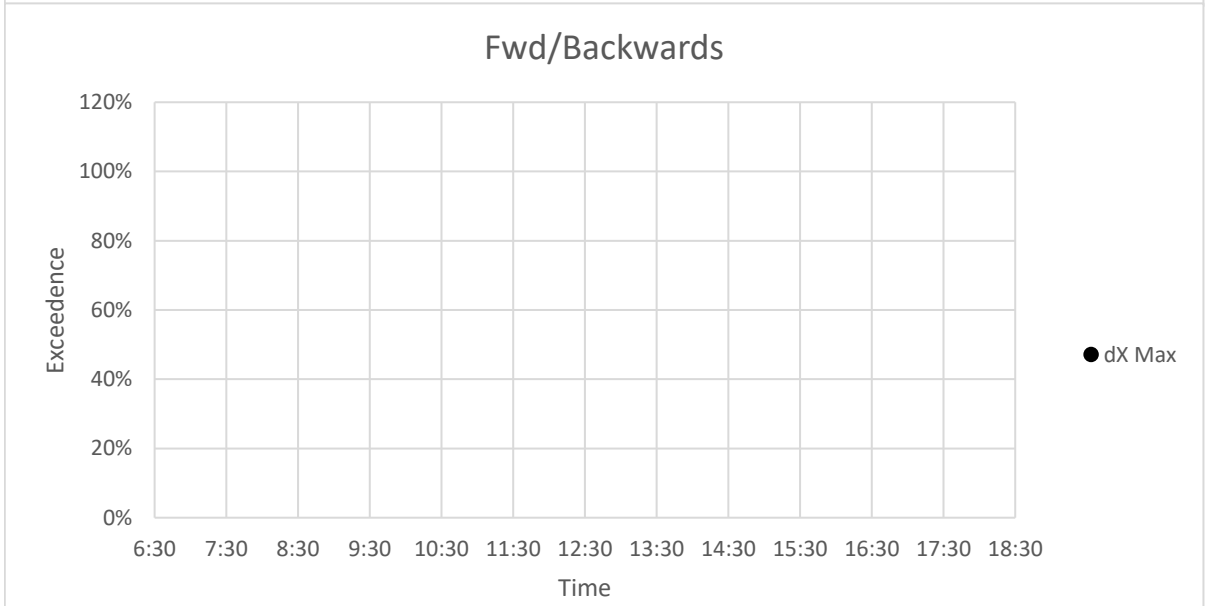


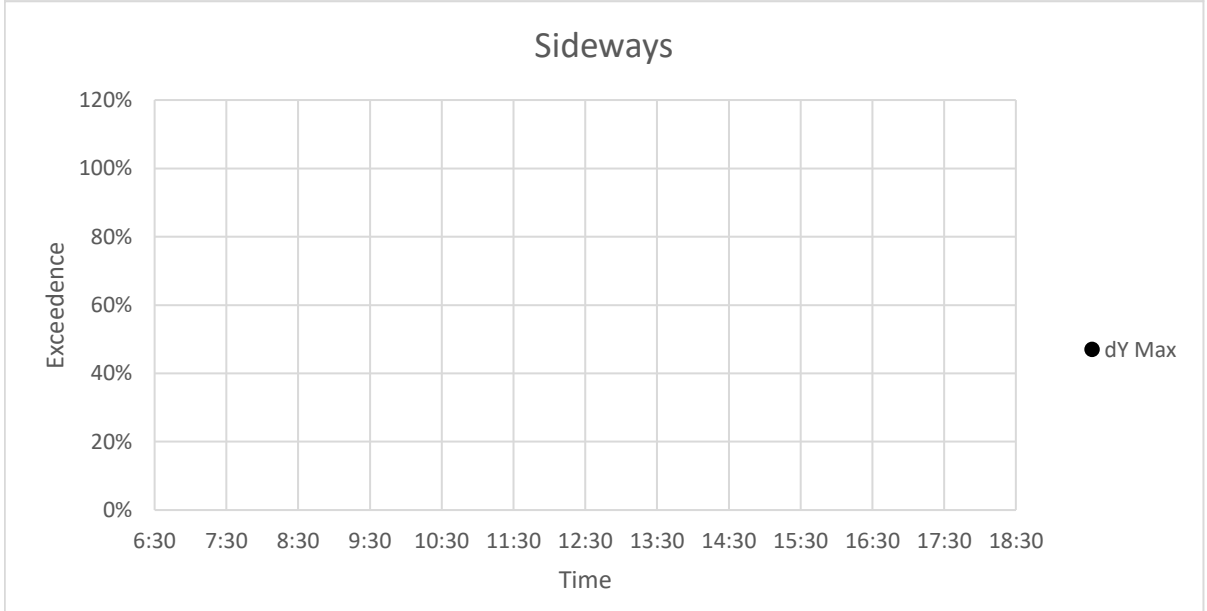




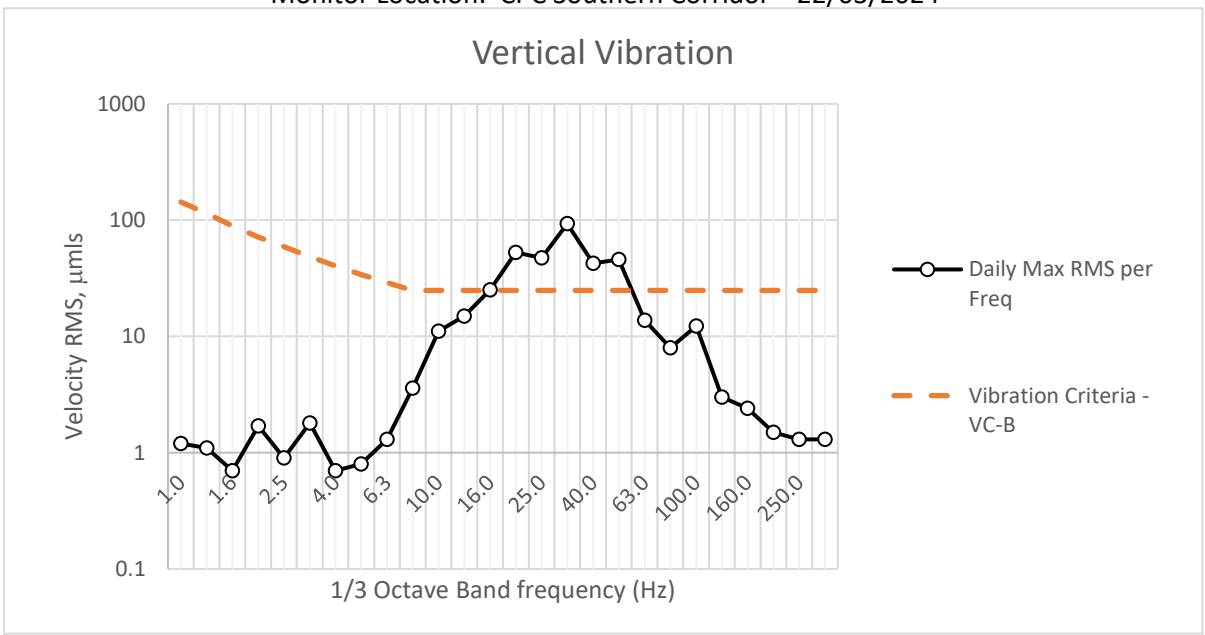
Monitor Location: CPC Southern Corridor 21/03/2024

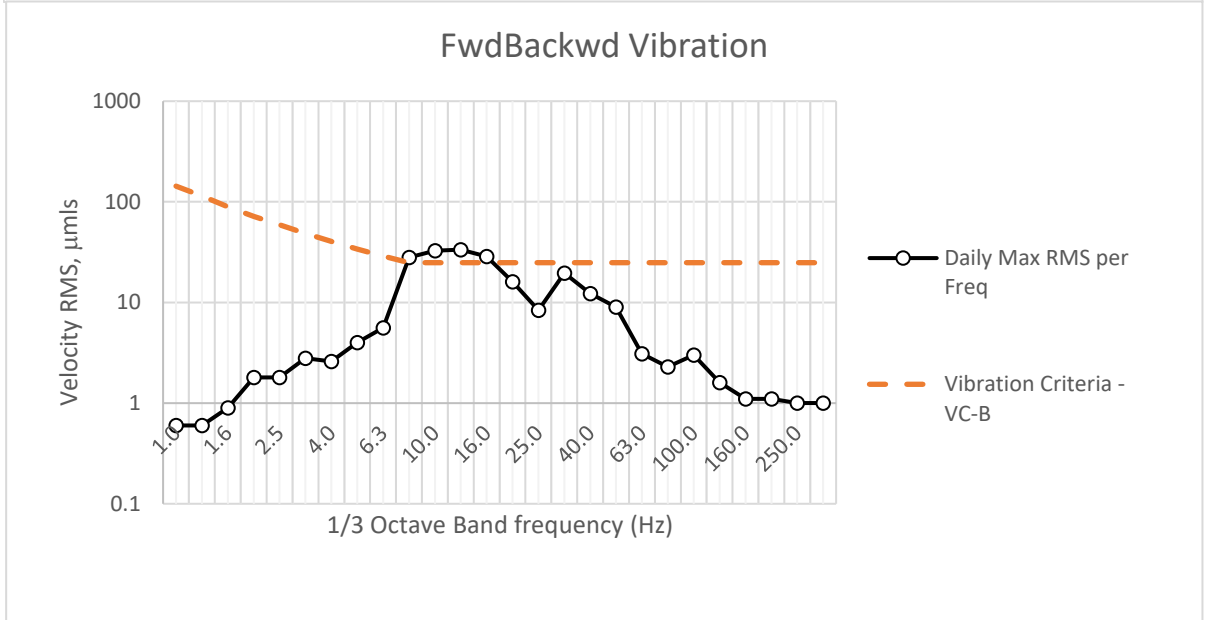


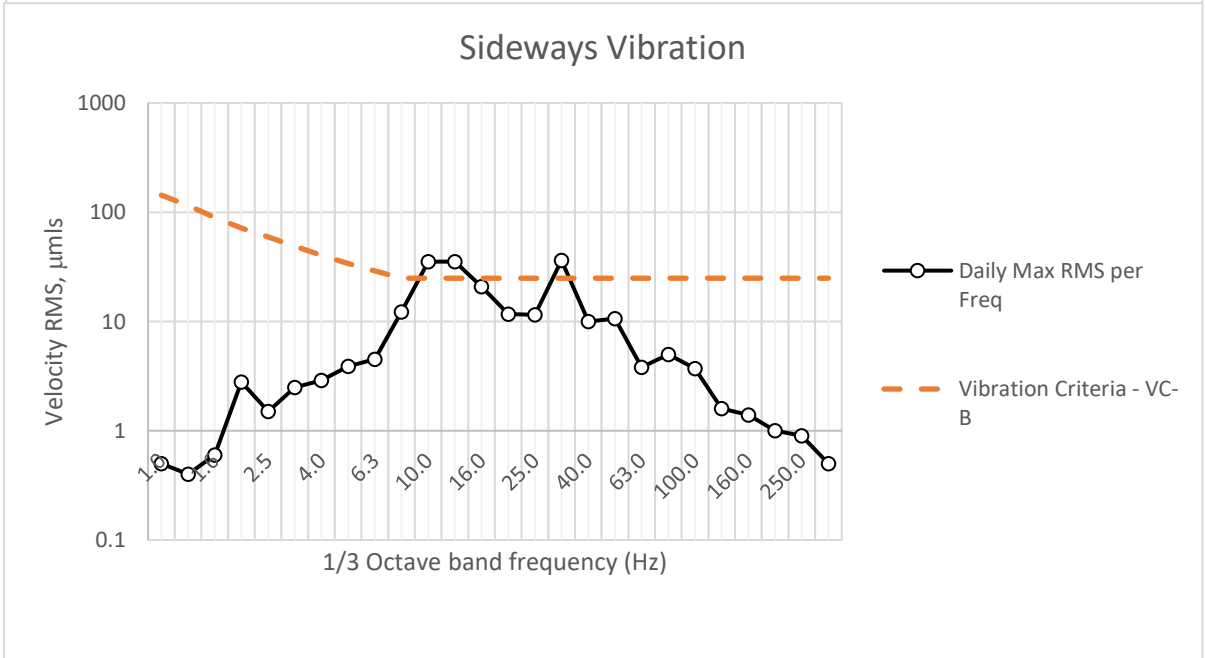




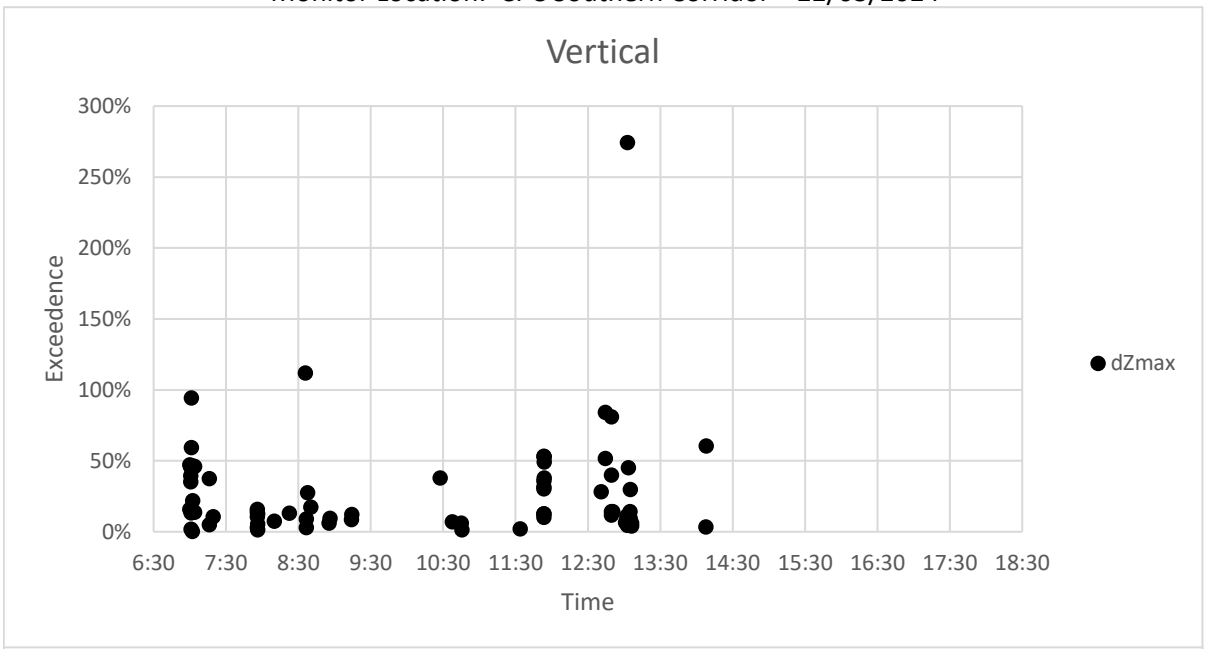
Monitor Location: CPC Southern Corridor 22/03/2024

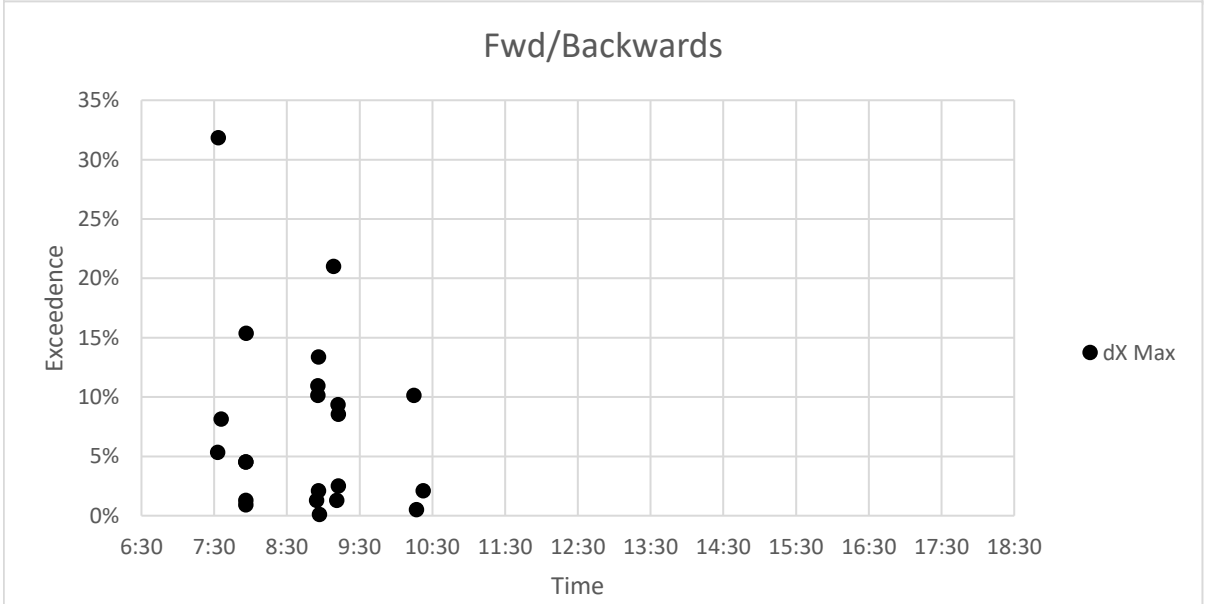


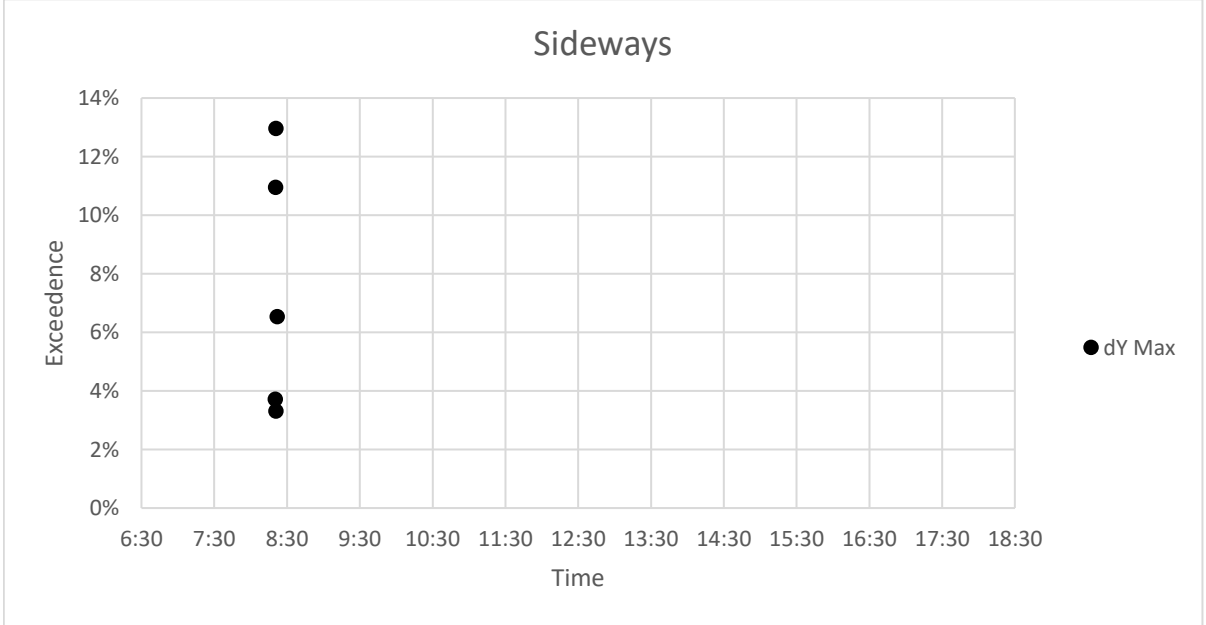




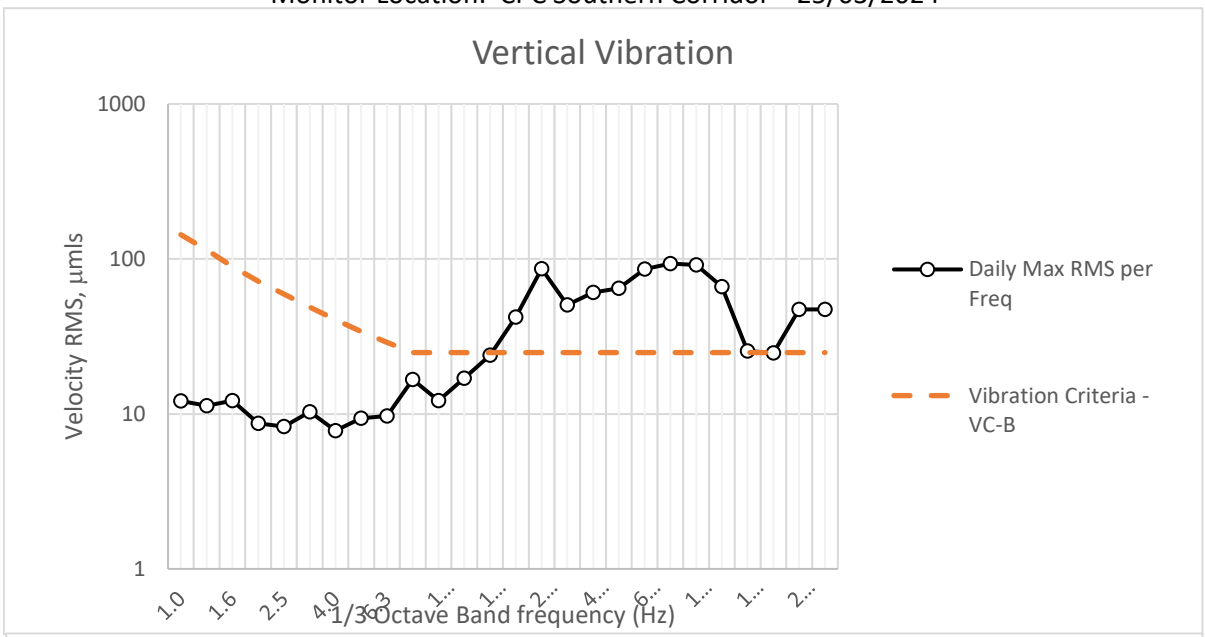
Monitor Location: CPC Southern Corridor 22/03/2024

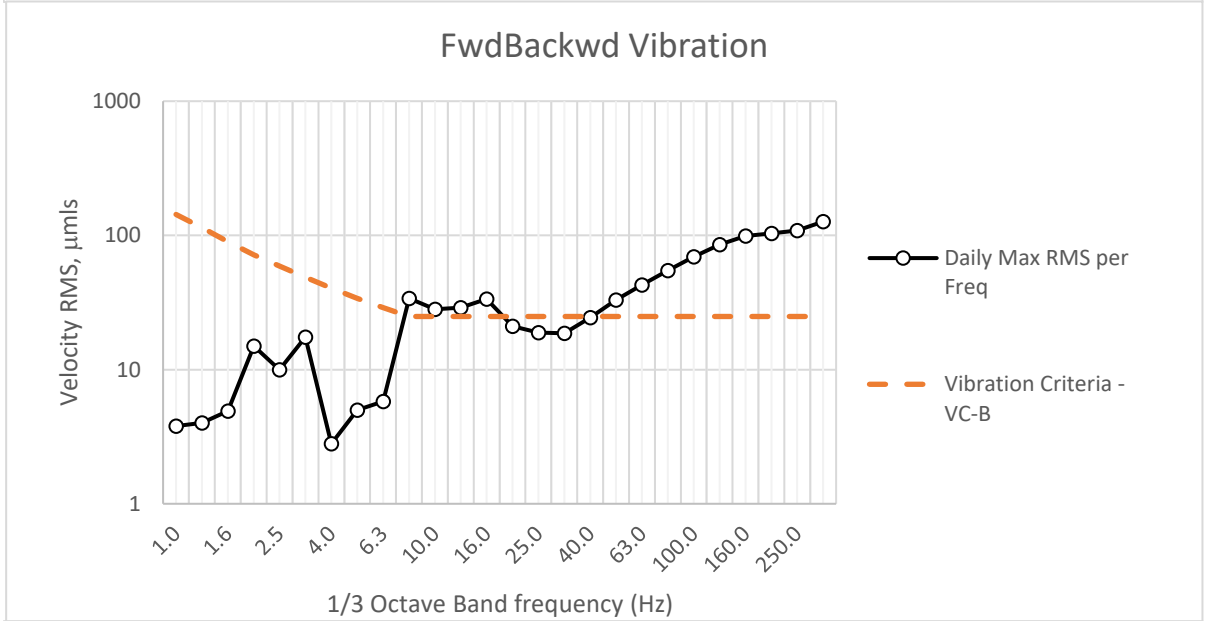


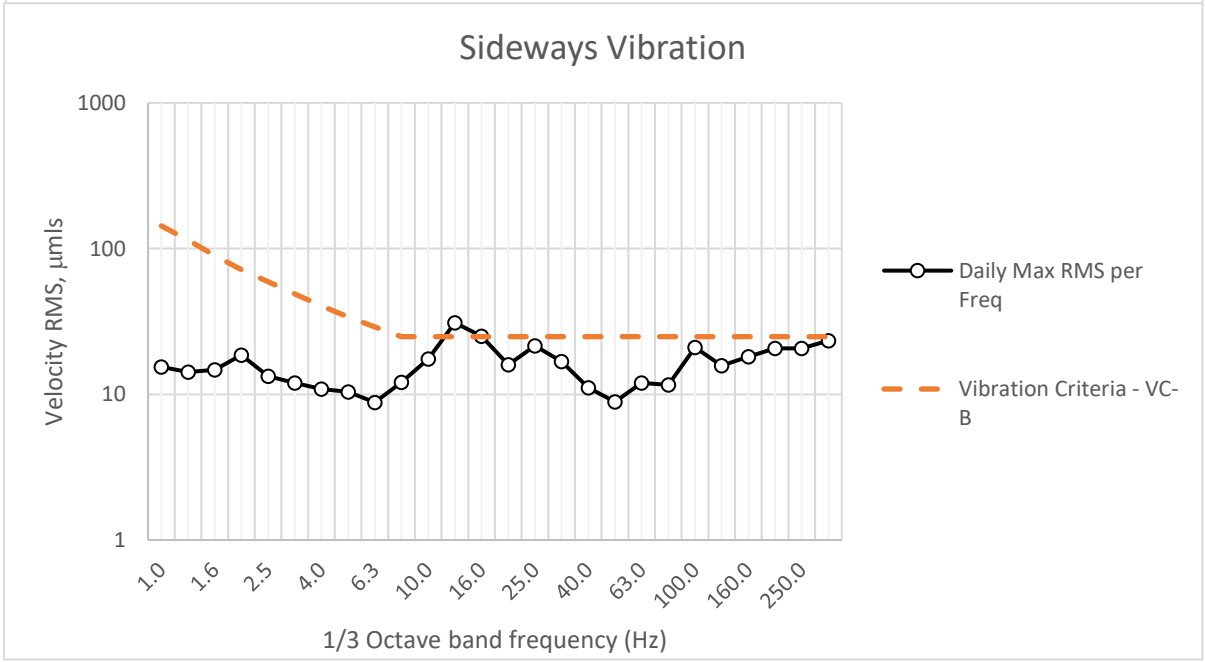




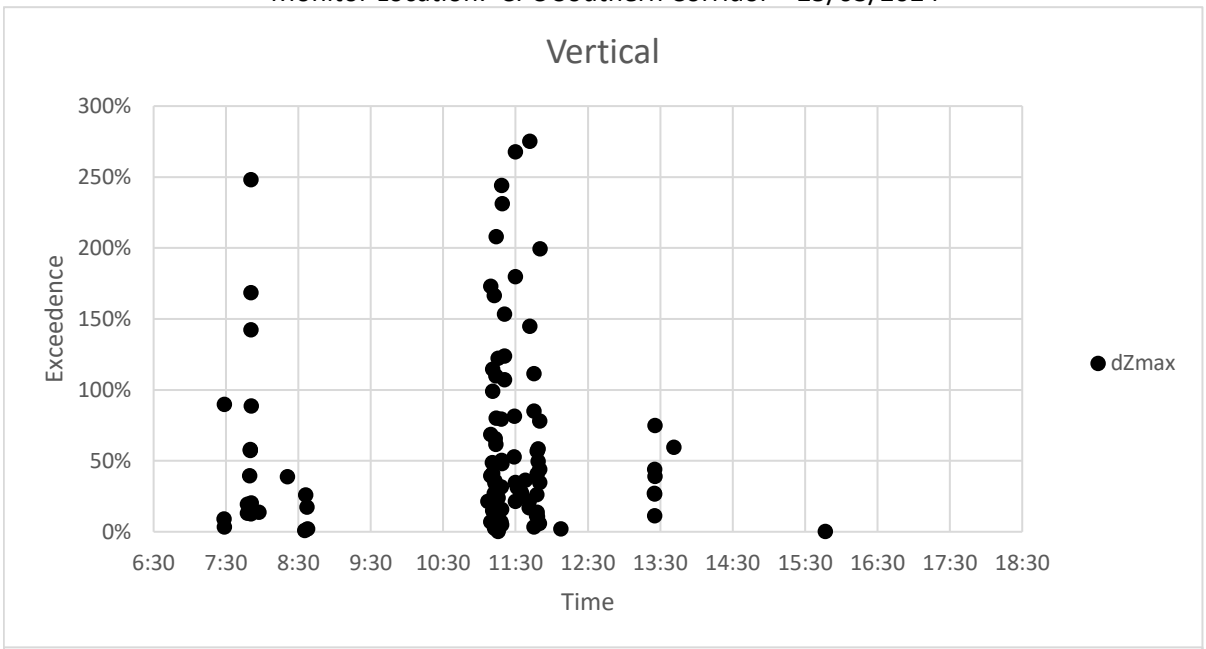
Monitor Location: CPC Southern Corridor 25/03/2024

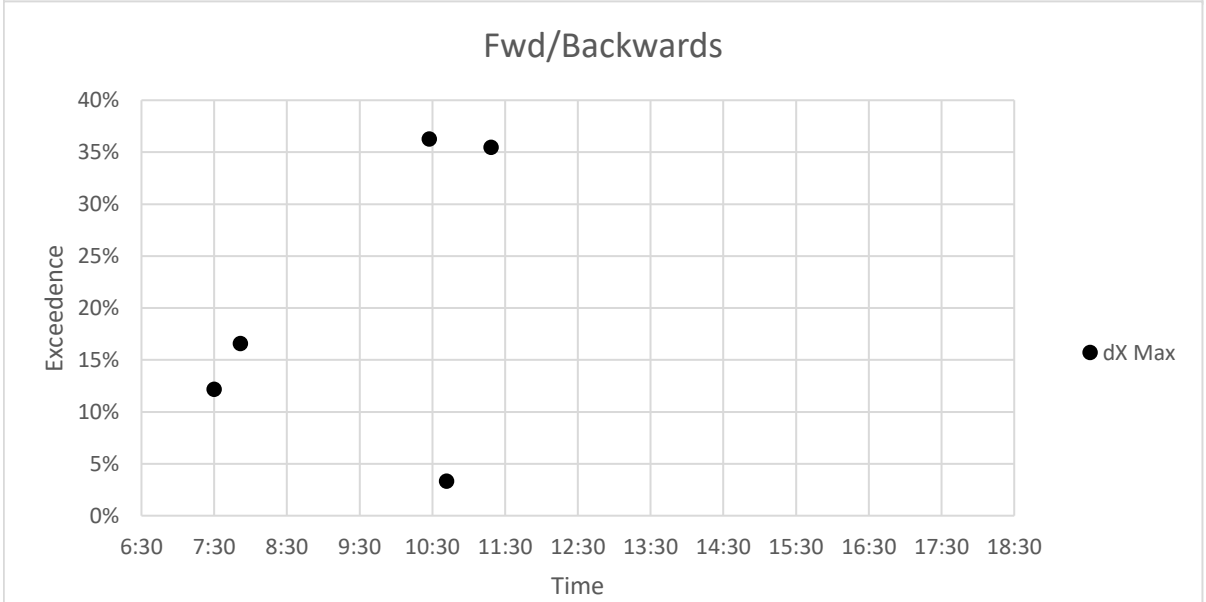


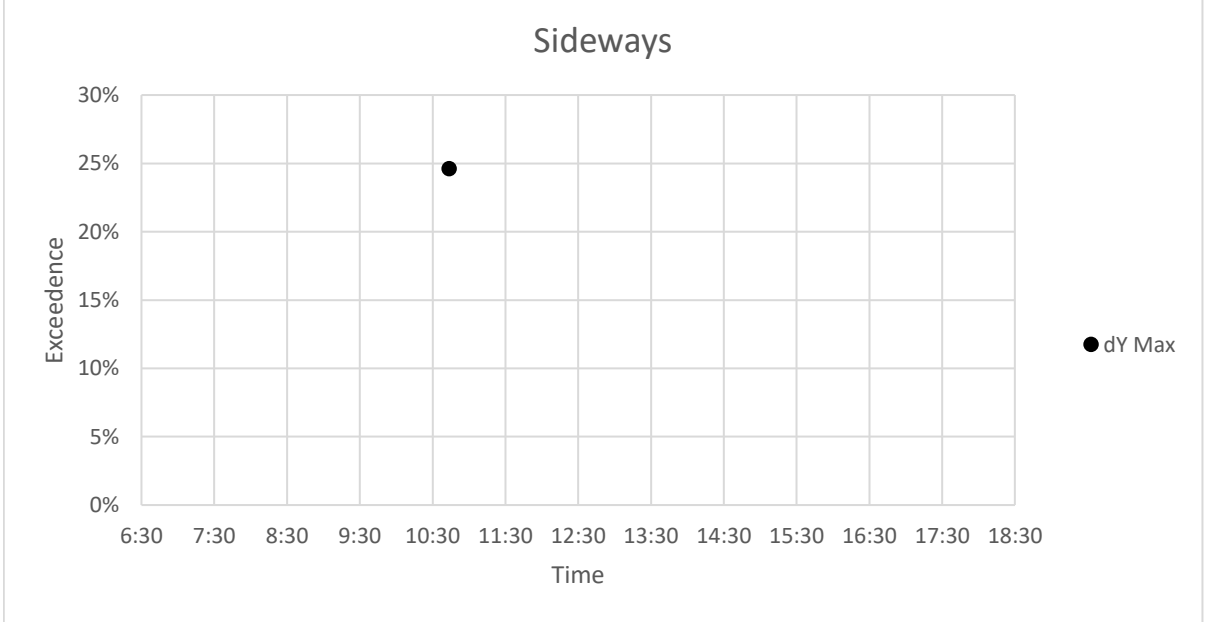




Monitor Location: CPC Southern Corridor 25/03/2024





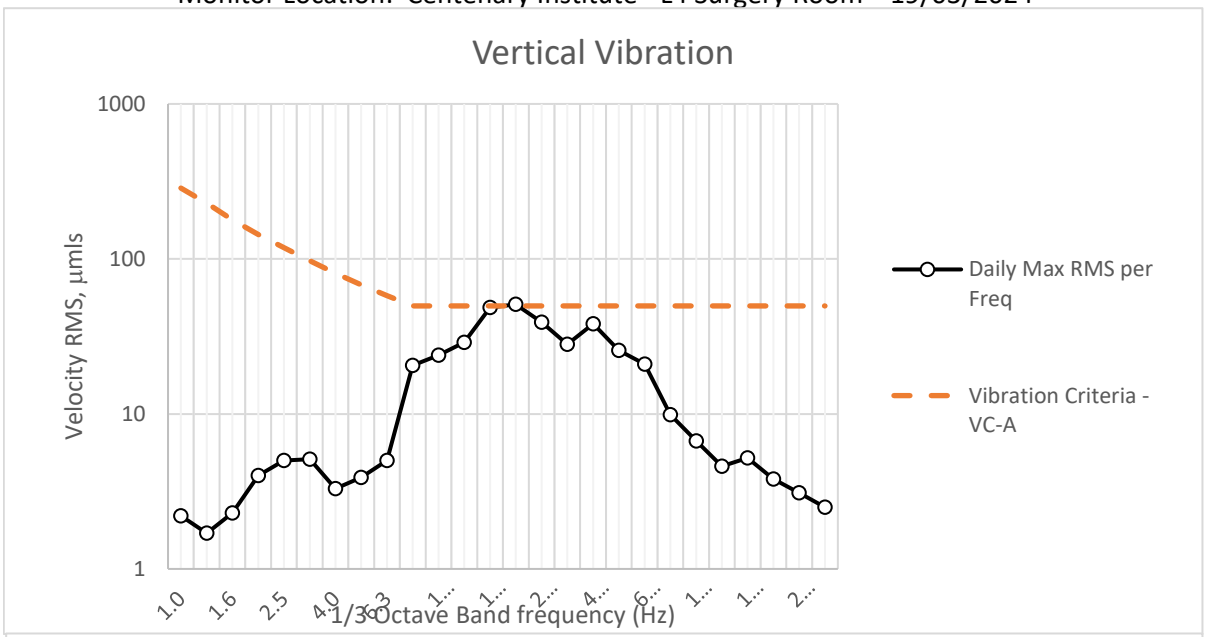


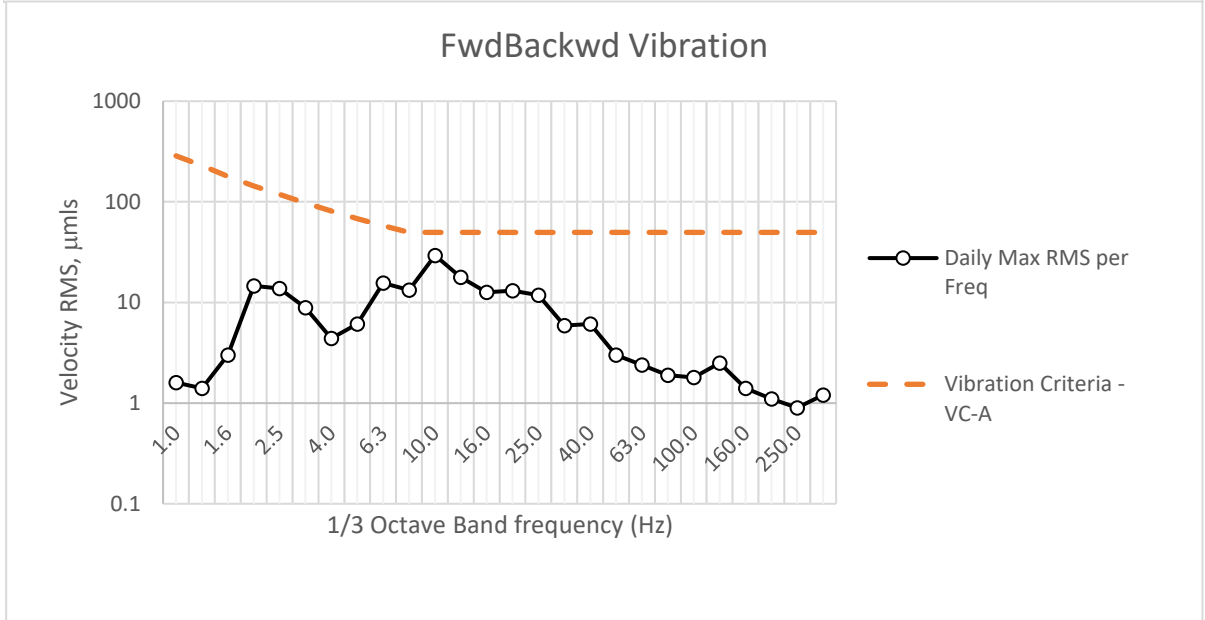
CENTENARY INSTITUTE – LEVEL 3 FISH TANKS

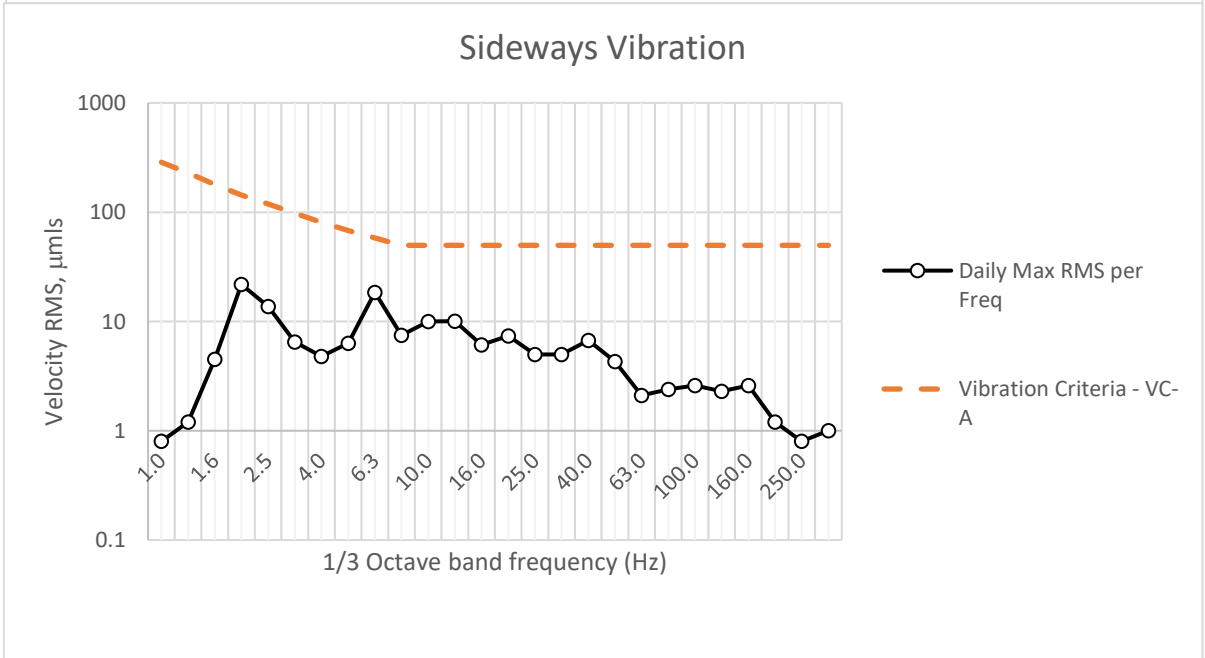
No exceedances occurred during the monitoring period.

CENTENARY INSTITUTE – LEVEL 4 SURGERY ROOM (SOUTHERN FAÇADE)

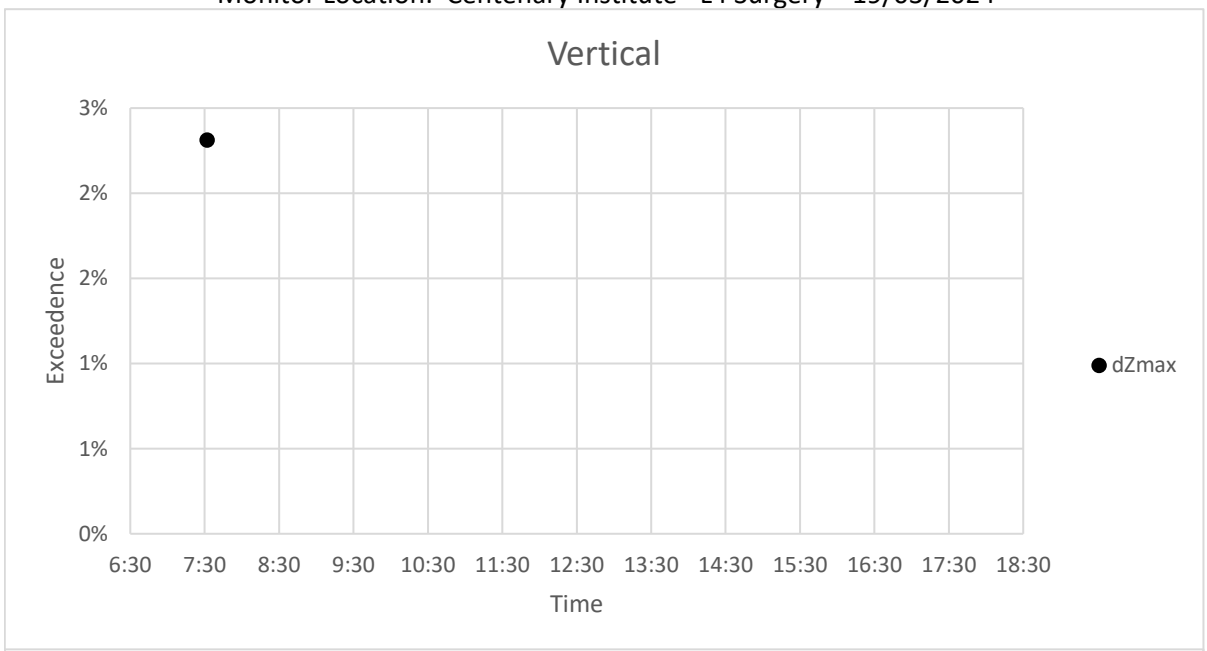
Monitor Location: Centenary Institute - L4 Surgery Room 19/03/2024

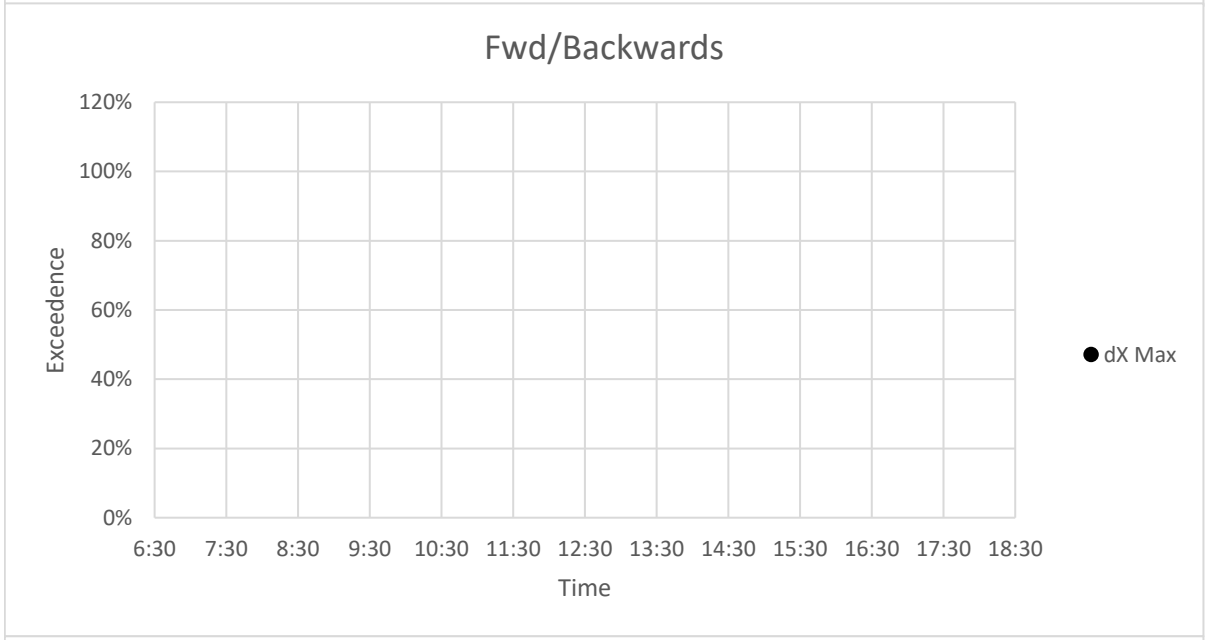


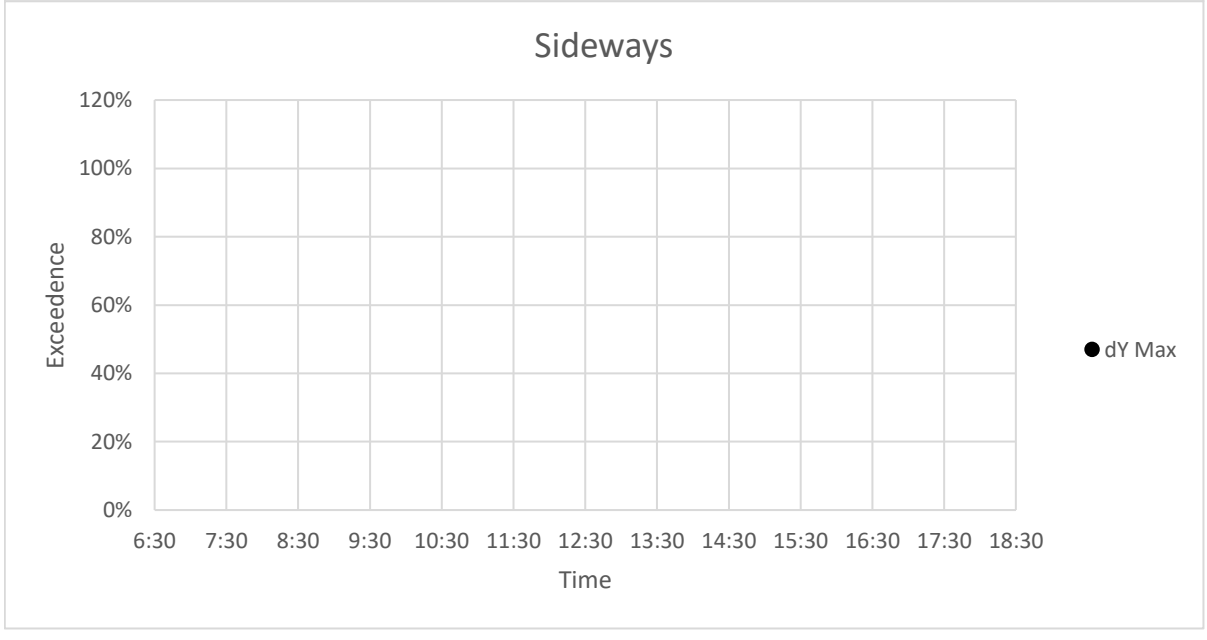




Monitor Location: Centenary Institute - L4 Surgery 19/03/2024





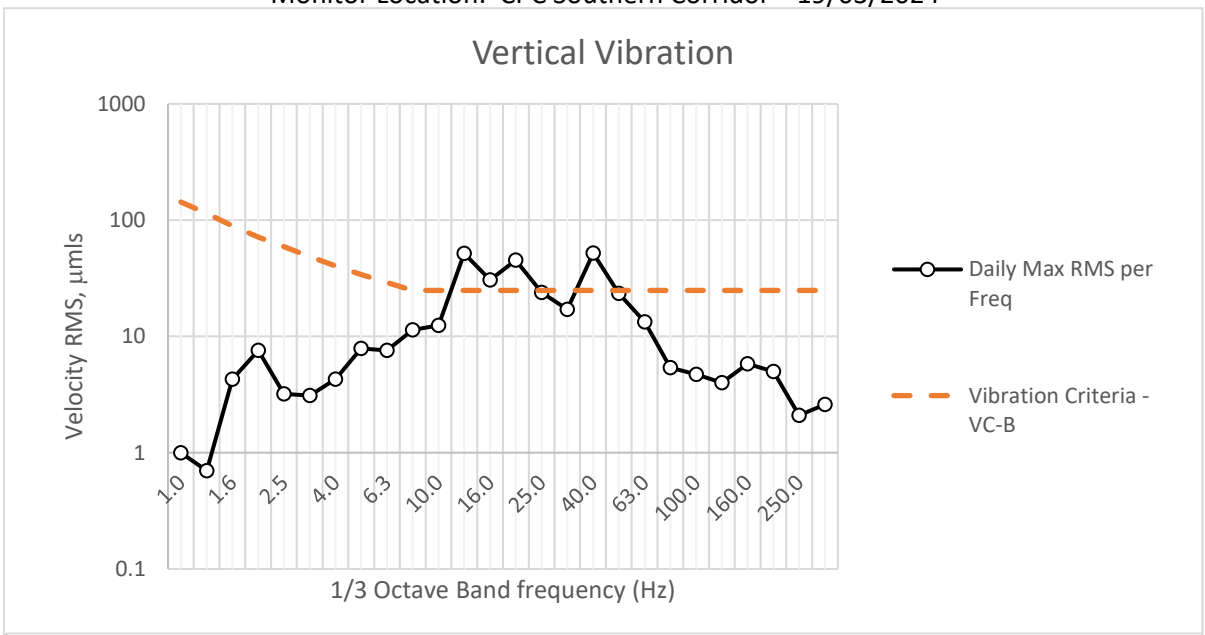


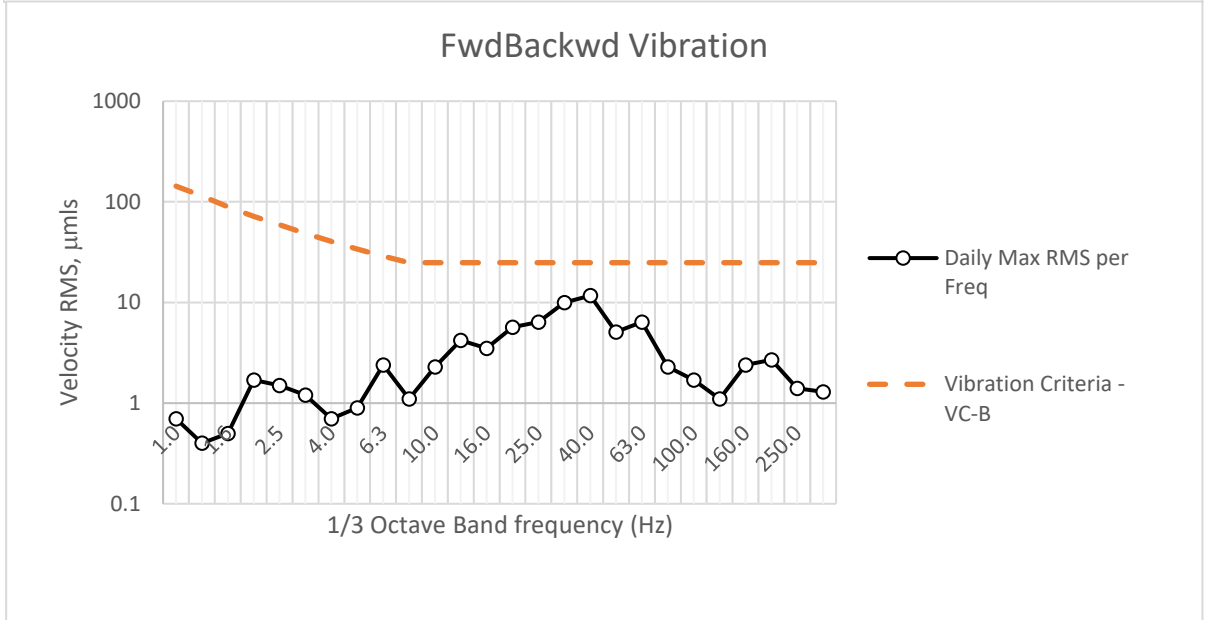
CENTENARY INSTITUTE – LEVEL 4 BATHROOM (NORTHERN FAÇADE)

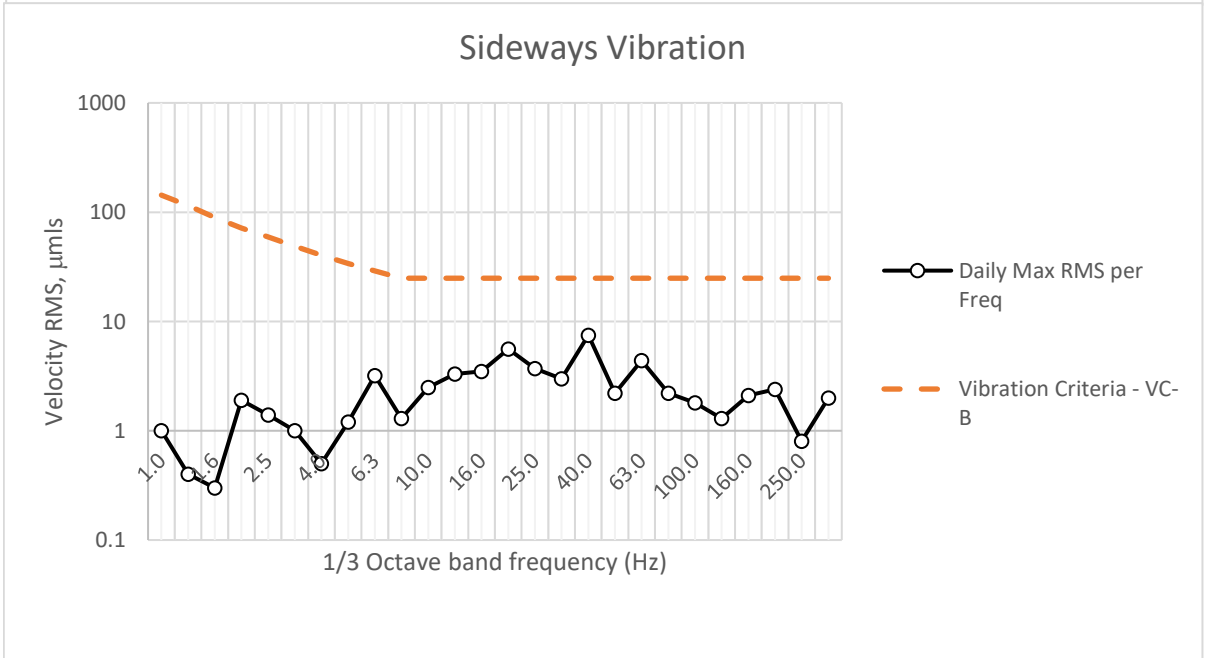
No exceedances occurred during the monitoring period.

CHARLES PERKINS CENTRE – LEVEL B1 SOUTHERN CORRIDOR

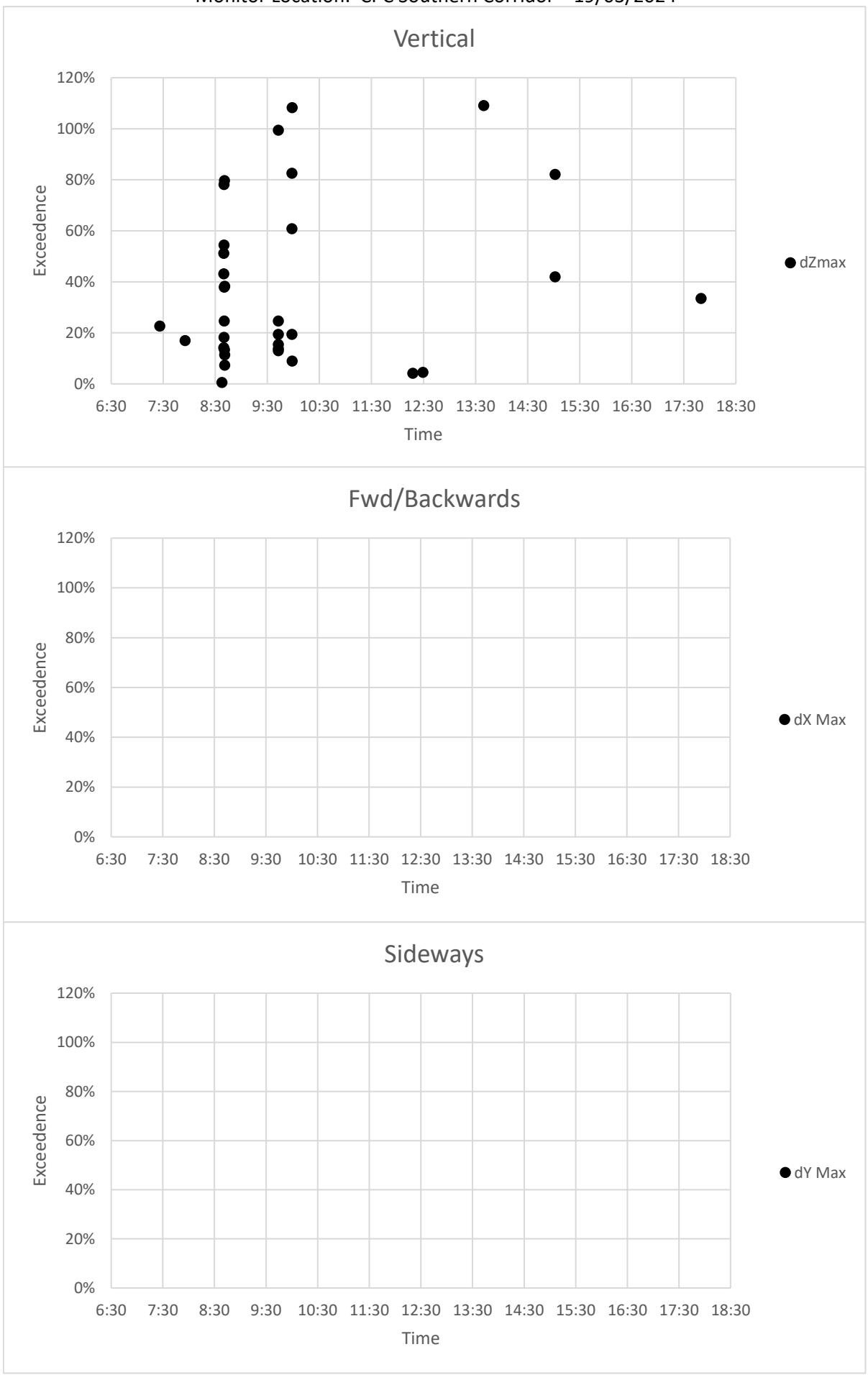
Monitor Location: CPC Southern Corridor 19/03/2024



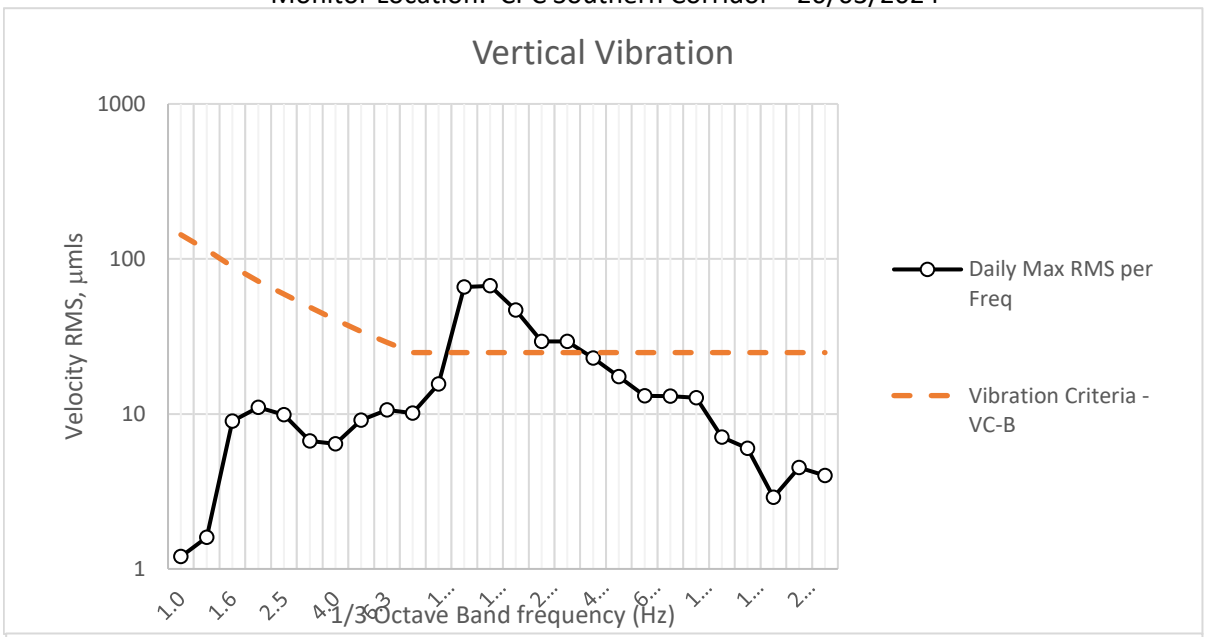


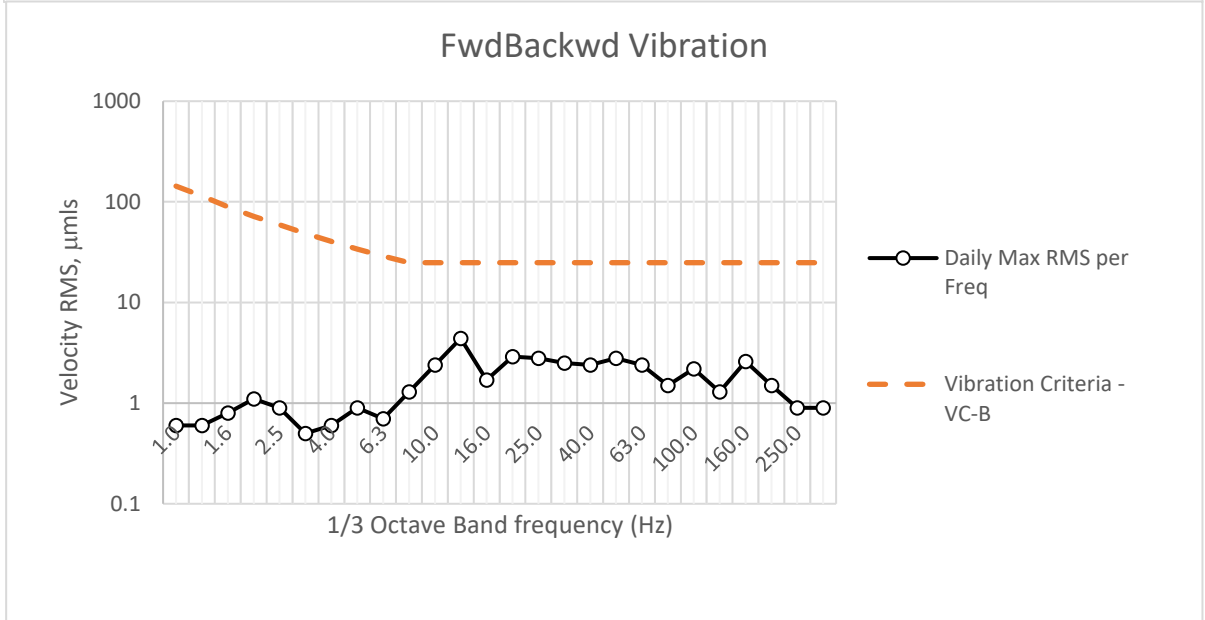


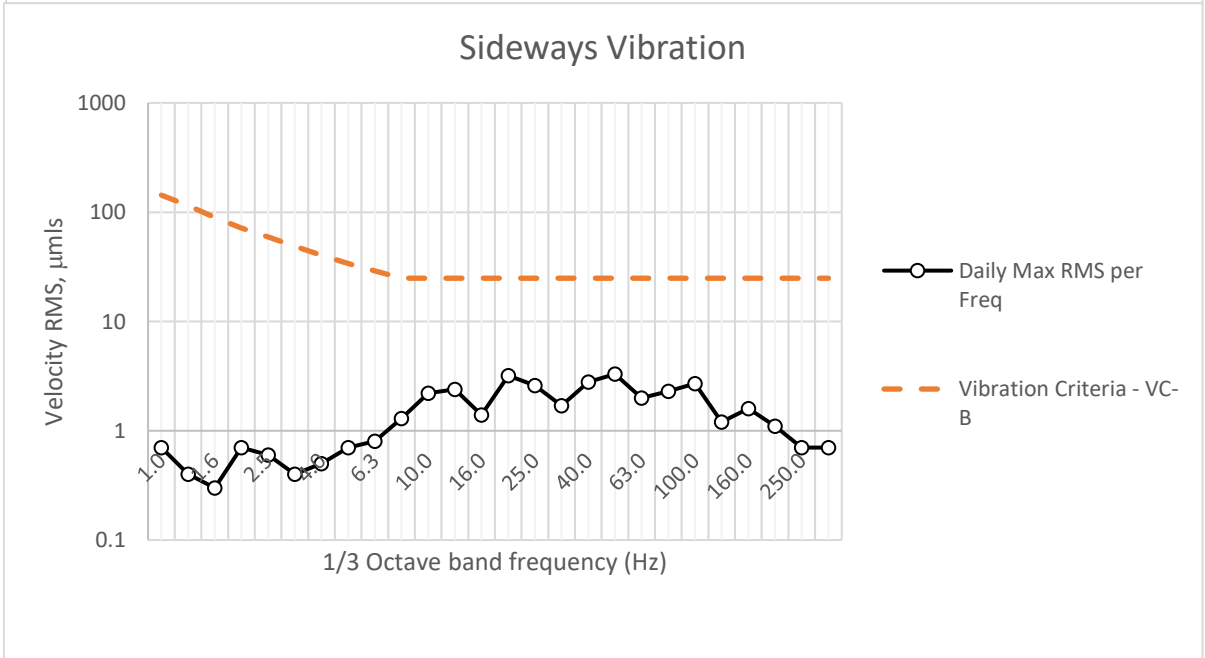
Monitor Location: CPC Southern Corridor 19/03/2024



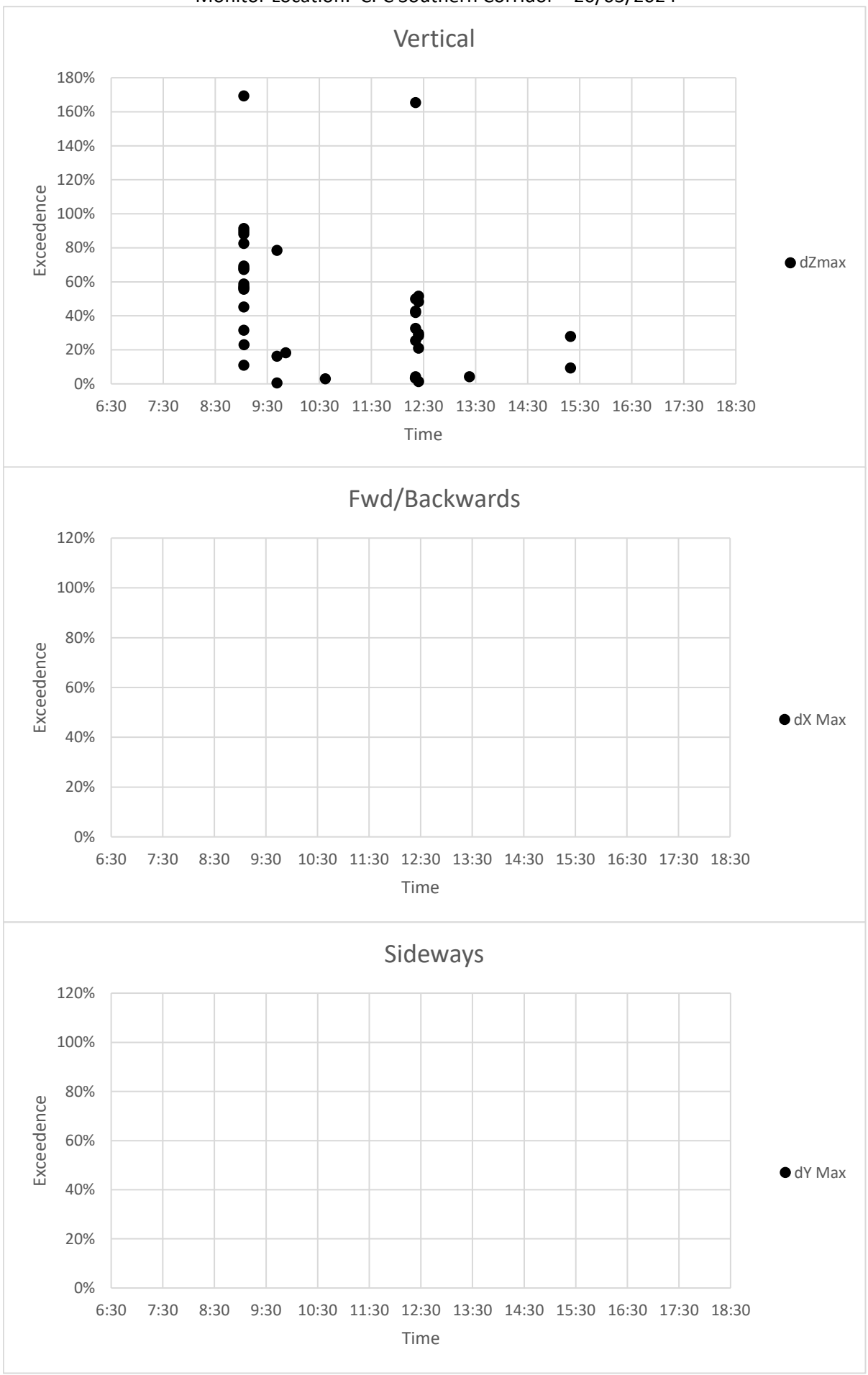
Monitor Location: CPC Southern Corridor 20/03/2024



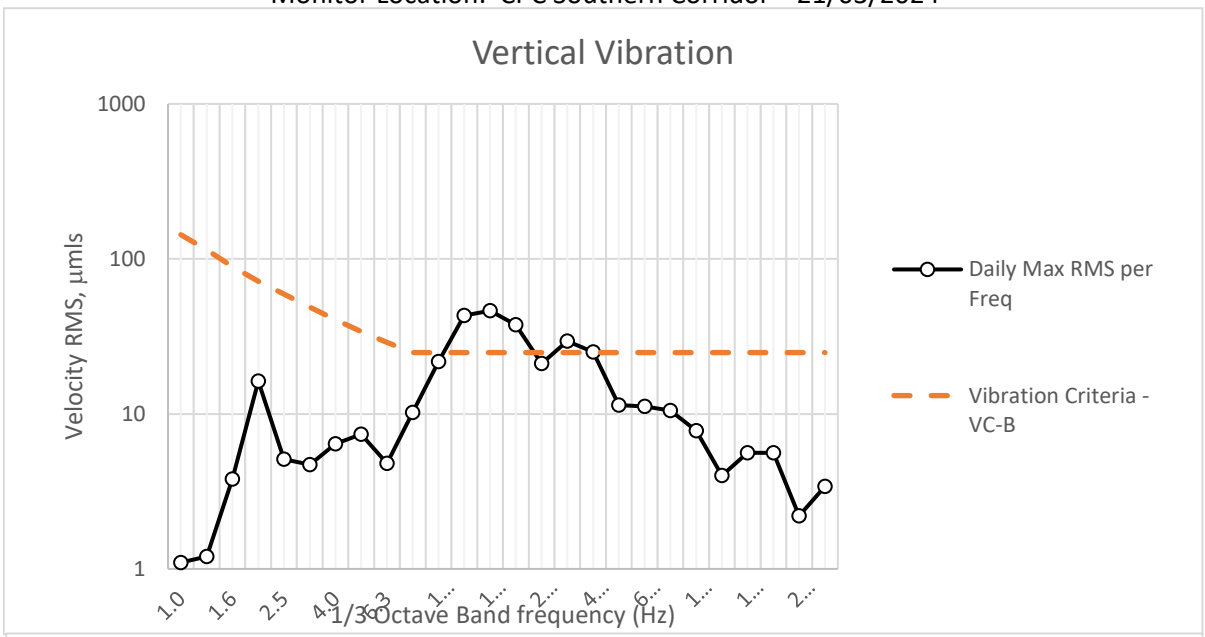


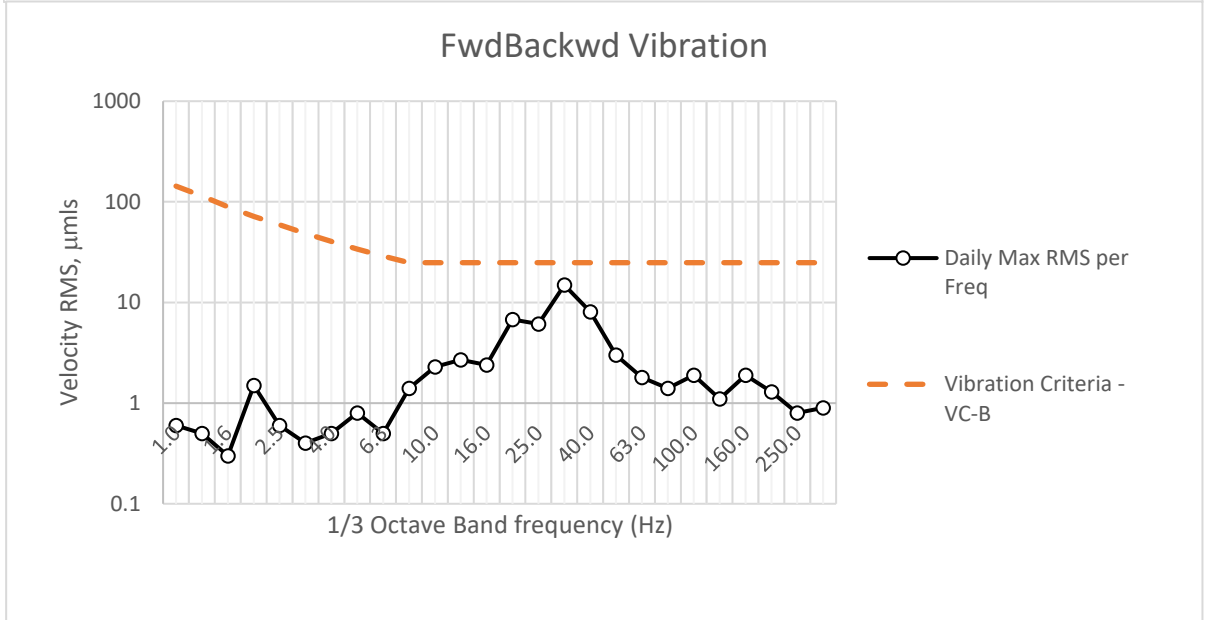


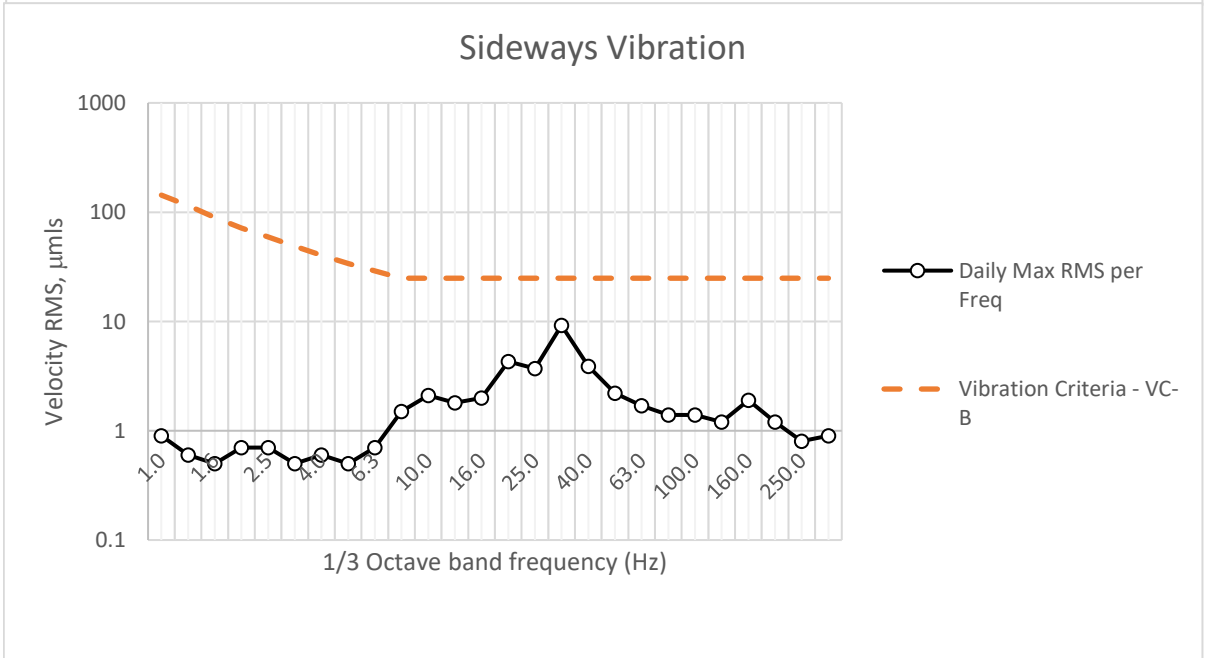
Monitor Location: CPC Southern Corridor 20/03/2024



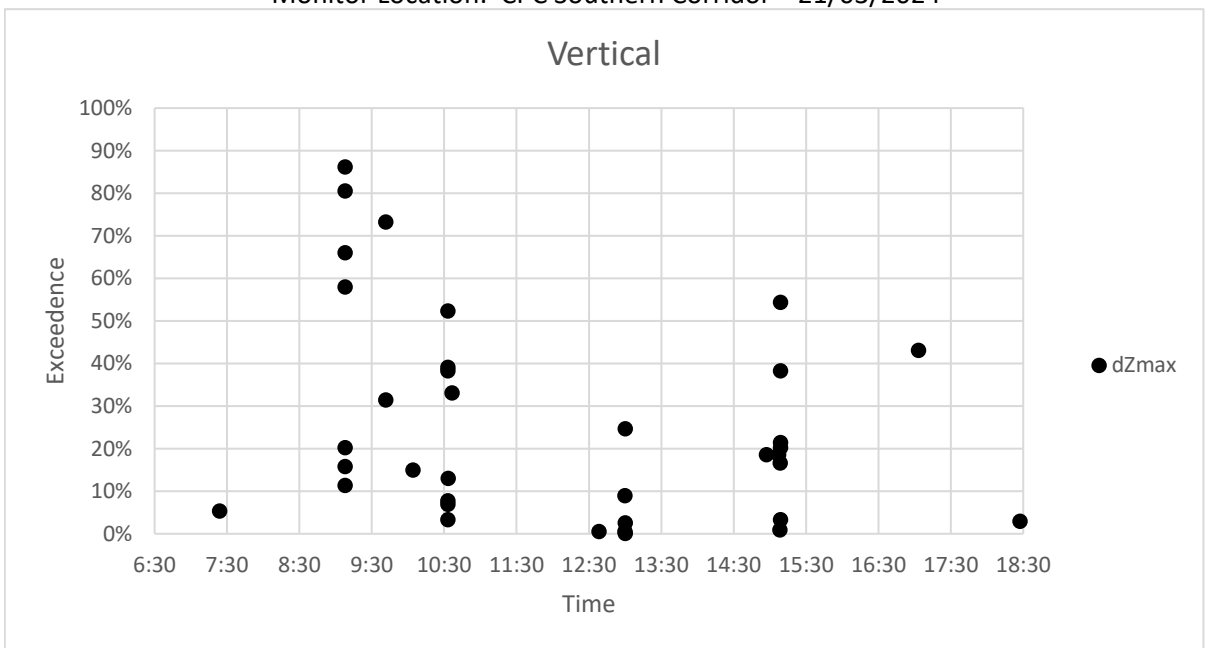
Monitor Location: CPC Southern Corridor 21/03/2024

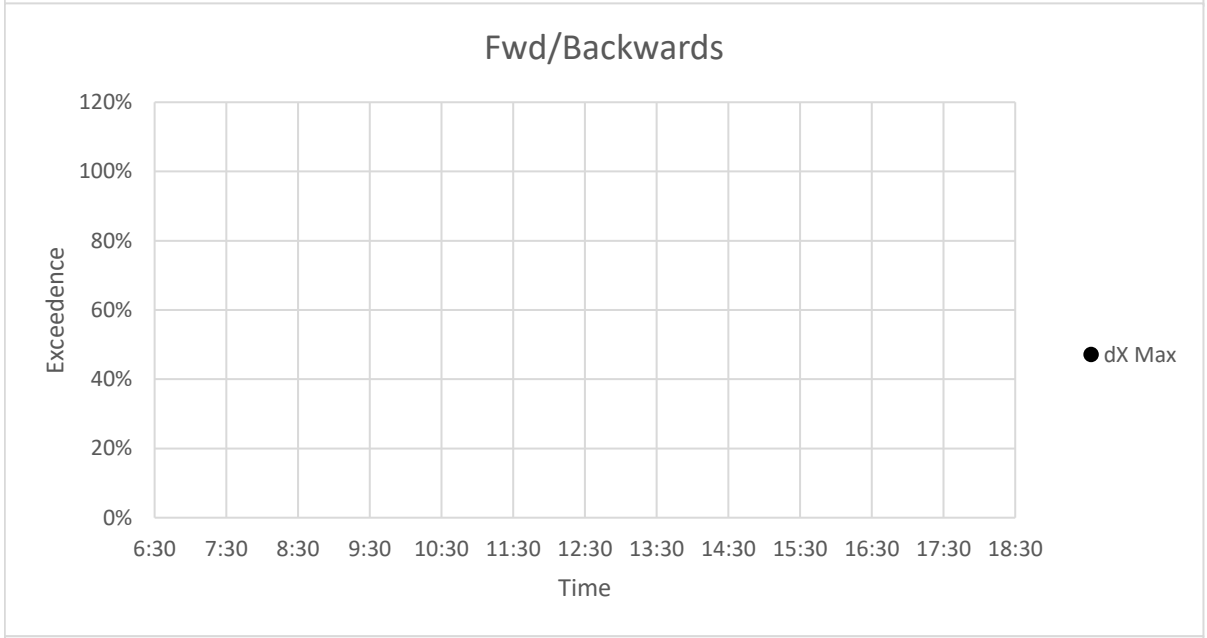


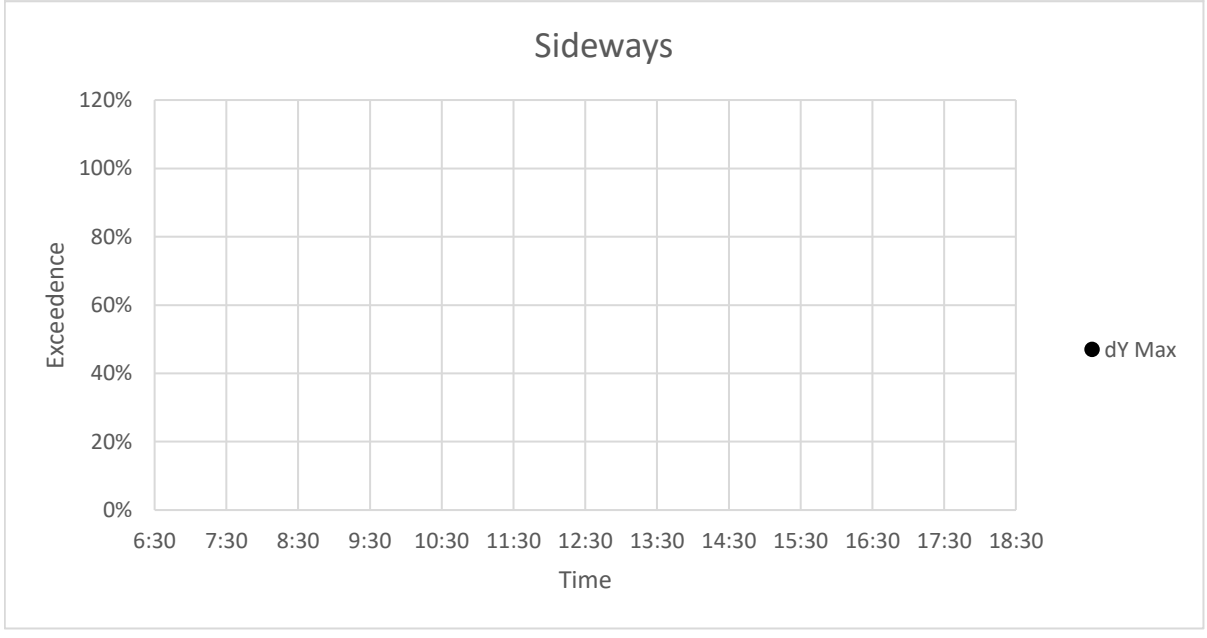




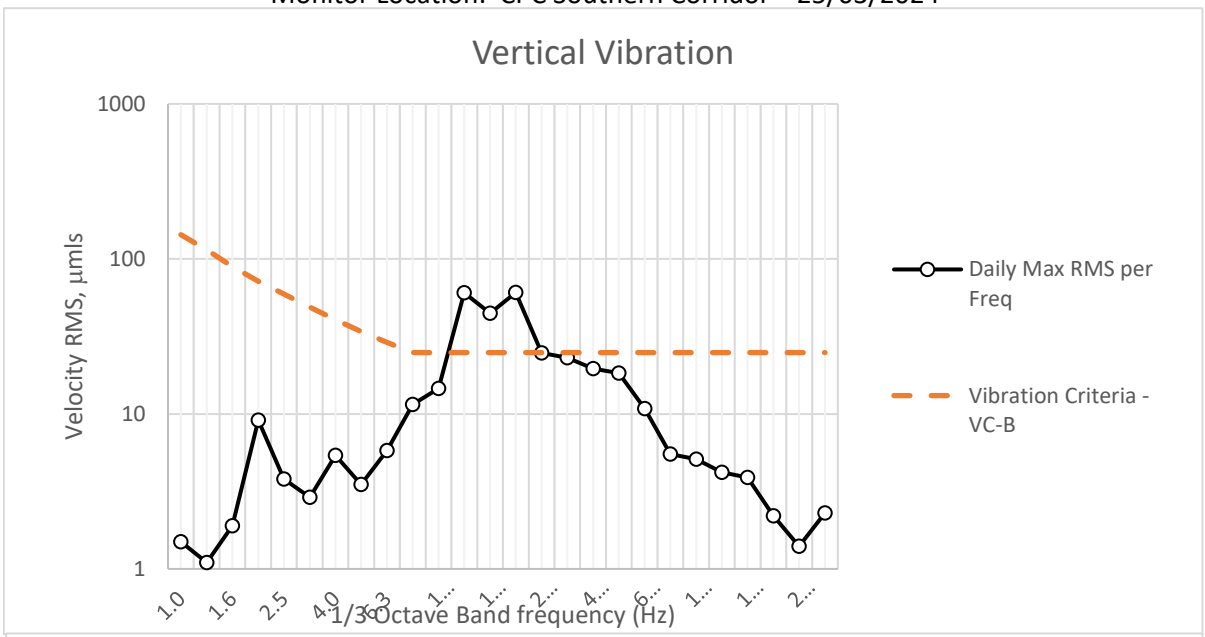
Monitor Location: CPC Southern Corridor 21/03/2024

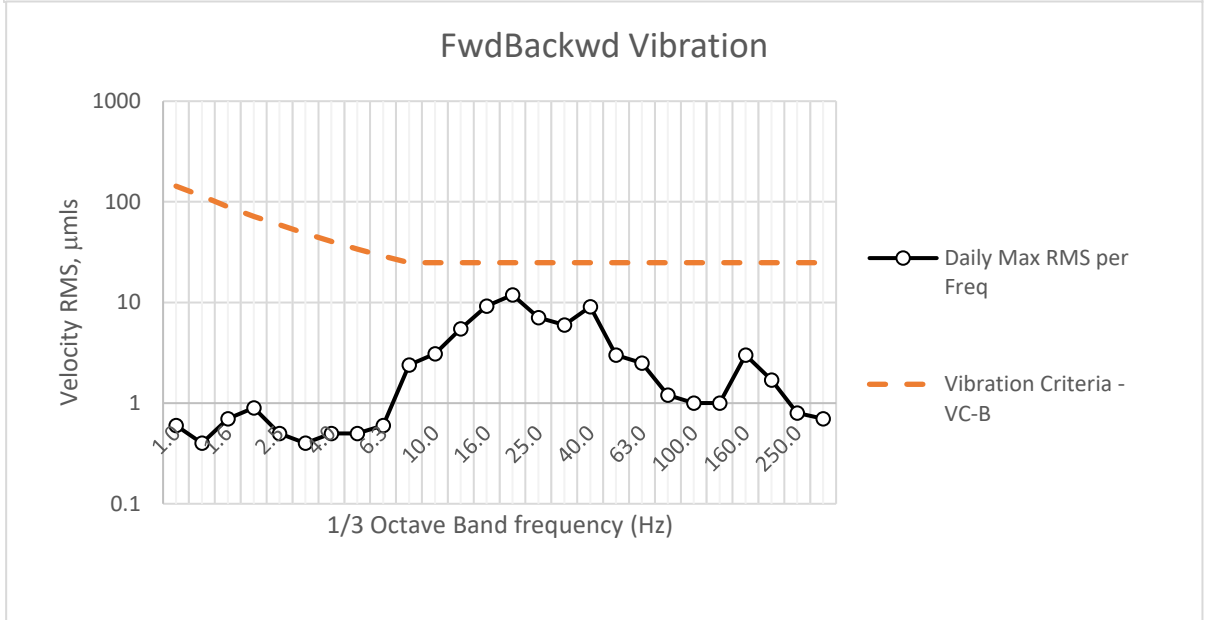


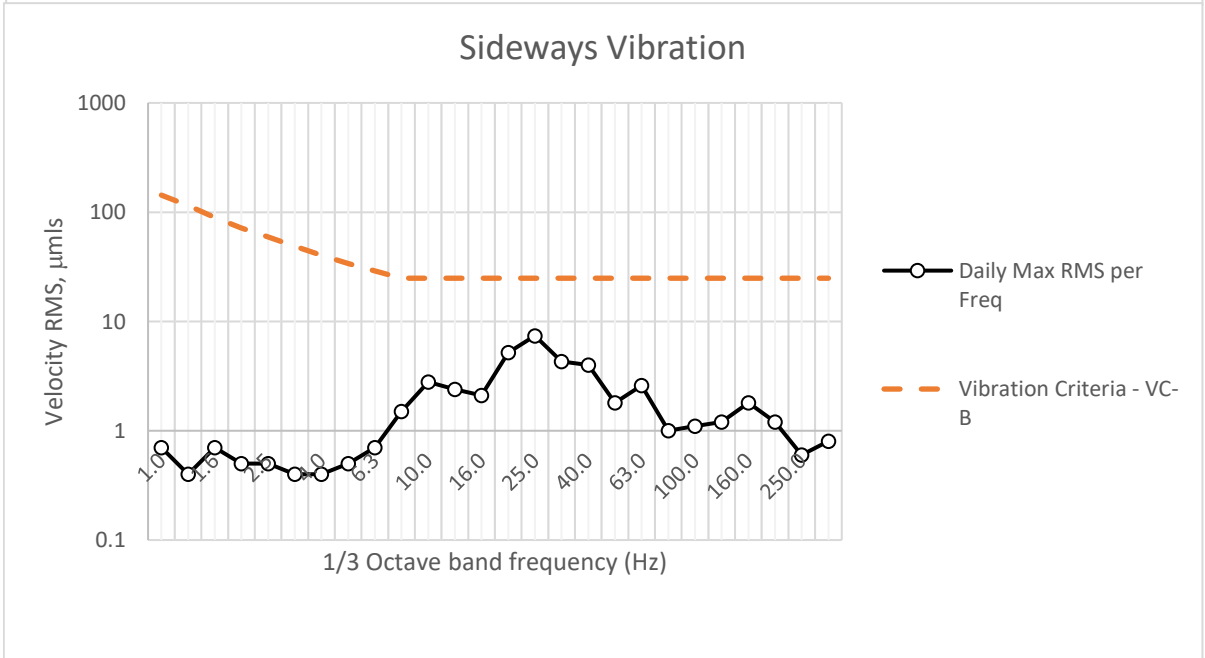




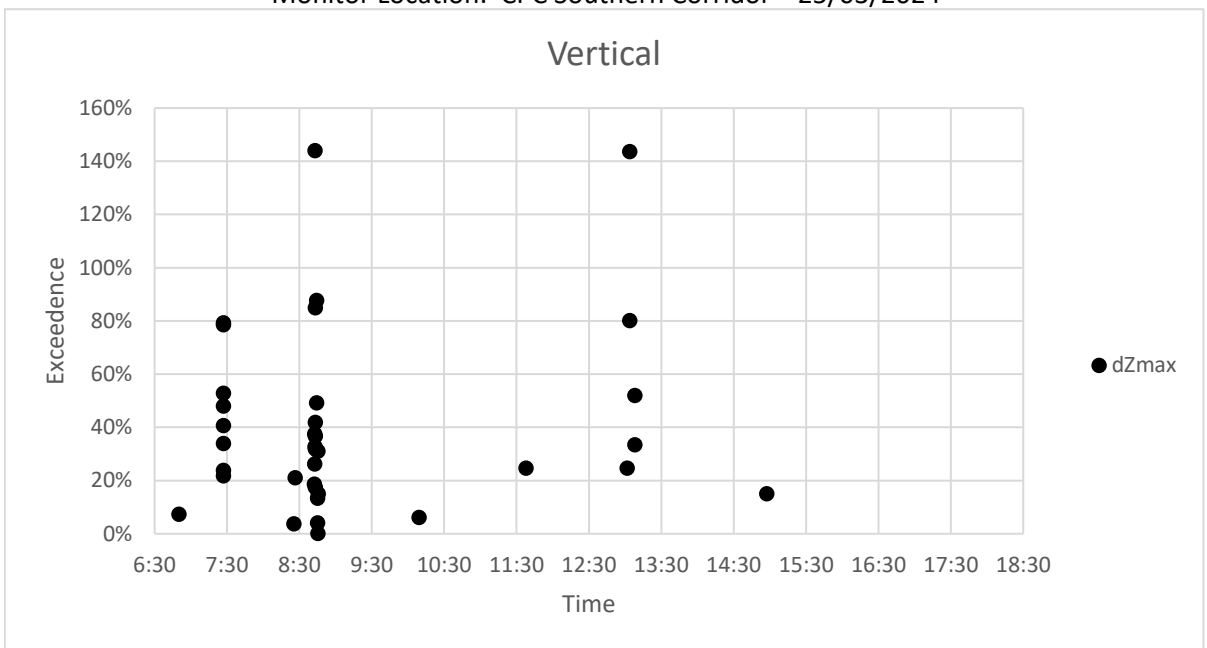
Monitor Location: CPC Southern Corridor 25/03/2024

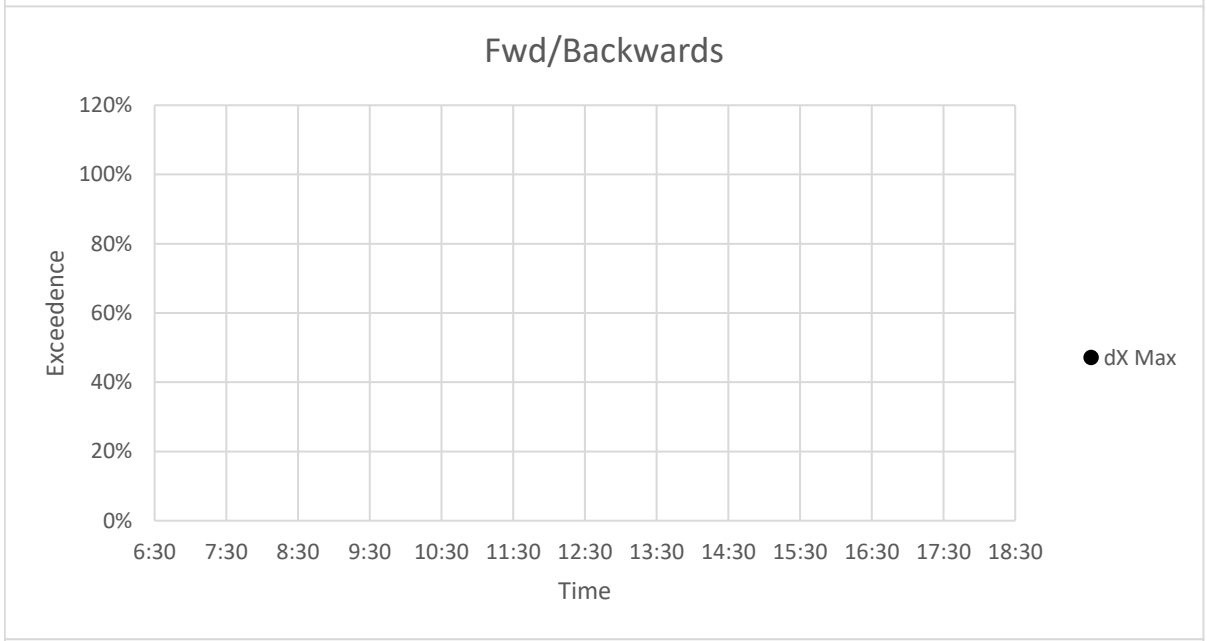


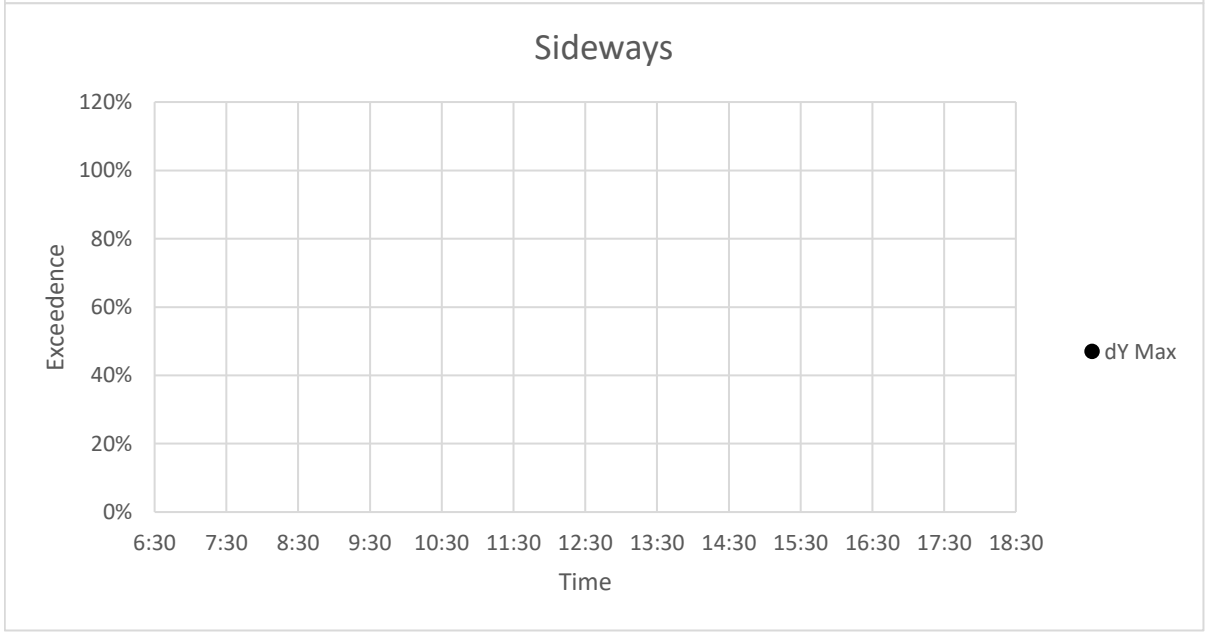




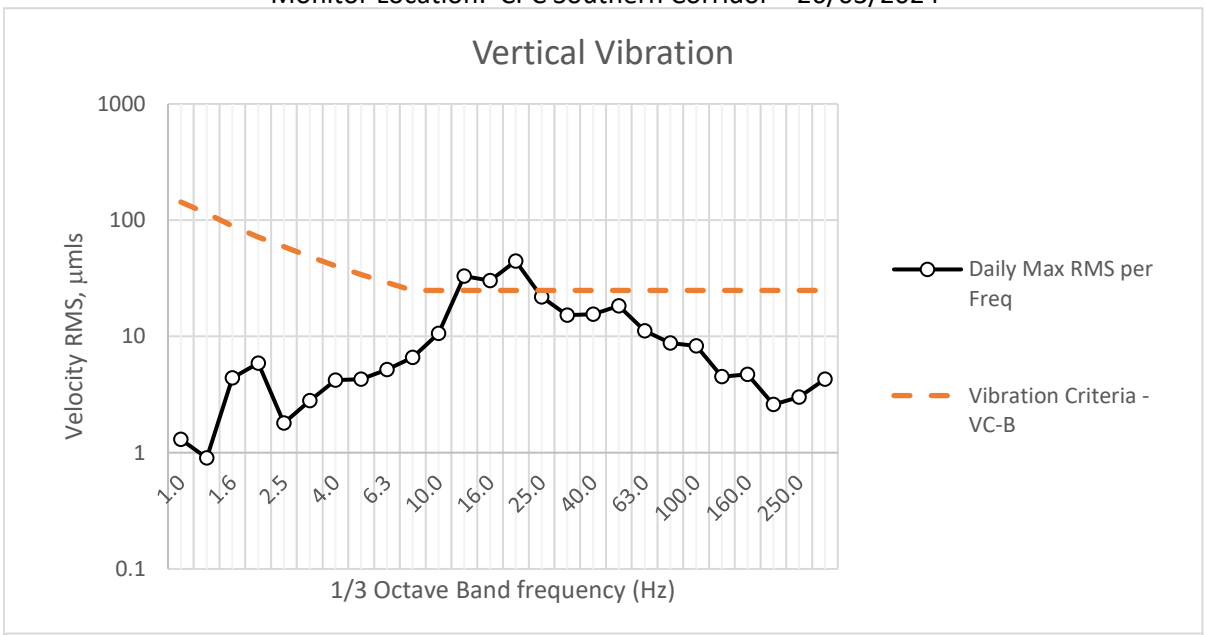
Monitor Location: CPC Southern Corridor 25/03/2024

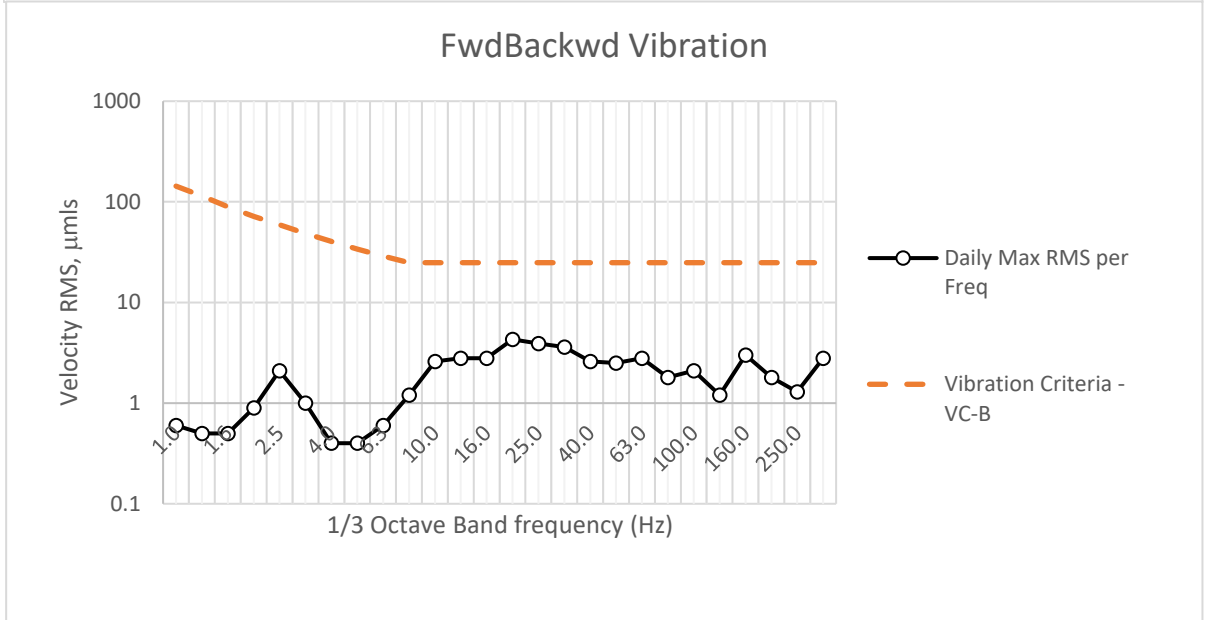


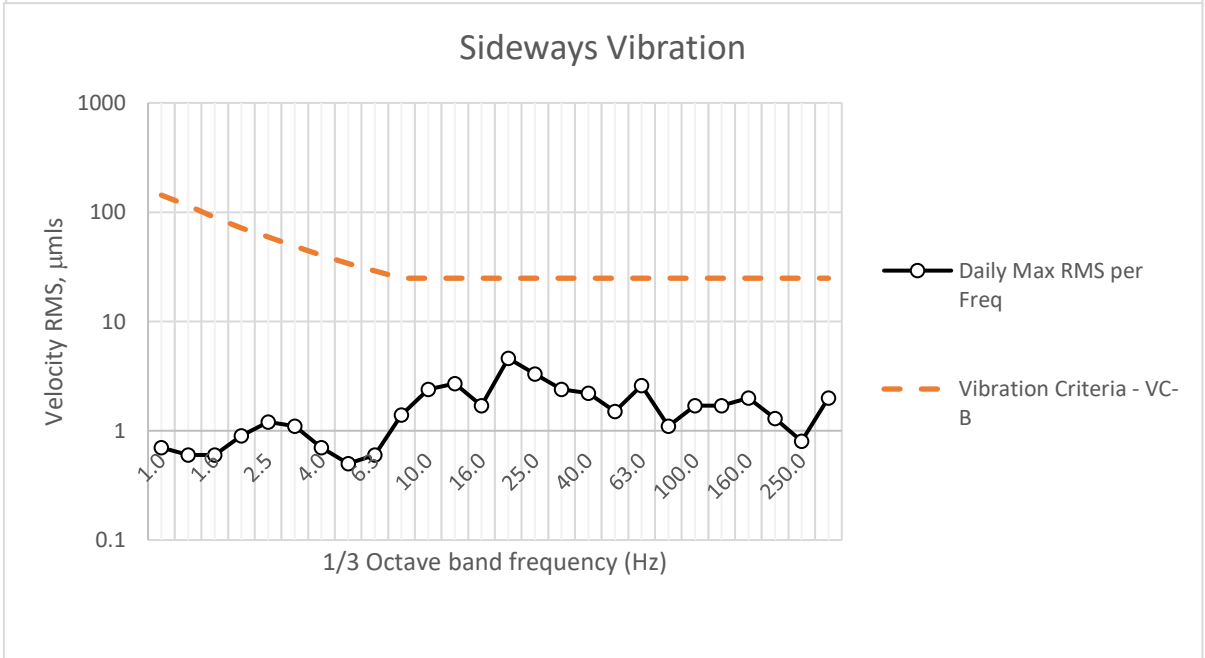




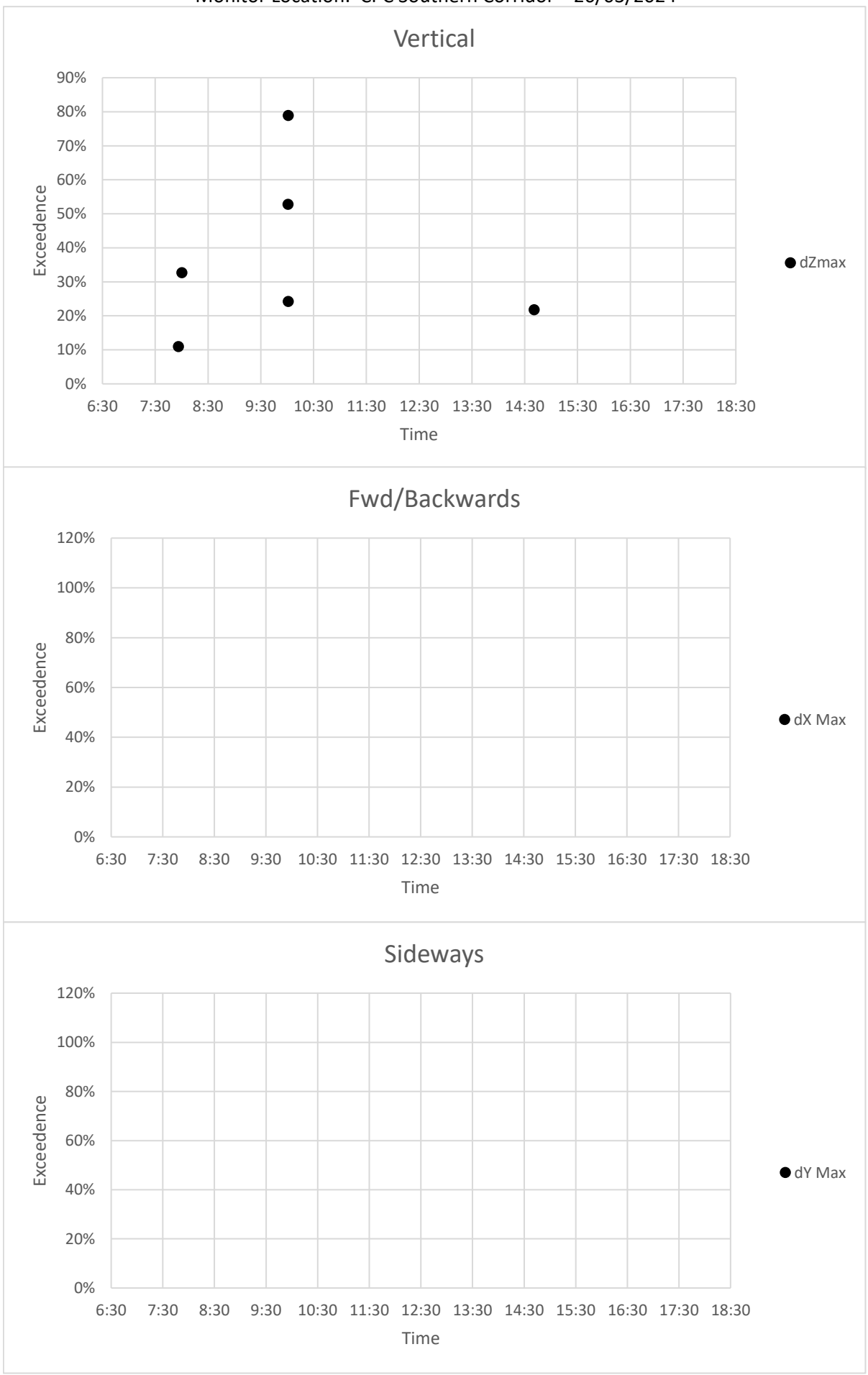
Monitor Location: CPC Southern Corridor 26/03/2024



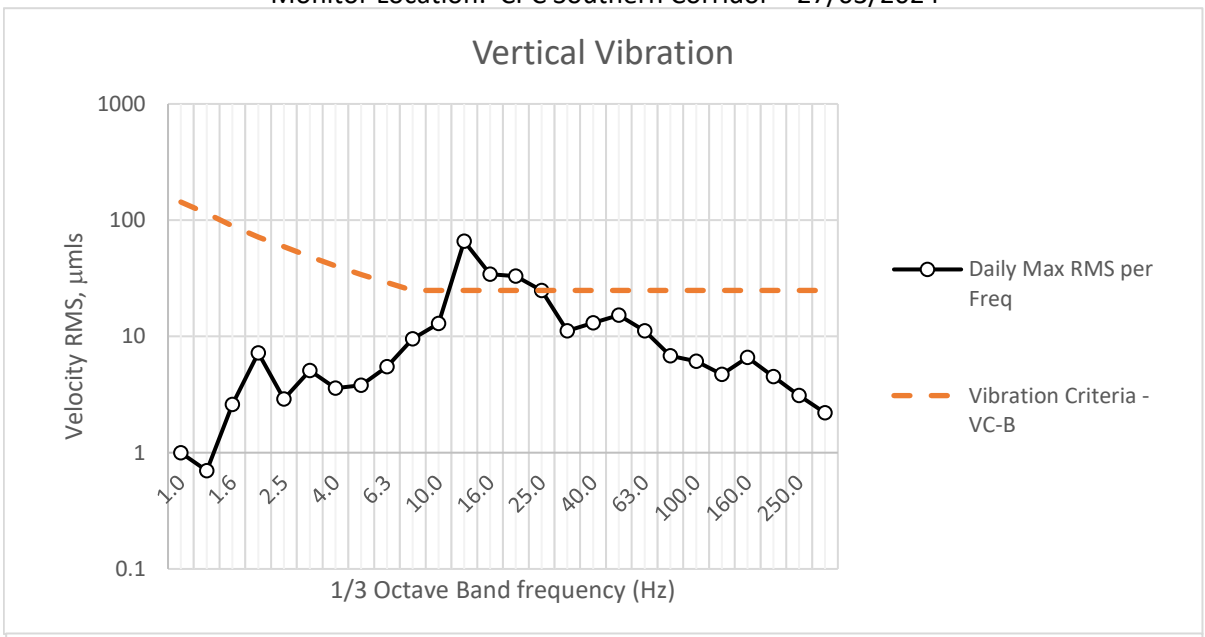


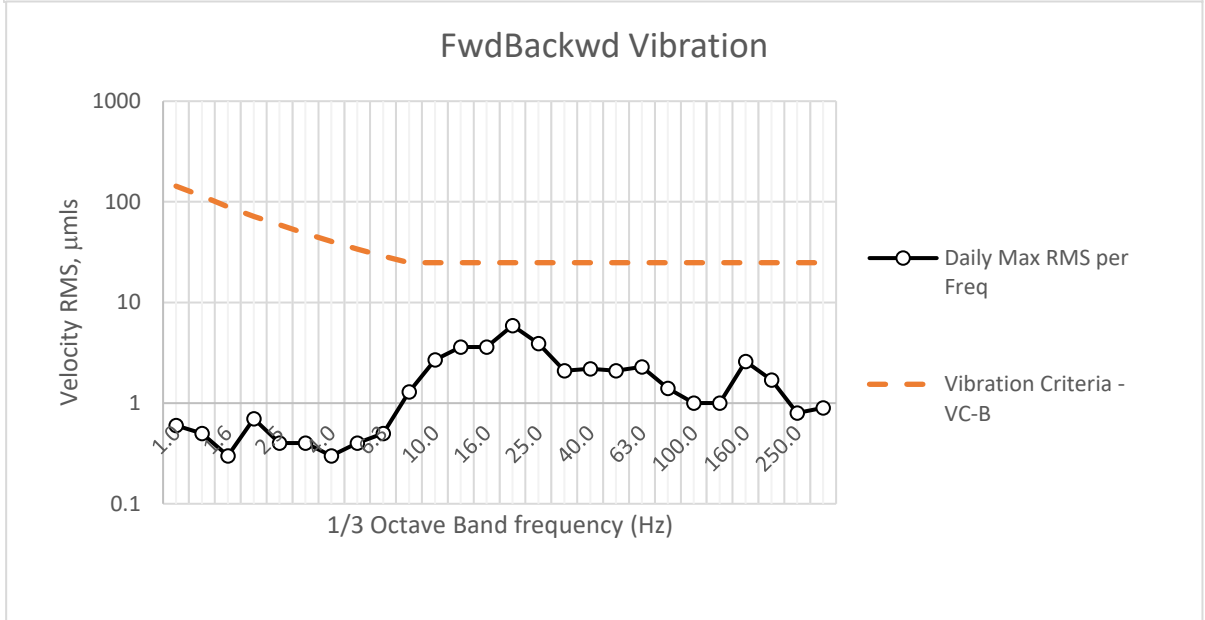


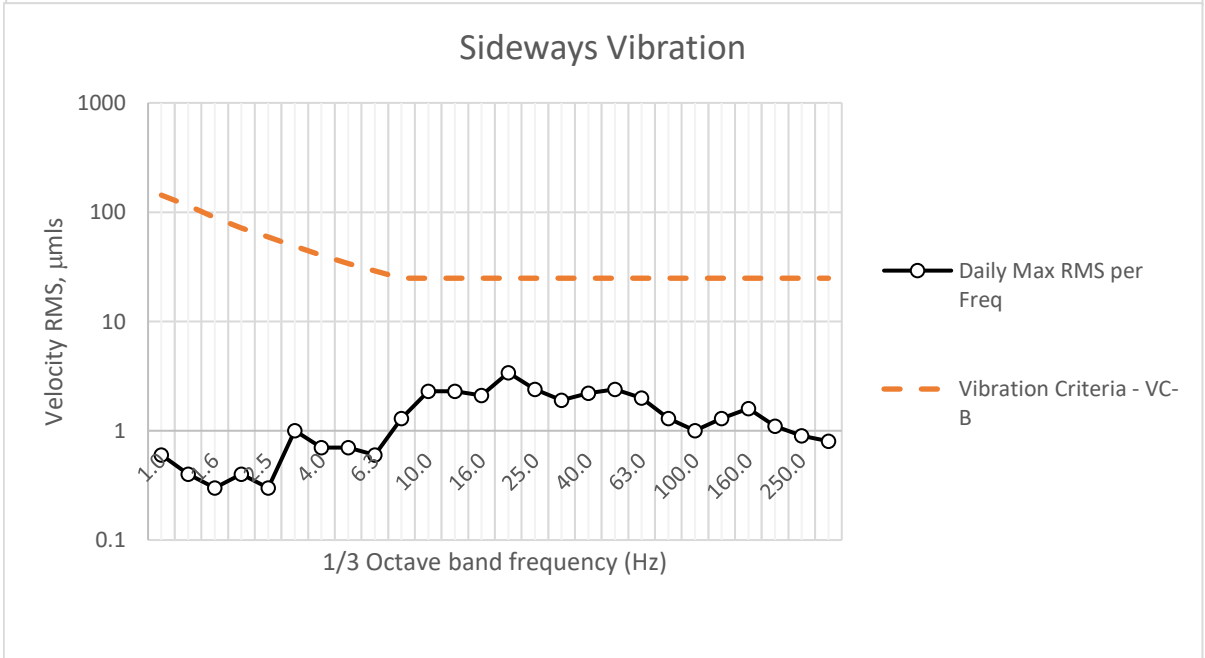
Monitor Location: CPC Southern Corridor 26/03/2024



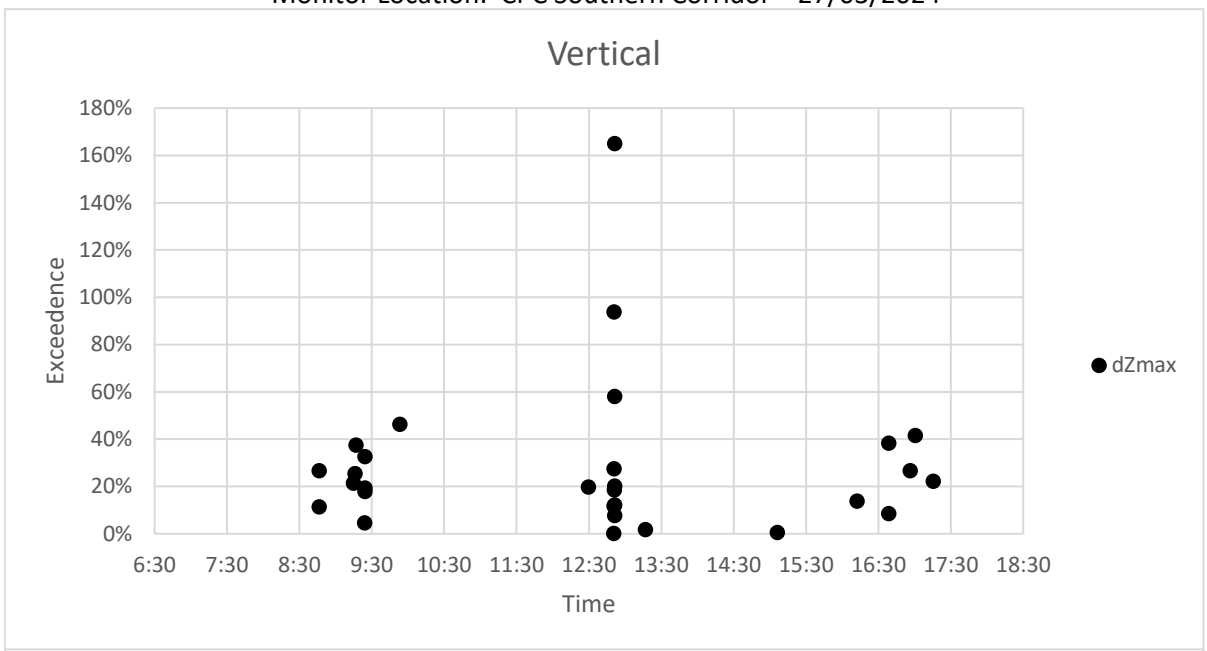
Monitor Location: CPC Southern Corridor 27/03/2024

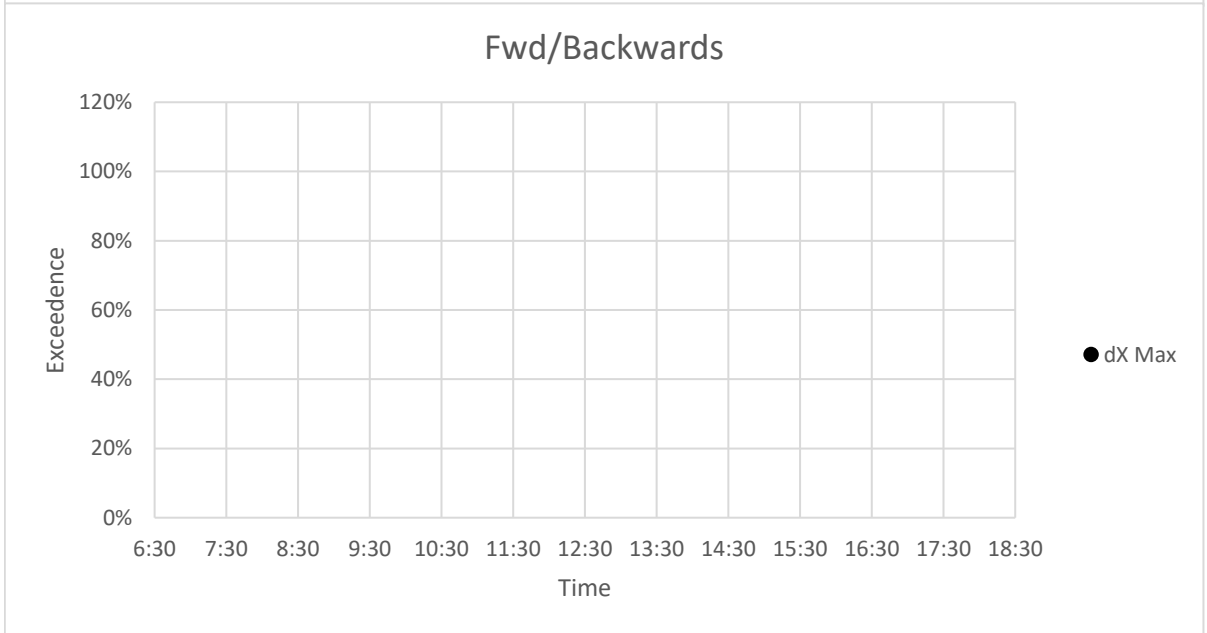


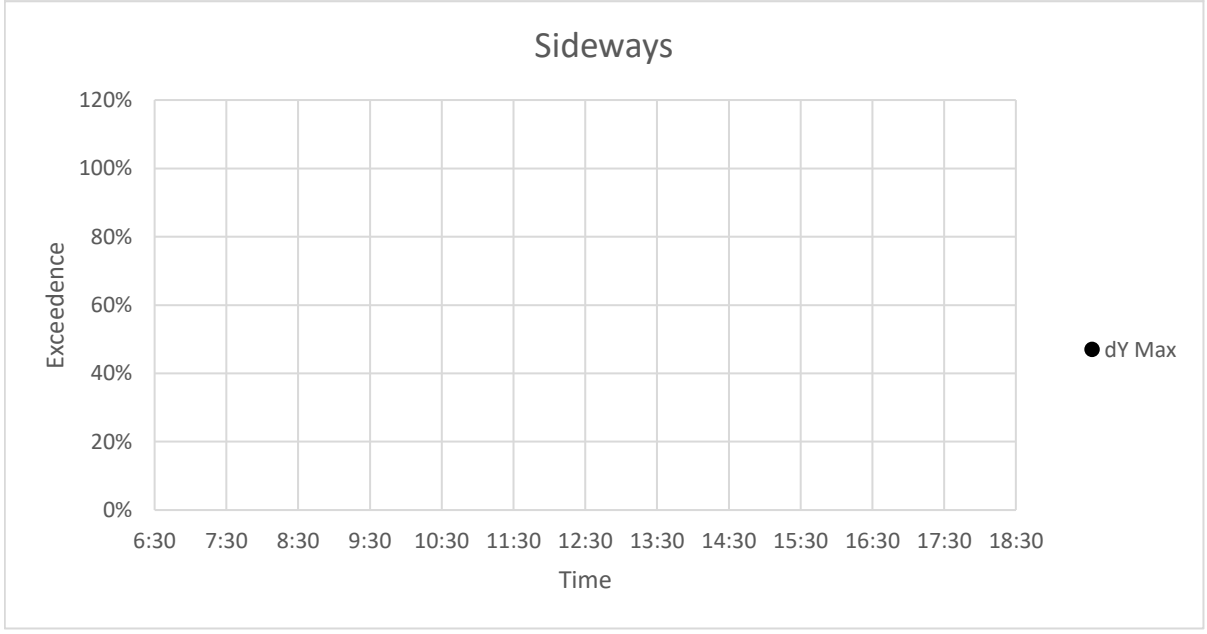




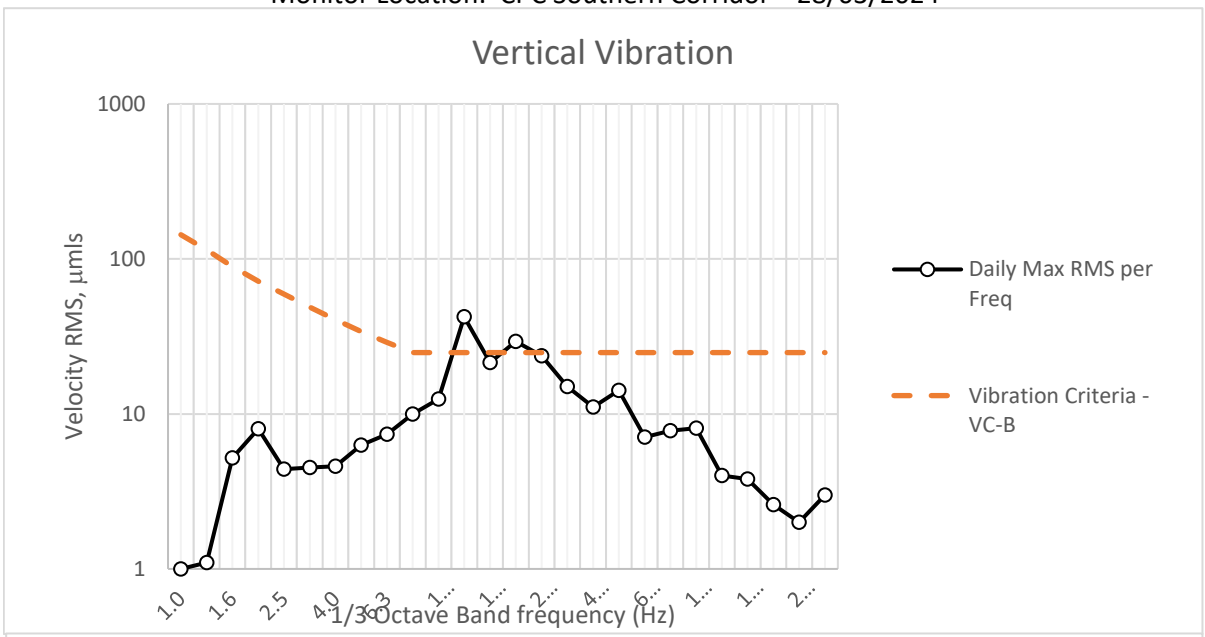
Monitor Location: CPC Southern Corridor 27/03/2024

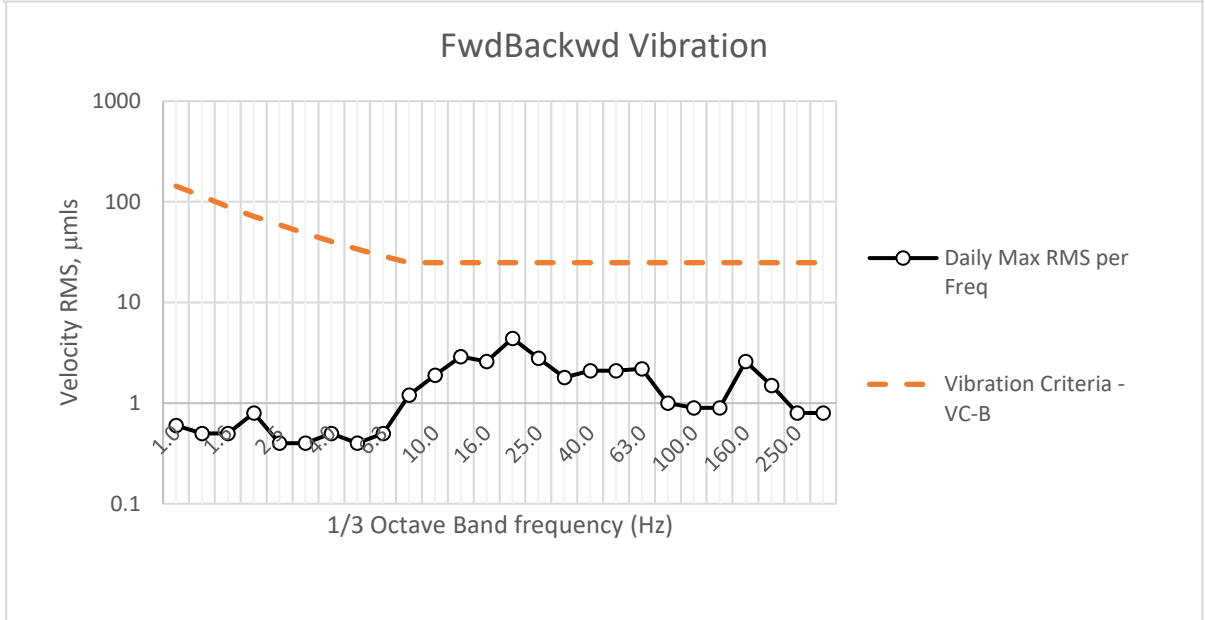


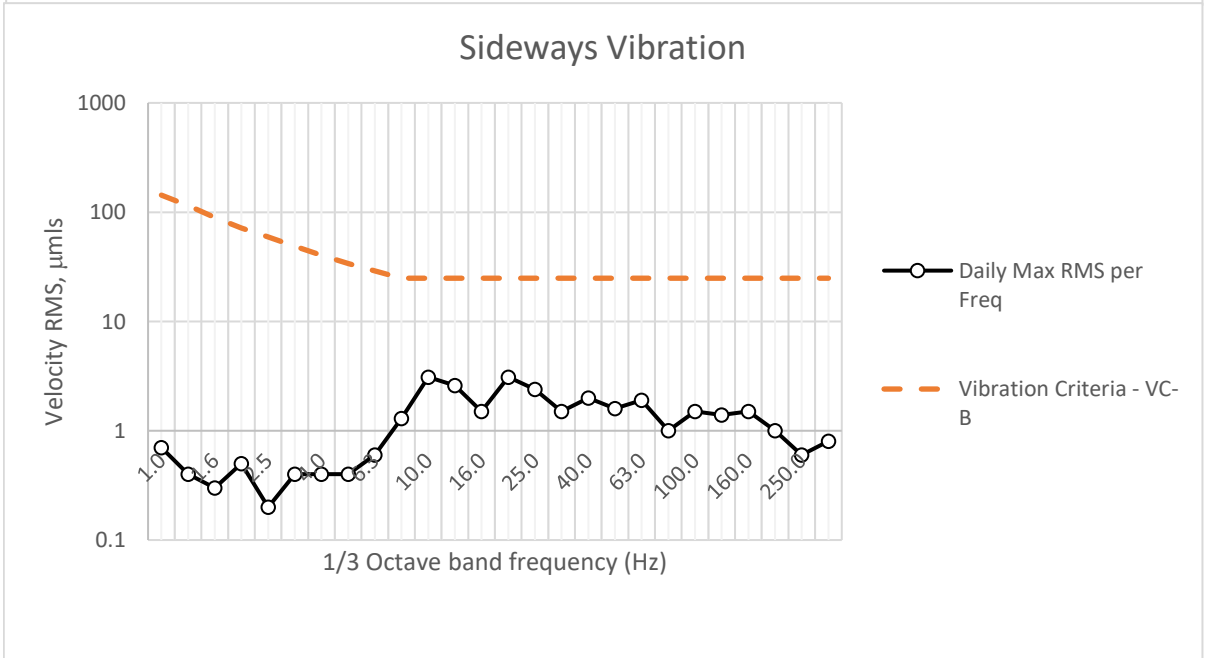




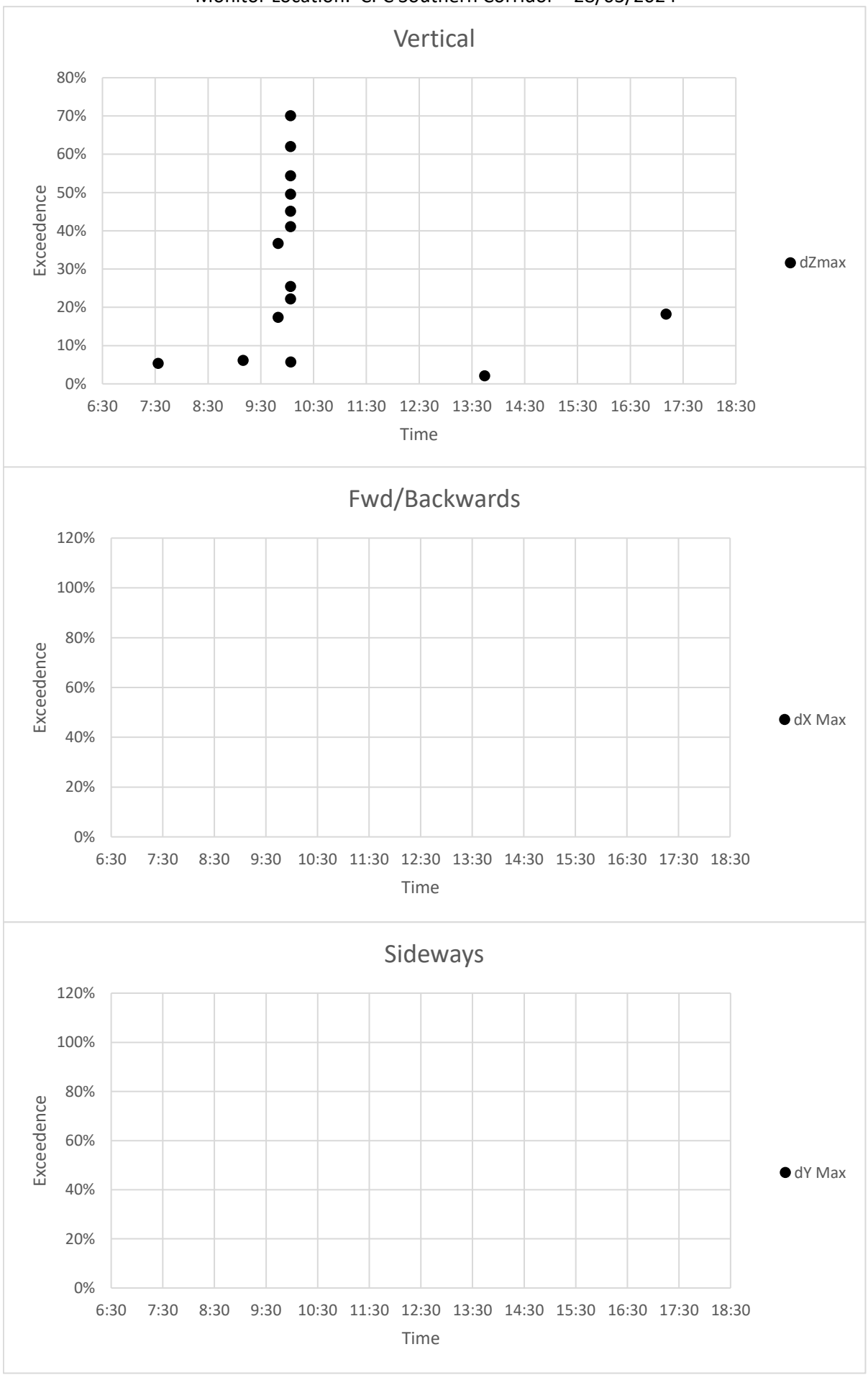
Monitor Location: CPC Southern Corridor 28/03/2024







Monitor Location: CPC Southern Corridor 28/03/2024



CHARLES PERKINS CENTRE – LEVEL B1 SOUTHERN WING OBSERVATION ROOM E

No exceedances occurred during the monitoring period (VC-A - 50μms^{-1}).

RPA HOSPITAL MAIN BUILDING – LEVEL 03 NICU

No exceedances occurred during the monitoring period.

OUTSIDE SUSAN WAKIL HEALTH BUILDING

No exceedances occurred during the monitoring period.