TERRA ENVIRONMENTAL, LLC
PLANNING | CONSULTING | MANAGEMENT | REMEDIATION

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February 6, 2024

1650 Washington Street, LLC
3 Michaud Drive
Framingham, MA 01701
Attn: Jeff Marzano
E-mail: jeff@capitolservicesllc.com

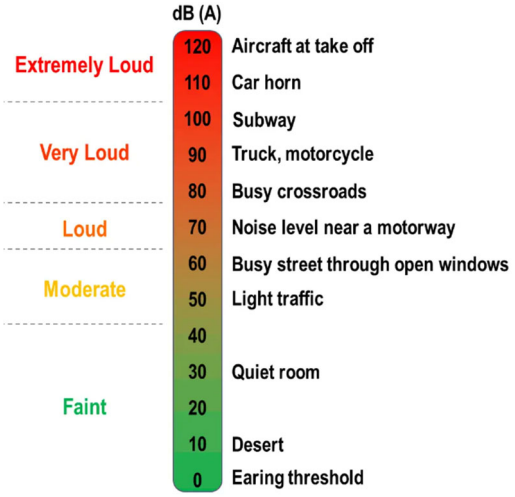
Project: Noise Study 1650 Washington St., Holliston, MA

Dear Mr. Marzano:

TERRA Environmental, LLC (TERRA) has prepared this letter on the completion of the ambient noise study conducted for 1650 Washington Street, LLC at the subject property located at 1650 Washington Street in Holliston, MA, **Figure 1**. The study was conducted to ensure that the noise from the operation, more specifically the vacuums, would not create a sound level 10 dBA above ambient levels at the property boundary. The Massachusetts Department of Environmental Protection (MassDEP) has provided local municipalities the authority in monitoring and enforcing noise issues under 310 CMR 7.00.

Background Information

Sound is typically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is measured in decibels (dB). In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; a sound 20 dB higher is perceived to be four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. A standard dBA scale is depicted below for comparison of background levels.



The Town of Holliston requested the study to ensure that the noise from the operation, more specifically the vacuums, would not create a sound level 10 dBA above ambient levels at the property boundary. The car wash would have up to ten vehicle vacuum stations. Each vacuum station would have a 120v motor and operate with a decibel (dBA) measurement of up to 77 dB at 10-feet, 70 dB at 20-feet and 64 dB at 30-feet. The vacuum units 10 & 11 are approximately 140-feet from the western property line or 1660 Washington St. building, while units 1 through 9 will be located approximately 165 feet away.

Study Information

A moderate, steady flow of traffic including cars, buses and tractor trailers was identified along Rt 16 throughout the day of the study. Rt 16 connects Milford and the center of Holliston. Traffic was busiest in the morning and late afternoon. 1650 Washington St is located at the intersection of Washington and Chestnut Streets; no traffic light is present at this intersection. 1650 Washington St is surrounded by commercial industrially zoned properties. The property is currently vacant and currently undeveloped.

The study was conducted on February 2, 2024 from the hours of 6am to 6pm. The weather was clear, no rain with a temperature of 38° to 42°. Terra set up two Casella Acoustic sound level meters on the north and south sides of the property, see **Figure 2**. Each meter was calibrated and set on a tripod 4 feet off the ground. The meters where set up lo log A-weighted sound in dB(A); A-weighting is an adjustment applied to sound measurement to reflect how a noise is perceived by the human ear. The data was downloaded and is included in **Attachment A**.

Instrument CEL-633 A, was located proximal to Washington Street but approximately 40-feet from the road and approximately 125-feet from the 1660 Washington building. It operated consistently until the end of the recording event were it appears the cold weather caused a malfunction in the instrument. The instrument ran in good working order for the first two events with a summed time of 11 hours and 51 minutes. The high decibel measurement (dBA) was 127. The 127 dBA reading appears to be an aberration caused by a tractor trailer and a trash truck passing the area at the same time. The average decibel reading was 73.5 dBA. Summarized data is included below.

Instrument CEL-633A

Run	Time	High	Low	Duration	
		dbA	dbA		
1	6:00 AM	127	29	6 hrs 49 min	75 dbA average
2	12:58 PM	107	37	5 Hrs 2 min	72 dbA average
3	5:20 PM	35	20	37 min	
4	5:58 PM	NA	NA	6 sec	

Instrument CEL-633 C, was located near the rear of the property by the auto repair shop. This instrument operated sporadically and could not be restarted or recalibrated. It is assumed that the cold weather affected the instrument. The instrument ran for a summed time of 60 minutes. The high decibel measurement (dBA) was 90. Due to the minimal data recovery by the instrument an average was not calculated; the instrument requires a run time of at least one-hour to compute an average. Summarized data is included below.

Instrument CEL-633C

Run	Time	High	Low	Duration
		dbA	dbA	
1	8:47 AM	85	46	20 min
2	9:59 AM	84	35	20 min
3	11:38 AM	NA	NA	5 sec
4	11:39 AM	NA	NA	2 sec
5	12:57 PM	90	50	20 min

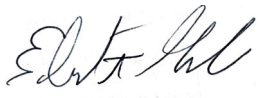
Conclusion

The purpose of the study was to identify background ambient sound levels at the property boundary. The average decibel measurement entering the property was 73.5 dBA. The vacuum cleaner units will be located over 60-feet from the nearest commercial / industrial building; the estimated decibel reading at that distance from the vacuums would be 64 dBA or less. Based upon the information gathered, the vacuums will not create a sound level 10 dBA above ambient levels at the property boundary.

Thank you for the opportunity to be of service. Please call with any comments or questions you may have.

Respectfully submitted,

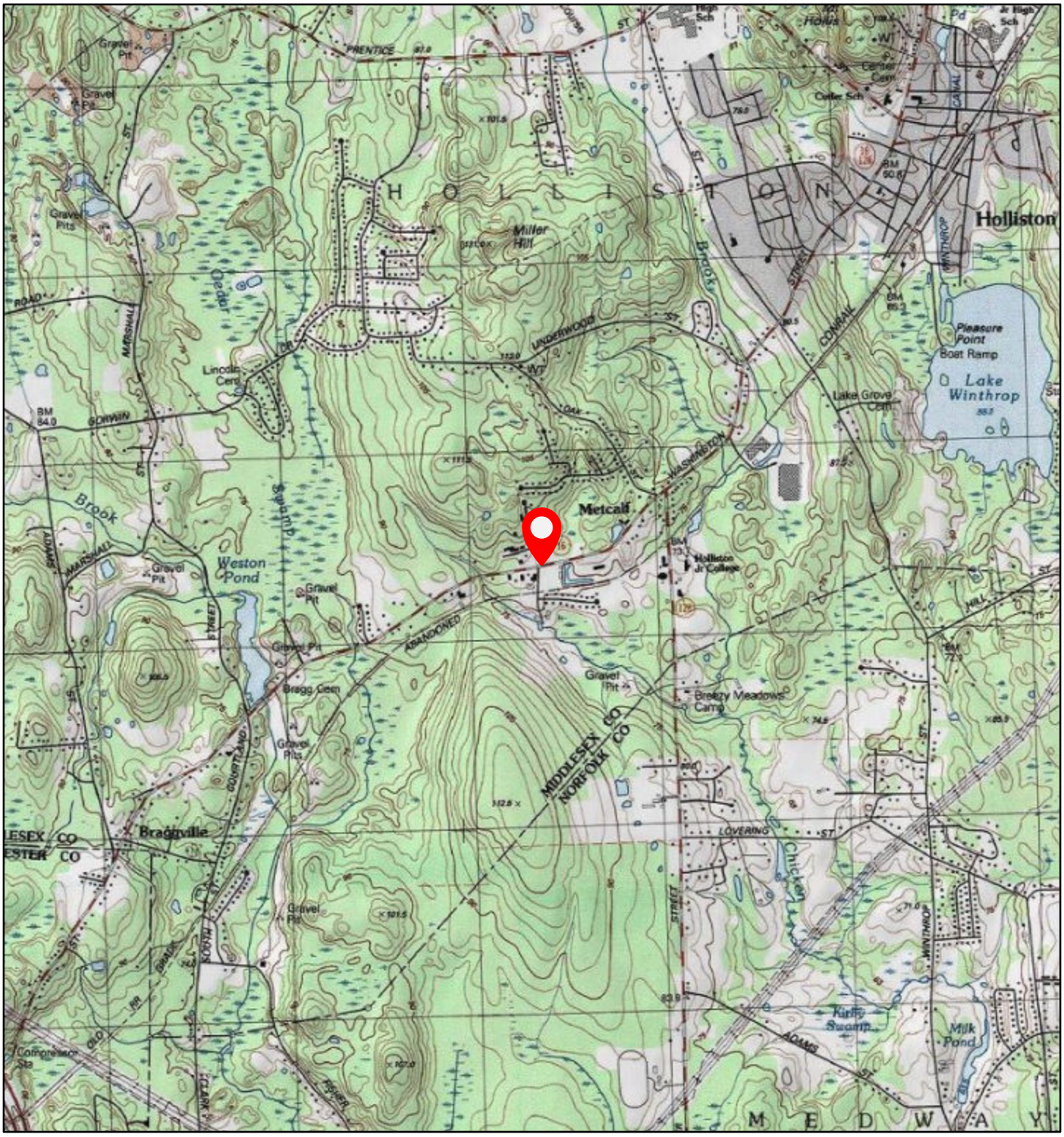
TERRA ENVIRONMENTAL, LLC



Edward F Giordano, LSP
Associate/Manager

SITE FIGURE WITH INSTRUMENT LOCATIONS

Figure 1- Site Locus



2/9/2023

1650 Washington Street
Holliston, MA

1:40,000

0 0.25 0.5 1 mi
0 0.4 0.8 1.6 km

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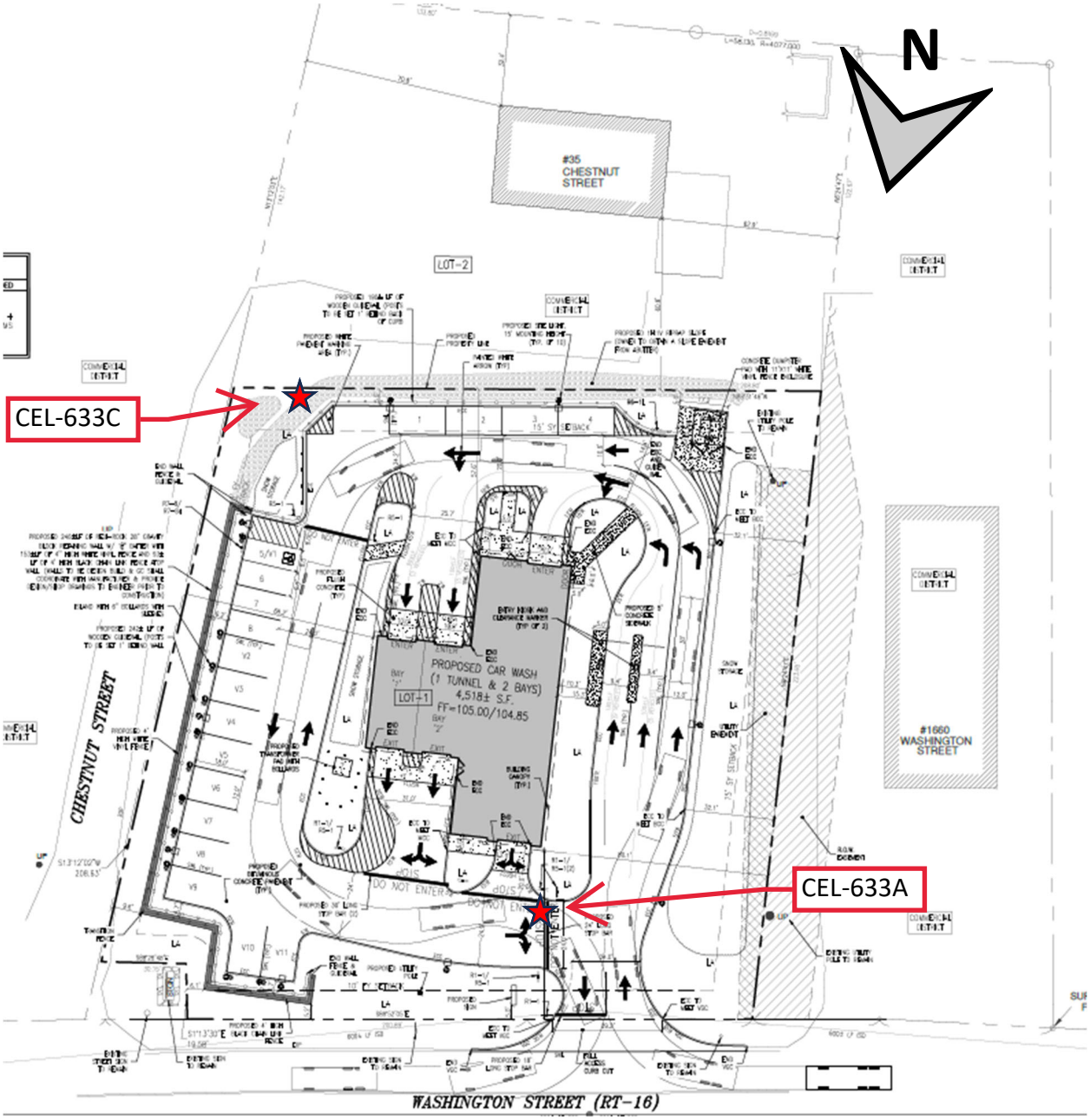
Site Figure



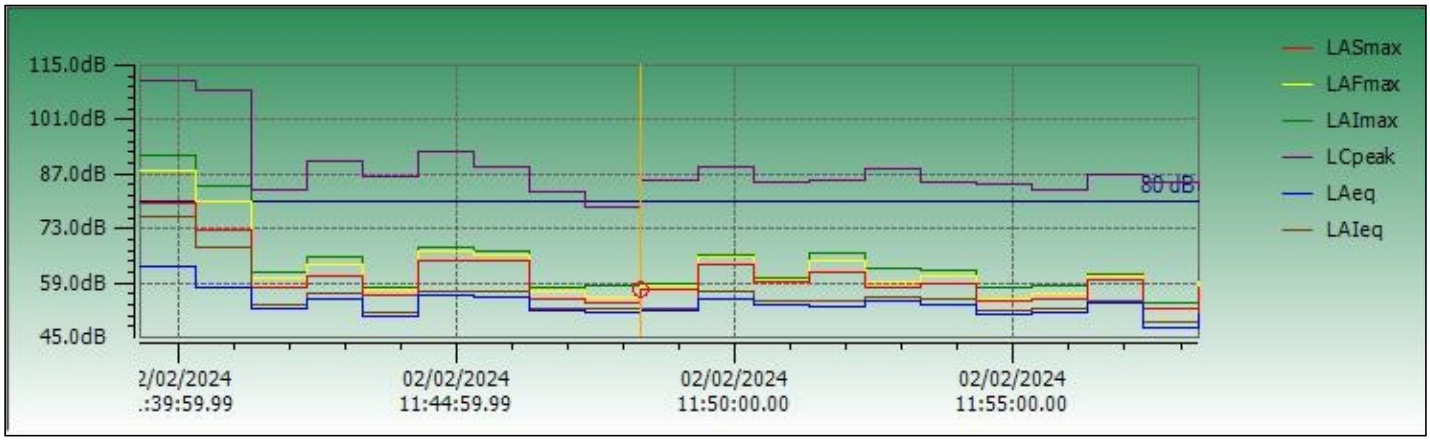
★ Estimated location of SoundPro Sound Level Meter

Location of buildings and features from Civil Design Group, LLS Site Plan Set

ATTACHMENT A
LOG DATA

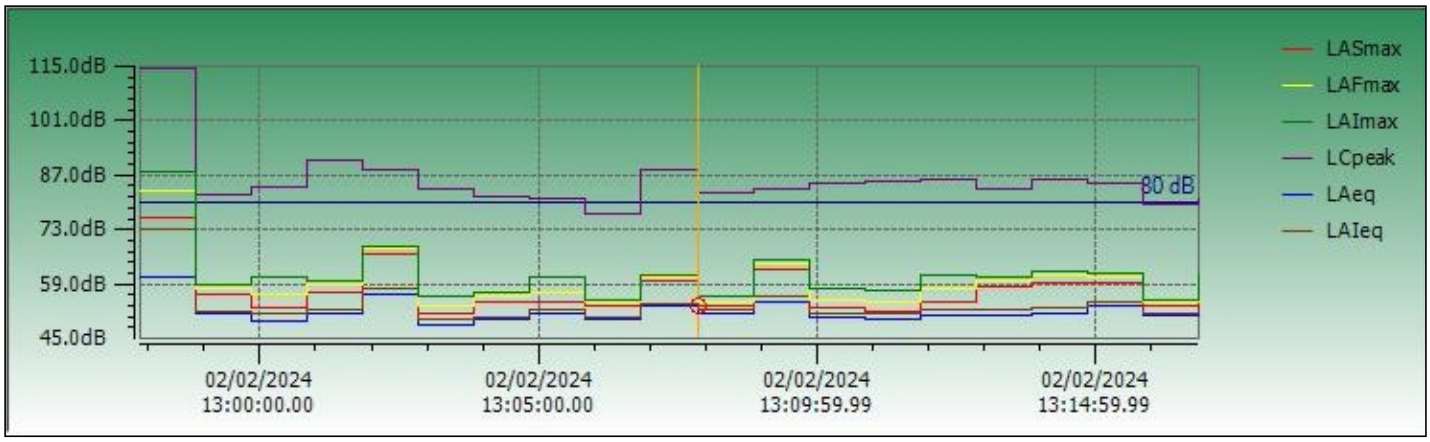
Instrument Model	**CEL-633C**

Battery Low	No	Start Date & Time	2/2/2024 11:39:19 AM
Duration	00:20:00 HH:MM:SS	Site	Unallocated
End Date & Time	2/2/2024 11:59:19 AM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:02 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Cumulative
Run Number	4		
Serial Number	2451068		
Notes			



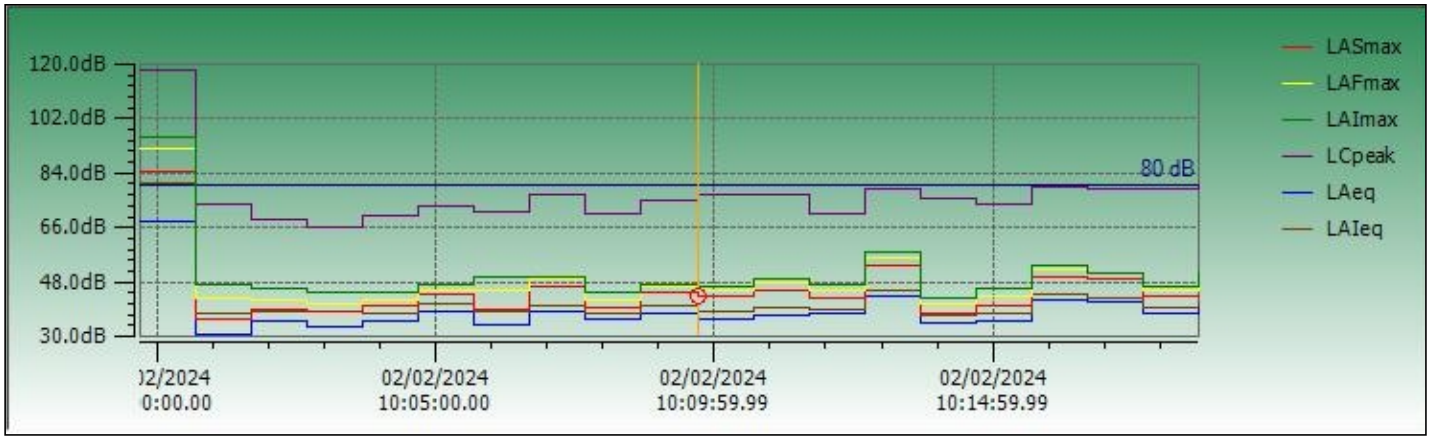
Instrument Model	**CEL-633C**

Battery Low	No	Start Date & Time	2/2/2024 12:57:51 PM
Duration	00:20:00 HH:MM:SS	Site	Unallocated
End Date & Time	2/2/2024 1:17:51 PM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:00 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Cumulative
Run Number	5		
Serial Number	2451068		
Notes			

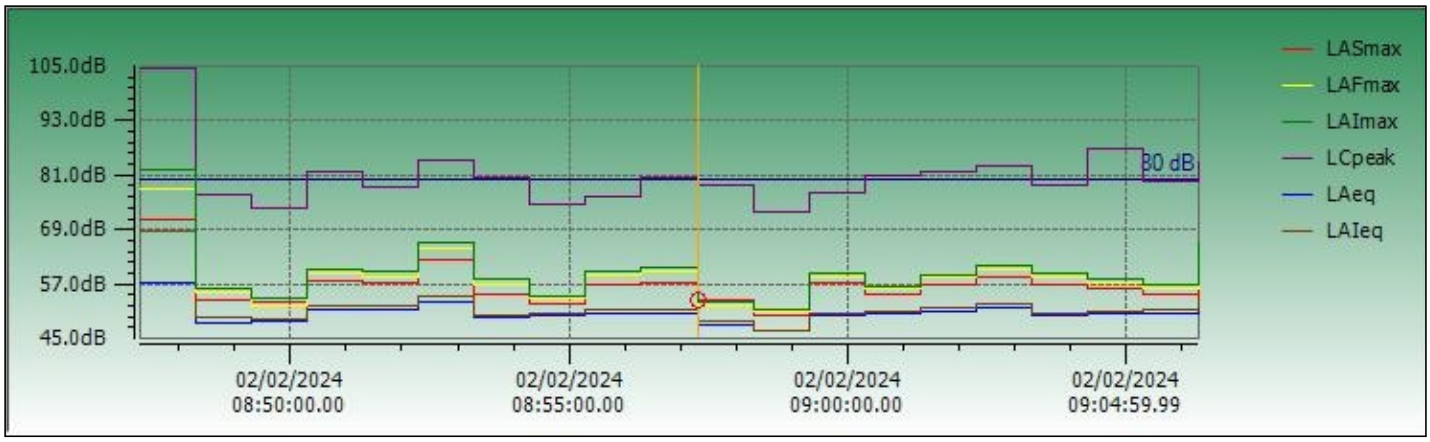


Instrument Model	**CEL-633A**		
Battery Low	No	Start Date & Time	2/5/2024 1:22:46 PM
Duration	00:00:06 HH:MM:SS	Site	Unallocated
End Date & Time	2/5/2024 1:22:52 PM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:00 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Period
Run Number	4		
Serial Number	4637978		
Notes			

Instrument Model	**CEL-633C**
Battery Low	No
Duration	00:20:00 HH:MM:SS
End Date & Time	2/2/2024 10:19:41 AM
Overload	No
Pause Duration	00:00:00 HH:MM:SS
Response	Free Field
Run Number	2
Serial Number	2451068
Notes	
Start Date & Time	2/2/2024 9:59:41 AM
Site	Unallocated
Location	Unallocated
Person	Unallocated
Process	Unallocated
Result	Cumulative



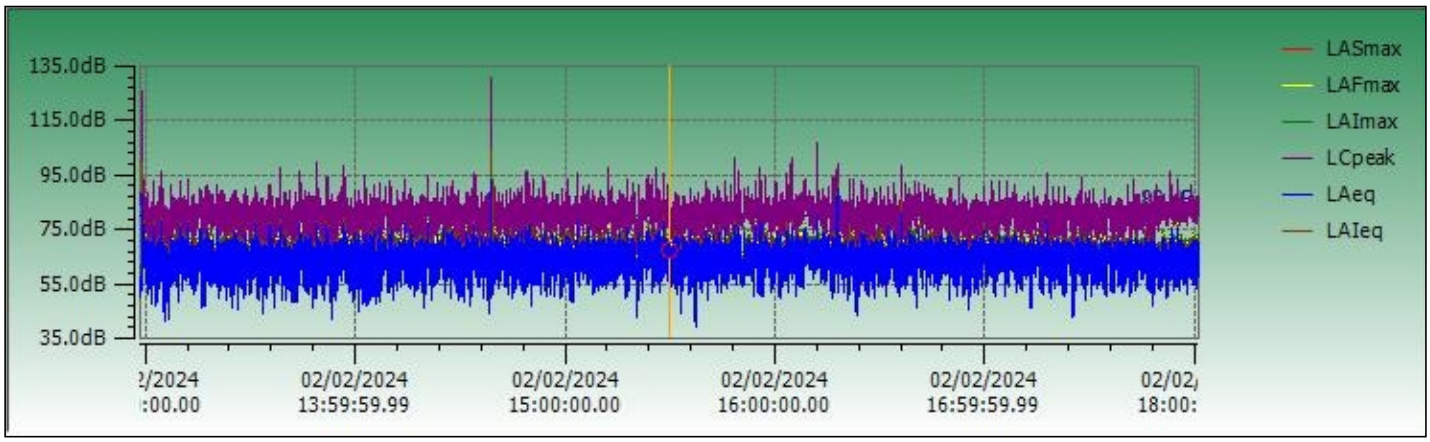
Instrument Model	**CEL-633C**
Battery Low	No
Duration	00:20:00 HH:MM:SS
End Date & Time	2/2/2024 9:07:18 AM
Overload	No
Pause Duration	00:00:00 HH:MM:SS
Response	Free Field
Run Number	1
Serial Number	2451068
Notes	
Start Date & Time	2/2/2024 8:47:18 AM
Site	Unallocated
Location	Unallocated
Person	Unallocated
Process	Unallocated
Result	Cumulative



Instrument Model	**CEL-633C**		
Battery Low	No	Start Date & Time	2/2/2024 11:38:44 AM
Duration	00:00:05 HH:MM:SS	Site	Unallocated
End Date & Time	2/2/2024 11:38:49 AM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:00 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Cumulative
Run Number	3		
Serial Number	2451068		
Notes			

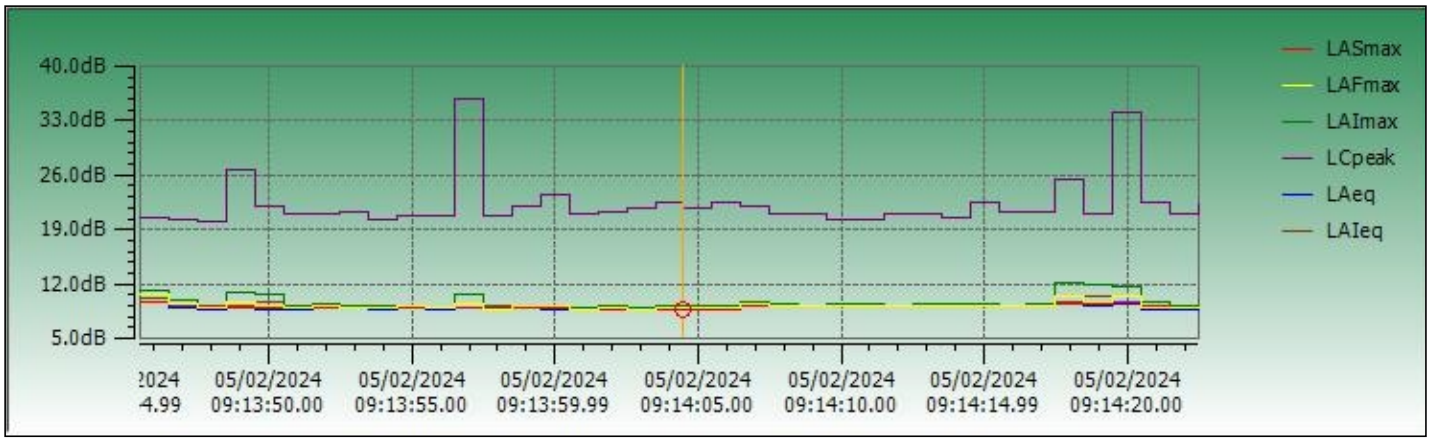
Instrument Model	**CEL-633A**		
Battery Low	No	Start Date & Time	2/2/2024 12:58:30 PM
Duration	05:02:46 HH:MM:SS	Site	Unallocated
End Date & Time	2/2/2024 6:01:16 PM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:09 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Period
Run Number	2		
Serial Number	4637978		

Notes

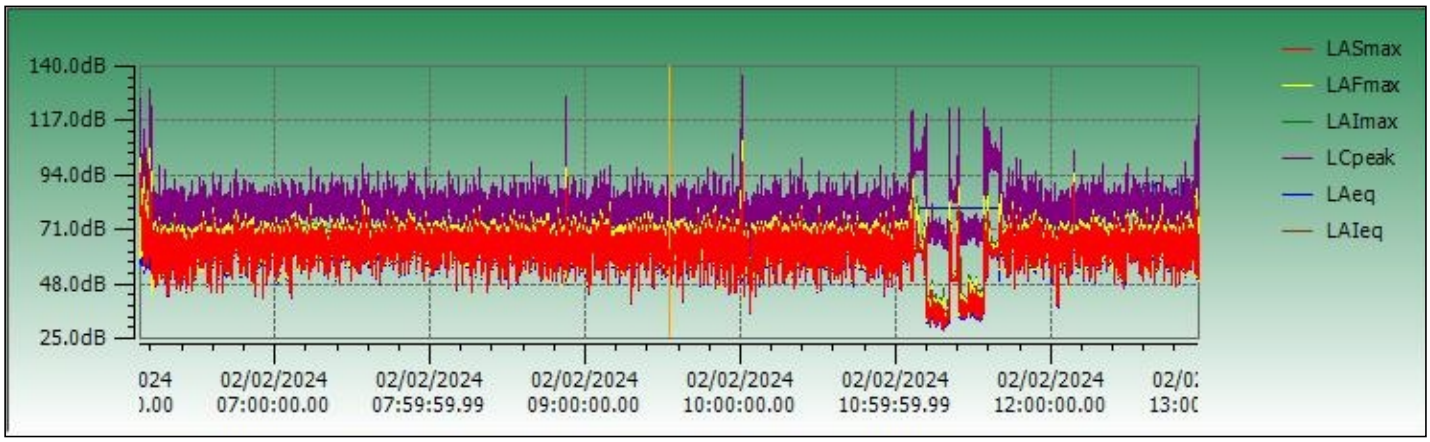


Instrument Model	**CEL-633A**

Battery Low	No	Start Date & Time	2/5/2024 9:13:45 AM
Duration	00:00:37 HH:MM:SS	Site	Unallocated
End Date & Time	2/5/2024 9:14:22 AM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:00:10 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Period
Run Number	3		
Serial Number	4637978		
Notes			



Instrument Model	**CEL-633A**		
Battery Low	No	Start Date & Time	2/2/2024 6:07:58 AM
Duration	06:49:21 HH:MM:SS	Site	Unallocated
End Date & Time	2/2/2024 12:57:19 PM	Location	Unallocated
Overload	No	Person	Unallocated
Pause Duration	00:35:38 HH:MM:SS	Process	Unallocated
Response	Free Field	Result	Period
Run Number	1		
Serial Number	4637978		
Notes			




100.0dB
80.0dB
60.0dB
40.0dB
20.0dB
0.0dB
/1899
0:00