NORTHERN STAR
RESOURCES LTD

ANNUAL NOISE AND BLAST MONITORING REPORT

ENVIRONMENTAL PROTECTION (FIMISTON GOLD MINE NOISE EMISSIONS) APPROVAL 2025

REPORTING PERIOD:
1 APRIL 2025 TO 31 MAY 2026

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1 Purpose

Kalgoorlie Consolidated Gold Mines Pty Ltd (KCGM) is required to submit an Annual Noise Monitoring Report to the CEO of the Department of Water and Environmental Regulation (DWER) within one month from the end of the reporting period in accordance with Condition 12 of the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025 (**2025 Fimiston Noise Approval**).

The Annual Noise Monitoring Report (this report) is required to include:

(a) a summary of the noise and airblast levels recorded under clause 10 during the year; and

(b) a summary of the progress of the implementation of the noise management plan submitted or revised under clause 11.

This Annual Report covers the period from **1 April 2025 to 31 May 2026**. In accordance with the approved KCGM Noise and Vibration Management Plan (August 2025) (**NVMP**), all data presented in the Annual Report relates to the reporting period of 1 April 2025 to 31 May 2026.

2 Summary of KCGM Operations

KCGM is a wholly owned subsidiary of Northern Star Resources Limited (NSR), and is responsible for operating the Fimiston Open Pit, Mt Charlotte Underground Mine and the Fimiston and Gidji Processing Plants.

The Fimiston Operations and Mt Charlotte Underground Mine are located adjacent to the City of Kalgoorlie-Boulder approximately 600 km east of Perth, Western Australia, whilst the Gidji Processing Plant is located approximately 17 km north of Kalgoorlie-Boulder.

KCGM comprises many facets of mining and mineral processing including:

- Open pit mining (Fimiston);
- Waste rock disposal (Fimiston);
- Underground mining (Mt Charlotte);
- Mineral processing (Fimiston and Gidji);
- Tailings disposal (Fimiston and Gidji);
- Ultra-fine grinding (Fimiston and Gidji);
- Electrowinning and refining (Fimiston); and
- Exploration.

On average, the Fimiston Processing Plant, in conjunction with the Gidji Gold Processing Plant, produces up to 600,000 ounces of gold each year with the Fimiston Open Pit and Mt Charlotte Underground having a combined gold reserve of approximately 12 million ounces.

The current production mine life will see mining and mineral processing continue until at least 2034.

3 Continuous Noise Monitoring

3.1 Monitoring Locations

Noise is monitored on a continuous basis at Boulder Primary School (BPS) and the Metal Exploration Premises (MEP) in accordance with the NVMP 2025 (Figure 1). x

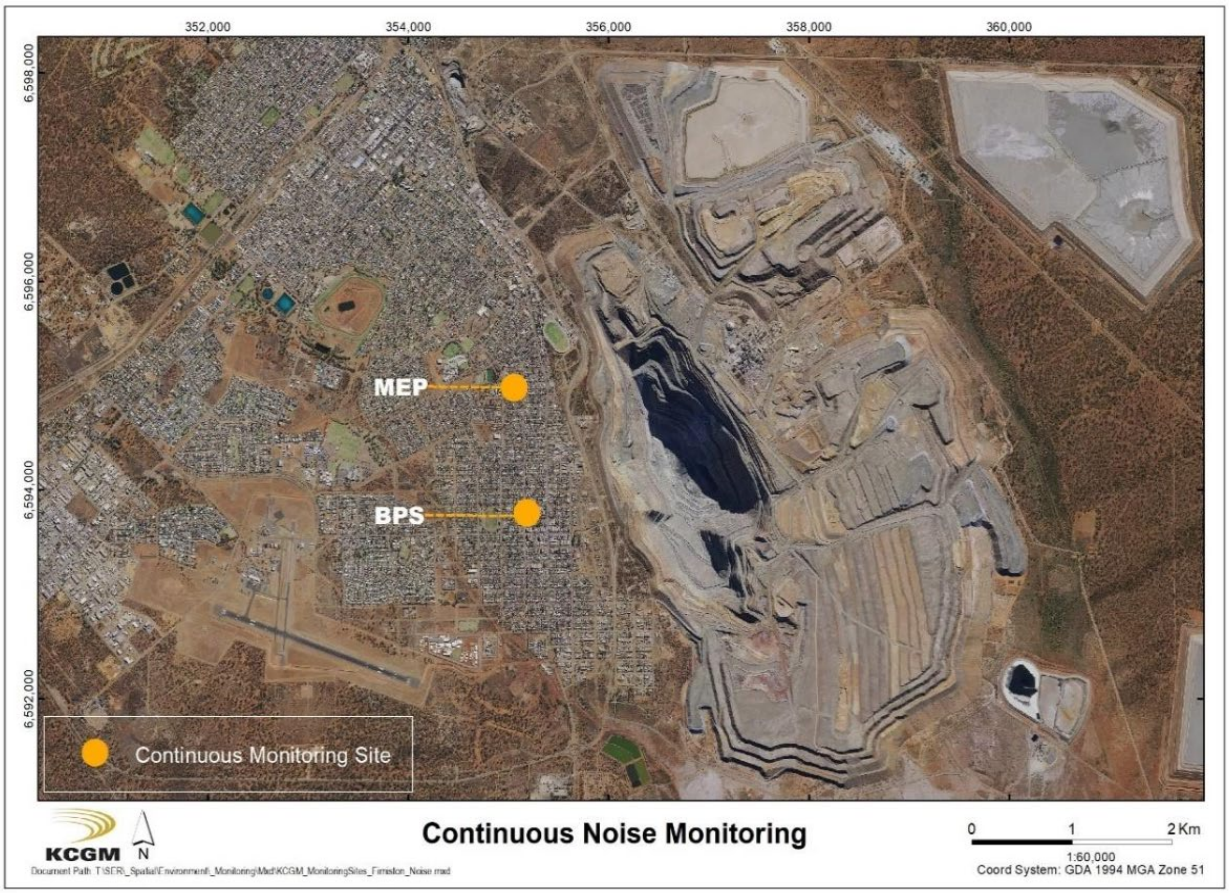

Figure 1: Continuous Noise Monitoring Sites

4 Equipment

KCGM uses a Bruel and Kjaer (B&K) 2250 Sound Level Meter (SLM) at each monitoring site with each SLM calibrated according to the manufacturer's specifications. Copies of the BPS and MEP calibration certificates are provided in Appendix 5.

4.1 Triggers

The BPS SLM is configured to record an event when the noise level exceeds 60 dB(A) between 1900 and 2200 hours and when the noise level exceeds 55 dB(A) between 2200 and 0700 hours for more than fifteen seconds. Triggers are analysed by KCGM as required, as they may assist with the identification of specific noise sources if a noise complaint has been received.

The SLM located at MEP requires a different configuration in order to provide real-time noise monitoring data for the KCGM website. In this configuration the MEP SLM does not allow triggers to be set and therefore noise events are not recorded, however, the data can be analysed if required.

4.2 Data

Graphs of continuous noise monitoring data for each compliance monitoring site are provided in Appendix 1. Boulder Primary School (BPS) records noise data as LA10, LA50 and LA90, while MEP records noise data as Leq. Continuous noise monitoring is required at BPS and MEP in accordance with the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016 and, from 30 May 2025, the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025, and the NVMP.

Data loss occurred at the MEP compliance monitoring site between 11 September 2025 and 12 September 2025 due to changes in instrument settings to capture additional monitoring metrics. Additional noise data loss occurred at the Metals Exploration Yard (MEX) compliance monitoring site between 30–31 January 2026, 4 February 2026, 1–2 March 2026, 4–5 March 2026, and 13–14 April 2026 due to a faulty output cable on the Bruel & Kjaer Type 2250 noise logger. The cable fault was rectified, and a replacement cable was installed. During all periods of data loss, noise monitoring data remained available from an alternate compliance monitoring location BPS. The monitoring issues were subsequently resolved, and continuous monitoring was restored.

5 Compliance Noise Monitoring

5.1 Sites

Compliance noise monitoring was undertaken during the reporting period in accordance with KCGM's Noise and Vibration Management Plan 2025 (NVMP). Monitoring was conducted by Herring Storer Acoustics on 21 May 2025, 11 August 2025, 25 November 2025, 23 February 2026, and 13 May 2026. Noise levels were measured at five reference locations specified in the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016, and 2025 where applicable at the time of monitoring and were assessed against the approved noise limits.

5.2 Equipment

For the compliance noise monitoring, Herring Storer Acoustics uses a Larson Davis 831 Sound Level Meter, which is calibrated according to the manufacturer's specifications. The five compliance noise monitoring locations are shown in Figure 2.

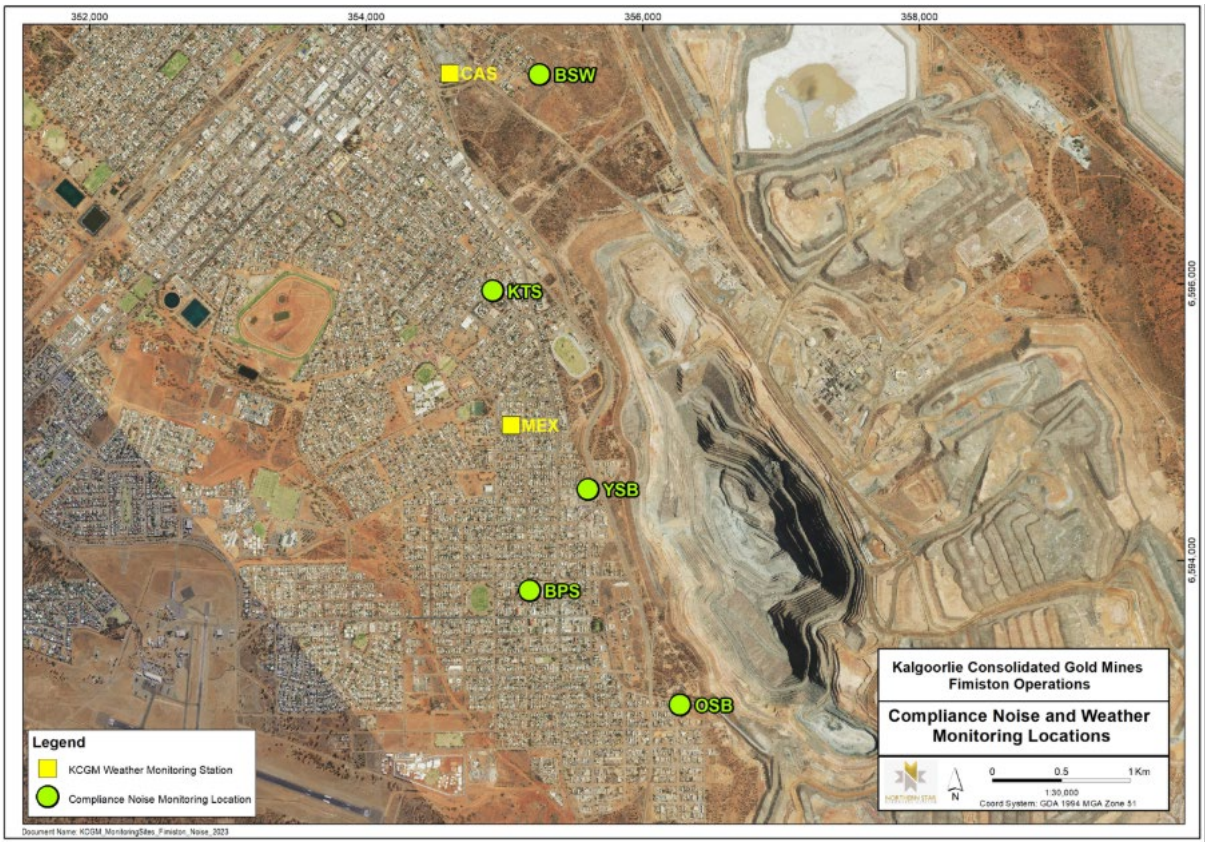

Figure 2: Compliance Noise Monitoring Locations

5.3 Noise Levels

The approved noise level for the evening/nighttime period for each reference location are presented in Table 1, whilst the applicable Weather Influencing Factor (WIF) for each reference location is presented in Table 2.

Table 1: KCGM Approved Noise Levels for Evening and Night

REFERENCE LOCATION	Approved NOISE Level (dB)	
	LA 10	LA max
BPS	45 + WIF	52 + WIF
BSW	45 + WIF	55 + WIF
KTS	45 + WIF	52 + WIF
OSB	49 + WIF	60 + WIF
YSB	49 + WIF	60 + WIF

Table 2: Weather Influencing Factors for Different Weather Conditions

Wind Direction	Wind Speed (km/hr)	Reference Location / WIF (dB)				
		BSW	BPS	KTS	OSB	YSB
Calm	<2	3	6	6	5	4
Northerly	≥2	-2	6	6	5	5
North Easterly	≥2	2	6	6	4	5
Easterly	≥2	4	6	6	4	5
South Easterly	≥2	4	6	6	3	5
Southerly	≥2	4	4	6	2	5
South Westerly	≥2	3	2	5	2	4
Westerly	2-7	0	2	3	3	2
Westerly	>7	-4	-3	-2	3	-3
North Westerly	2-7	-4	4	3	4	2
North Westerly	>7	-6	3	-1	3	-1

5.4 Data

The approved noise levels and the measured noise levels together with the determined WIF for each reference location are summarised in Table 3,4,5,6, and7 and shown graphically in Figure 3, 4, 5, 6, and 7.

Table 3: Compliance Noise Monitoring Results, Quarter 2 2025

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
BSW	21/05/2025 21:45 to 22:00	42	46	Easterly ≥2 = 4	49	59	Yes
BPS	21/05/2025 23:15 to 23:30	47	49	North Easterly ≥ 2 = 6	51	58	Yes
KTS	21/05/2025 22:20 to 22:35	50	54	Easterly ≥ 2 = 6	51	58	Yes

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
OSB	21/05/2025 22:40 to 22:55	50	53	North Easterly ≥ 2 = 3	53	64	Yes
YSB	21/05/2025 22:50 to 23:05	48	50	Easterly ≥2 = 5	54	65	Yes

Table 4: Compliance Noise Monitoring Results, Quarter 3 2025

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
BSW	11/08/2025 22:00 to 22:15	46	51	Easterly ≥2 = 4	49	59	Yes
BPS	11/08/2025 22:40 to 22:55	47	53	Easterly ≥ 2 = 6	51	58	Yes
KTS	11/08/2025 23:40 to 23:55	48	55	South Easterly ≥ 2 = 6	51	58	Yes
OSB	11/08/2025 23:00 to 23:15	41	55	South Easterly ≥ 2 = 3	52	63	Yes
YSB	11/08/2025 22:20 to 22:35	42	53	Easterly ≥2 = 5	54	65	Yes

Table 5: Compliance Noise Monitoring Results, Quarter 4 2025

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
BSW	25/11/2025 22:00 to 22:15	46	53	Easterly ≥2 = 4	49	59	Yes
BPS	25/11/2025 22:40 to 22:55	43	51	Easterly ≥ 2 = 6	49	56	Yes
KTS	25/11/2025 23:40 to 23:55	48	52	South Easterly ≥ 2 = 6	51	58	Yes
OSB	25/11/2025 23:00 to 23:15	45	48	South Easterly ≥ 2 = 3	52	63	Yes
YSB	25/11/2025 22:20 to 22:35	49	53	Easterly ≥2 = 5	54	65	Yes

Table 6: Compliance Noise Monitoring Results, Quarter 1 2026

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
BSW	23/02/2026 22:00 to 22:15	45	50	Easterly ≥2 = 4	49	59	Yes
BPS	23/02/2026 22:40 to 22:35	48	51	Easterly ≥ 2 = 6	51	58	Yes
KTS	23/02/2026 23:20 to 23:35	48	51	Easterly ≥ 2 = 6	51	58	Yes
OSB	23/02/2026 23:00 to 23:15	51	56	Easterly ≥ 2 = 4	53	64	Yes

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
YSB	23/02/2026 22:40 to 22:55	48	54	Easterly ≥2 = 5	54	65	Yes

Table 7:Compliance Noise Monitoring Results, Quarter 2 2026

REFERENCE LOCATION	Date / Time	Measured Noise Level (dB)		WIF	Approved Noise Level (dB)		Compliance Achieved
		LA10	LAmax		LA10	LAmax	
BSW	13/05/2026 21:15 to 21:30	34	44	North Easterly ≥ 2 = 2	47	57	Yes
BPS	13/05/2026 22:45 to 23:00	43	46	North Easterly ≥ 2 = 6	51	58	Yes
KTS	13/05/2026 22:00 to 22:15	41	44	North Easterly ≥ 2 = 6	51	58	Yes
OSB	13/05/2026 23:15 to 22:40	47	54	North Easterly ≥ 2 = 4	53	64	Yes
YSB	13/05/2026 22:40 to 22:55	45	47	Easterly ≥2 = 5	54	65	Yes

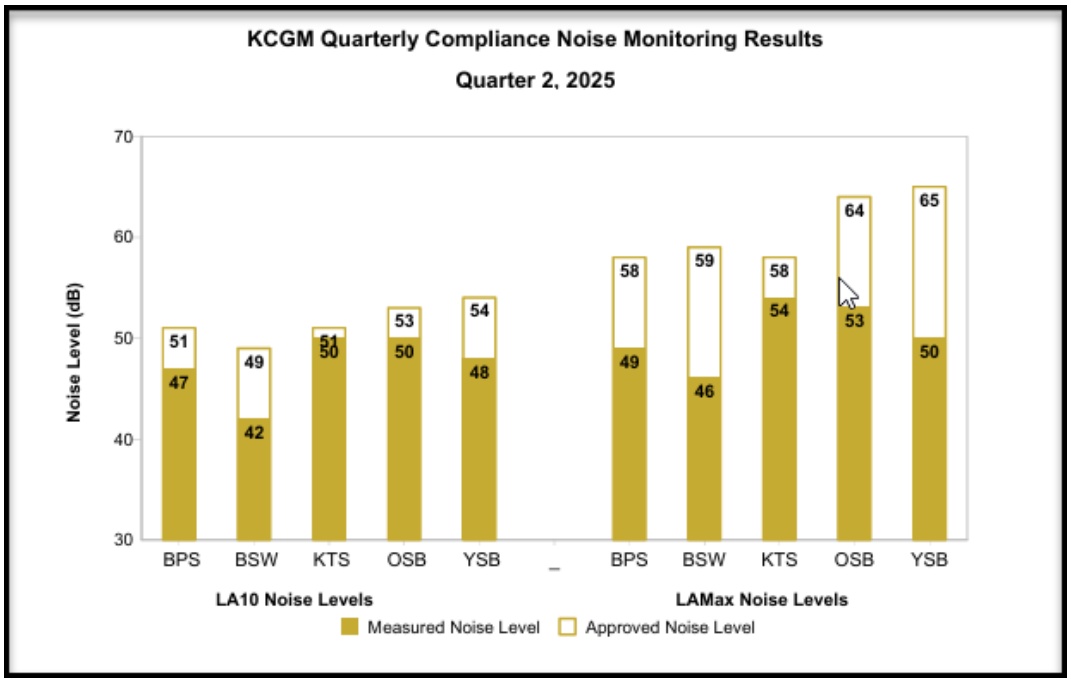

Figure 3: Compliance Noise Monitoring Results, Quarter 2 2025

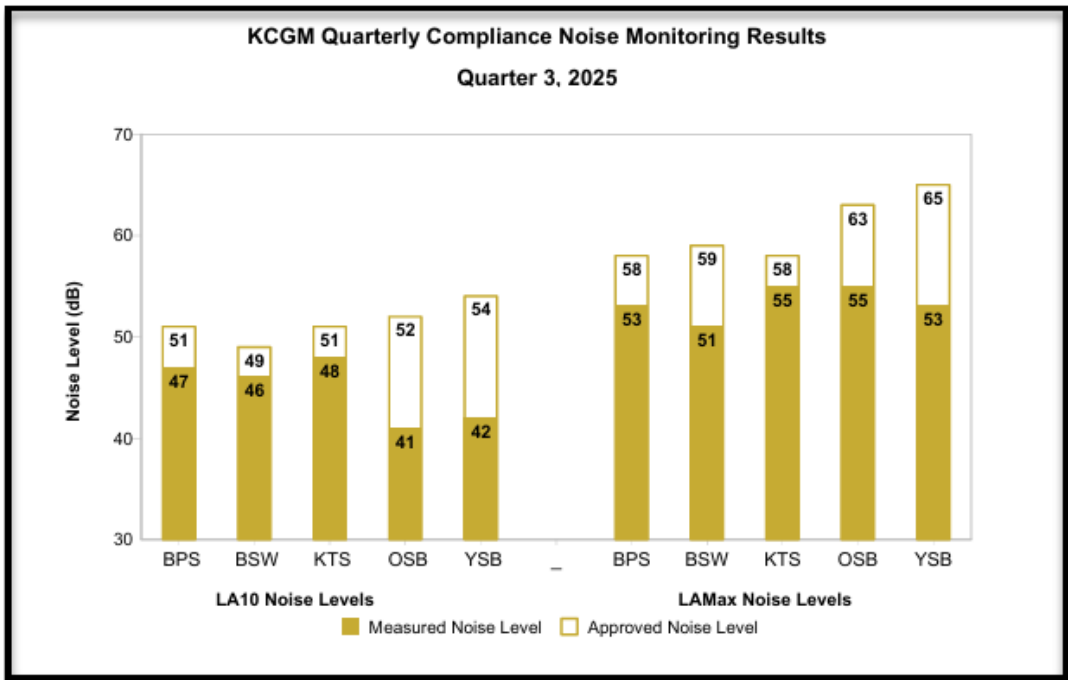

Figure 4: Compliance Noise Monitoring Results, Quarter 3 2025

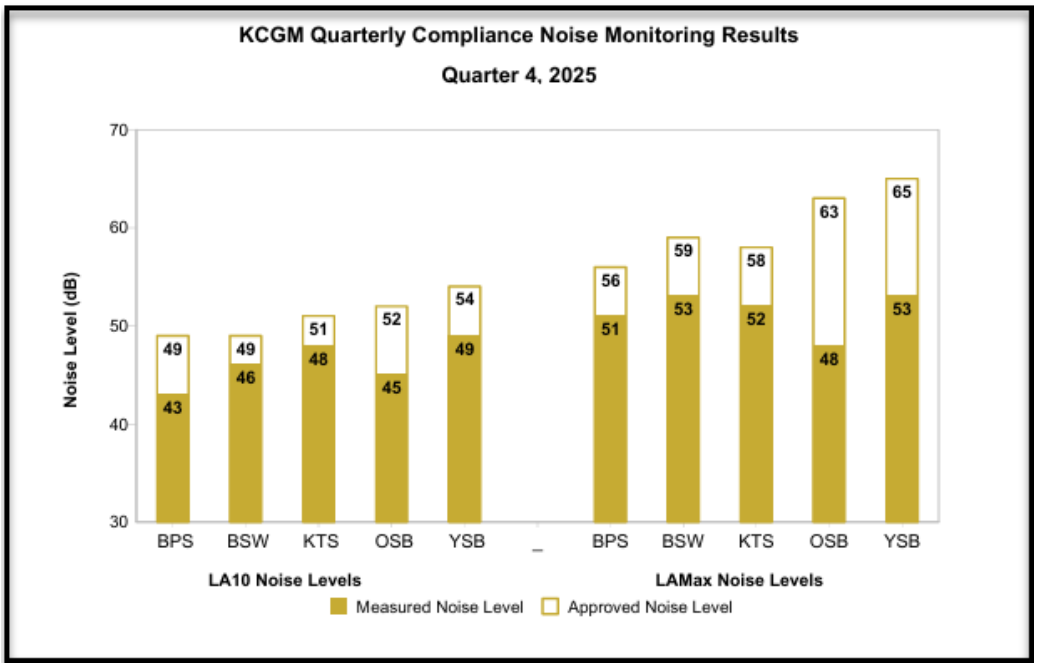

Figure 5: Compliance Noise Monitoring Results, Quarter 4 2025

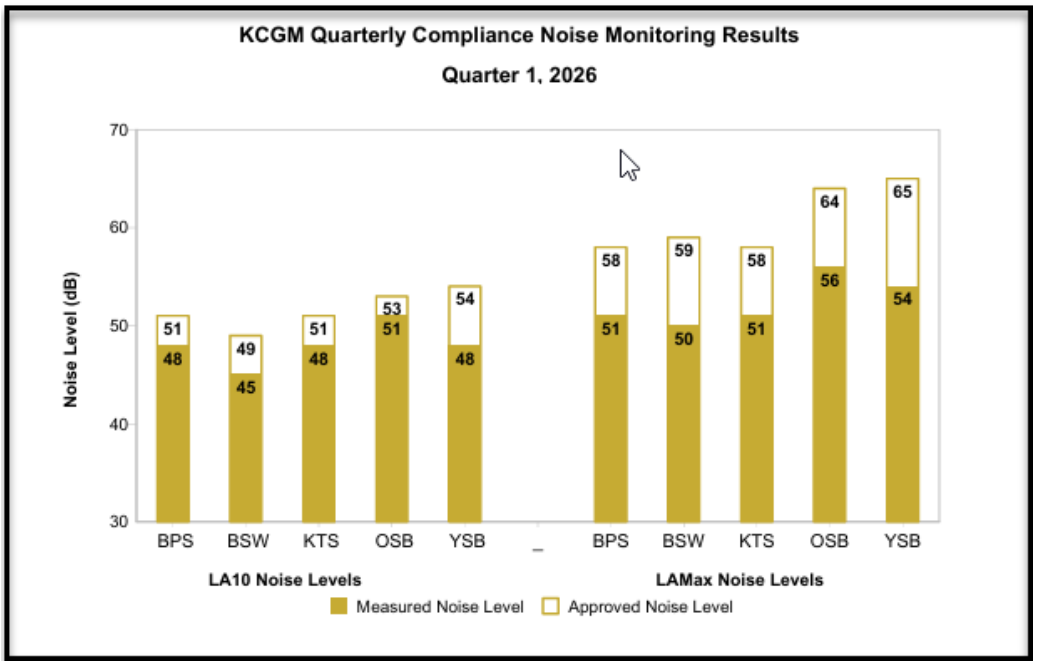

Figure 6: Compliance Noise Monitoring Results, Quarter 1 2026

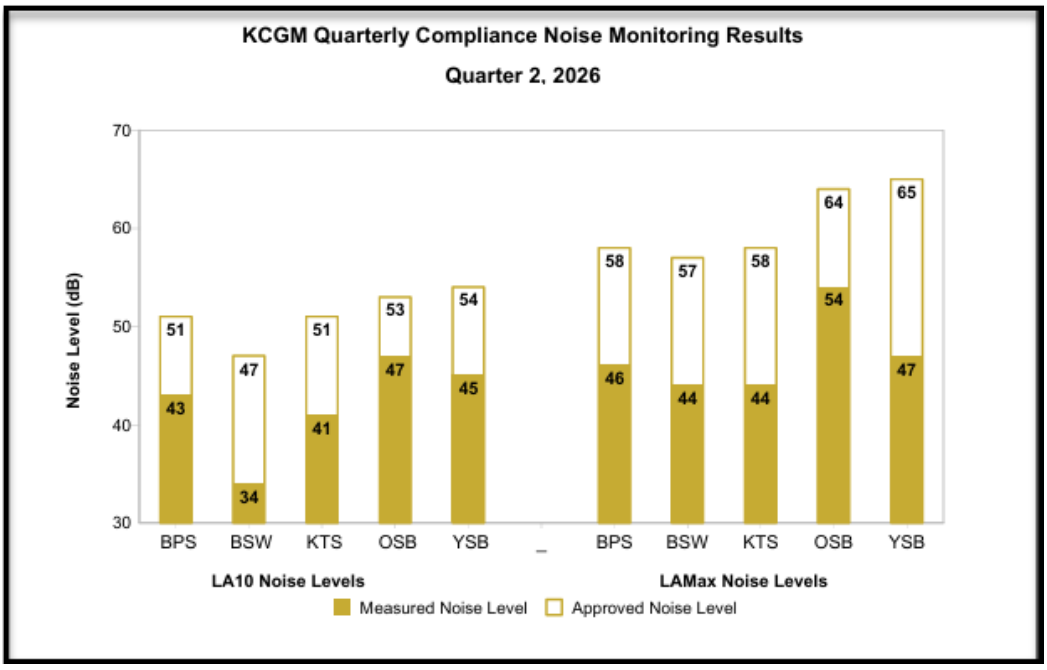

Figure 7: Compliance Noise Monitoring Results, Quarter 2 2026

6 Blast Monitoring (Airblast and Vibration)

6.1 Monitoring Locations

In accordance with the Nosie and Vibration Management Pan (NVMP) ground vibration and airblast emitted from the Fimiston Open Pit Operations as a result from blasting are monitored at six permanently installed blast monitoring sites between the Fimiston Open Pit and the City of Kalgoorlie-Boulder.

6.2 Equipment

KCGM uses advanced Texcel remote blast monitor equipment at all blast monitoring sites which are calibrated annually in accordance with the manufacturer's specifications. The annual calibration of the blast monitors was conducted from 14 July 2025 to 16 July 2025. Copies of the calibration certificates are provided in Appendix 6.

6.3 Triggers

Recording of a blast event (vibration and/ or airblast) occurs when vibration levels at any monitoring station exceed a set trigger level of 0.5 mm/s or when airblast overpressure exceeds 114dB.

6.4 Data

A total of 255 blast events were recorded at KCGM's Fimiston Open Pit Operations over the reporting period, comprising 44 events in the Q2 2025 period, 41 events in the Q3 2025 period, 68 events in the Q4 2025 period, 57 events in the Q1 2026 period, and 45 events during April to May 2026, as summarised across table 8 to 12.

The Alpha monitoring location recorded the highest number of blast triggers across the reporting period, with 62 events in the fourth Quarter, 43 in the Quarter 1 2026, 39 in the second, 34 in the third Quarter 2026, and 23 in the reporting period from 01 April to 31 May 2026.

Across the reporting period, only one blast event recorded a peak particle velocity (PPV) exceeding 5 mm/s (6mm/s). This demonstrates compliance with the applicable blast vibration requirements of MS782 (where applicable during the reporting period), Ministerial Statement 1258, the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025, and the Noise and Vibration Management Plan 2025, which requires that PPV shall not exceed 5 mm/s for 90% of blasts per year.

A summary of blast events recorded at each monitoring location is presented in Table 4, 5, 6, 7, and 8. Detailed blast event datasets for each monitoring location are provided in Appendix 2. Histograms illustrating airblast overpressure and vibration levels are included in Appendices 3 and 4 respectively.

Table 8: Blast Events Recorded for Quarter 2 2025

Number of Blast Events Recorded	Blast Monitoring Site					
	Alpha	Bravo	Charlie	Delta	Echo	Foxtrot
All Events	39	34	9	4	0	0
Events >5 mm/s	0	0	0	0	0	0

Table 9: Blast Events Recorded for Quarter 3 2025

Number of Blast Events Recorded	Blast Monitoring Site					
	Alpha	Bravo	Charlie	Delta	Echo	Foxtrot
All Events	34	35	14	4	1	4
Events >5 mm/s	0	0	0	0	0	0

Table 10: Blast Events Recorded for Quarter 4 2025

Number of Blast Events Recorded	Blast Monitoring Site					
	Alpha	Bravo	Charlie	Delta	Echo	Foxtrot
All Events	62	57	24	10	1	3
Events >5 mm/s	0	0	0	0	0	0

Table 11: Blast Events Recorded for Quarter 1 2026

Number of Blast Events Recorded	Blast Monitoring Site					
	Alpha	Bravo	Charlie	Delta	Echo	Foxtrot
All Events	43	35	17	11	0	3
Events >5 mm/s	0	0	0	0	0	0

Table 12: Blast Events Recorded for Time Period (1 April – 31 May 2026)

Number of Blast Events Recorded	Blast Monitoring Site					
	Alpha	Bravo	Charlie	Delta	Echo	Foxtrot
All Events	23	33	17	19	0	10
Events >5 mm/s	0	0	0	1	0	0

6.5 Compliance

6.5.1 Airblast

Airblast monitoring results during the reporting period indicate that compliance with the applicable criteria set out in the Environmental Protection (Noise) Regulations 1997 (WA), Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016 (where applicable during the reporting period), and Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025 was generally achieved. The airblast limit (dB LZ peak) requires that exceedances do not occur in more than 1 in 10 consecutive blasts at a monitoring station.

During the reporting period, all blasting activities were undertaken in accordance with approved operating procedures and standard blast design controls. Production blasting at KCGM is managed to minimise potential impacts on surrounding sensitive receptors, including the Kalgoorlie-Boulder community. Blast monitoring equipment is subject to routine inspection and annual calibration to ensure data accuracy.

6.5.2 Vibration

All blast vibration levels recorded during the reporting period were compliant with the applicable requirements of MS782 (for the initial portion of the reporting period), Ministerial Statement 1258 (from 20 October 2025 onwards), Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025, and the Noise and Vibration Management Plan 2025.

One PPV exceedance (6.03 mm/s) was recorded at the Delta monitor on the 17 April 2026, located 350 m from blast 070-4213. An internal investigation was initiated, and all other blast events remained within the prescribed vibration limits.

6.5.3 Sunday and Public Holiday Blasts

In accordance with Condition 9-4 of MS782 (where applicable during the reporting period), MS1258 and NVMP 2025, KCGM is to make all reasonable effort to avoid blasting on Sundays. If a blast does occur on a Sunday, then an explanation is provided in this report (Table 13).

Each request to blast on a Sunday or Public Holiday is subject to an internal, multi-departmental review and considers a number of factors including likely impact to nearby residents and wind conditions.

Table 13: Sunday and Public Holiday Blast Events

Date	Operational Justification	Environmental Considerations	Outcome
06/04/2025	Replenish critical digging material to maintain mining operations and avoid production delays.	Standard blast controls applied.	Production continuity maintained.
13/04/2025	Release additional material on the 200 floor and establish an additional dig face in GB2.	Green wind conditions and forecast rainfall minimised dust impacts.	Additional access to material achieved.
18/04/2025	Support weekly production targets and facilitate bench turnover.	Standard blast controls applied.	Pit progression maintained.
20/04/2025	Provide additional material to support loading unit productivity.	Standard blast controls applied.	Loading Operations Maintained
21/04/2025	Support multiple active dig units in OBH and maintain production targets.	Standard blast controls applied.	Production KPIs maintained.
25/04/2025	Open an additional dig face following access delays and support bench advancement.	Green wind conditions.	Bench advancement maintained.
27/04/2025	Ensure material availability ahead of forecast unfavourable weather.	Blast undertaken prior to adverse wind conditions	Weather-related delays minimised.
04/05/2025	Advance OBH to the 290 RL in accordance with the mine plan	Standard blast controls applied.	Production continuity maintained.
04/05/2025	Advance OBH to the 290 RL in accordance with the mine plan.	Standard blast controls applied.	Mine plan progression maintained.
11/05/2025	Restore material availability following operational delays.	Blast undertaken following safety review.	Dig unit downtime minimised.
18/05/2025	Supply material for multiple active dig units in OBH.	Standard blast controls applied.	Production continuity maintained.
25/05/2025	Supply material to an active digging unit in Golden Pike.	Small-scale blast in isolated location; minimal community impact anticipated.	Material availability maintained.
01/06/2025	Support multiple active dig units in OBH.	Standard blast controls applied.	Production targets maintained.
02/06/2025	Maintain continuous digging operations.	Standard blast controls applied.	Productivity losses avoided.
08/06/2025	Progress mining sequence during EOFY operational period	Blast design minimised dust impacts despite unfavourable wind conditions	Mining sequence maintained.
15/06/2025	Maintain ore supply and active dig unit productivity.	Standard blast controls applied.	Operational continuity maintained.
22/06/2025	Safely remove a previously misfired presplit blast.	Safety procedures implemented.	Misfire safely cleared.
29/06/2025	Provide material and create access for presplit trimming activities.	Standard blast controls applied.	Bench progression maintained.
13/07/2025	Provide material for active dig units.	Standard blast controls applied.	Production targets supported.
20/07/2025	Address limited material availability and support bench progression.	Standard blast controls applied.	Production continuity maintained.
27/07/2025	Supply material for active dig units.	Standard blast controls applied.	Production objectives maintained.
03/08/2025	Support OBH pit progression and ramp clearing activities.	Green wind conditions.	Mining sequence maintained.

Date	Operational Justification	Environmental Considerations	Outcome
17/08/2025	Recover schedule and open additional dig faces.	Red wind conditions assessed and approved through internal review.	Ore recovery and production continuity maintained.
24/08/2025	Continue mining and bench turnover following scheduling delays.	Standard blast controls applied.	Shovel productivity maintained.
31/08/2025	Support three active dig units and geological assessment requirements	Standard blast controls applied.	Material availability maintained.
08/09/2025	Provide material and contingency ramp access.	Standard blast controls applied.	Operational flexibility maintained.
14/09/2025	Supply material to active dig units.	Standard blast controls applied.	Production delays avoided.
28/09/2025	Support pit-edge progression and infrastructure relocation.	Green wind conditions.	Production requirements achieved.
05/10/2025	Secondary blast to facilitate drilling activities.	Dust management controls implemented	Operational efficiency maintained.
12/10/2025	Provide material for active dig units.	Standard blast controls applied.	Bench advancement maintained.
19/10/2025	Support multiple dig units and bench sequencing.	Dust controls implemented under marginal conditions.	Production continuity maintained.
26/10/2025	Support GP operations and bench progression.	Minimal community impact anticipated due to blast location.	Operational continuity maintained.
02/11/2025	Support production objectives and material availability.	Standard blast controls applied.	Production continuity maintained.
09/11/2025	Facilitate geotechnical works and bench development.	Standard blast controls applied.	Safe access established.
16/11/2025	Support bench development and future ore delivery.	Standard blast controls applied.	Mining sequence maintained.
23/11/2025	Establish safe working edge at OBH following delay.	Weather and operational constraints considered.	Bench progression maintained.
30/11/2025	Support GP and OBH operations	Standard blast controls applied.	Operational efficiency maintained.
07/12/2025	Maintain production sequencing following delay.	Geotechnical and weather constraints considered.	Production sequence maintained.
14/12/2025	Support GB1, GB progression and OBH production.	Standard blast controls applied.	Production continuity maintained.
21/12/2025	Maintain material supply for active dig units.	Standard blast controls applied.	Production targets supported.
25/12/2025	Support GP production and bench progression.	Standard blast controls applied.	Production continuity maintained.
26/12/2025	Release material and provide drilling access in OBH.	Standard blast controls applied.	Safe access maintained.
28/12/2025	Support shovel operations and OBH production.	Standard blast controls applied.	Material availability maintained.
01/01/2026	Provide material for active digging operations pending larger pit-edge blast.	Suitable wind conditions assessed prior to blasting.	Production continuity maintained.
04/01/2026	Facilitate pit-edge clean-up and improve material availability.	Favourable wind conditions.	Operational efficiency maintained.
11/01/2026	Address low material availability in OBH	Standard blast control applied.	Production requirement maintained

Date	Operational Justification	Environmental Considerations	Outcome
18/01/2026	Rescheduled blast following adverse weather conditions	Undertaken during favourable conditions.	Production cycle maintained.
25/01/2026	Address low stock levels and support production continuity	Wind conditions monitored prior to blasting.	Material availability maintained.
26/01/2026	Critical pit-edge remediation and safety works.	Favourable wind conditions.	Pit wall remediation completed.
01/02/2026	Maintain active digging operations in OBH.	Weather forecast considered.	Operational continuity maintained.
15/02/2026	Address rapidly depleting stockpiles in Golden Pike.	Standard blast controls applied.	Production targets supported.
22/02/2026	Release material during favourable wind conditions.	Green wind window utilised.	Production supported.
01/03/2026	Support production targets and drilling progression.	Standard blast controls applied.	Mining sequence maintained.
02/03/2026	Prevent shovel and drill downtime.	Minimal dust expected.	Operational continuity maintained.
08/03/2026	Maintain production while managing dust risk.	Standard blast controls applied.	Dust impacts minimised.
15/03/2026	Release drill space and maintain drilling continuity.	Standard blast controls applied.	Drill stand-down avoided
22/03/2026	Release material to production.	Standard blast controls applied.	Production requirements met.
29/03/2026	Unlock blasted material for active dig units.	Favourable wind conditions.	Dig unit operations maintained.
03/04/2026	Release material for production activities in OBH 340 RL.	Standard blast controls applied irrespective of wind direction.	Mining cycle delays minimised and production access maintained.
05/04/2026	Release ground for critical drilling activities in GP.	Weather conditions monitored and standard blast controls applied.	Drilling Continuity Maintained
06/04/2026	Release material for production, improve truck turning radius, and enable excavation of the remaining Shot 38	Standard blast controls applied during blasting activities.	Production access improved and mining progression maintained despite manpower constraints.
19/04/2026	Release material for production operations.	Blast area soaked with water, lookout closed during firing, wind conditions monitored, and blast scheduled within a suitable wind window where possible.	Production requirements achieved while minimising dust impacts.
26/04/2026	Unlock blasted stocks for shovel access and open the 360 floor through pre-split blasting.	Standard blast controls applied with focus on dust management.	Access to planned mining areas restored and revised monthly priorities supported.
03/05/2026	Release material for Production and ground for drilling activities in GP.	Standard blast controls applied irrespective of wind direction.	Production and drilling continuity maintained, preventing material shortages
10/05/2026	Enable continuation of drilling and loading activities to achieve daily and monthly production targets.	Standard blast controls applied.	Drilling and loading operations maintained, reducing risk of equipment downtime.

Date	Operational Justification	Environmental Considerations	Outcome
24/05/2026	Release material for production following delays associated with free-facing requirements.	Pre-split blasting undertaken in GP with low dust generation potential and standard blast controls applied.	Production access restored and mining schedule maintained.
31/05/2026	Release material for production following weather-related delays.	Standard blast controls applied and blast completed before reopening of GP where practicable.	Production material made available and further delays minimised.

7 Public Complaints

A total of eight complaints were received during the reporting period relating to noise, vibration, and blasting activities at KCGM's Fimiston Open Pit and Underground Operations. KCGM's approach to Complaint Management is outlined in the NVMMP. A summary of any complaints regarding noise and/or vibration received are presented in Table 14.

Table 14: Summary of Complaints during the Reporting Period (01 April 2025 to 29 May 2025)

Complaint Category	Date	Summary of Complaint
Vibration	18/05/2025	A complaint was received concerning excessive ground vibration and alleged property damage. The complainant reported repeated strong blasting over a two-week period, citing cracks in outdoor concrete and items falling from shelves. Investigation confirmed that a Fimiston Open Pit blast conducted on 18 May 2025 recorded an overpressure exceedance of 116.8 dB, while ground vibration levels remained low. The Community team engaged with the resident and an internal property damage investigation was undertaken.
Nosie & Vibration	30/06/2026	A complaint was received regarding noise and vibration impacts, with the resident reporting rattling windows and frequent vibration believed to be associated with mining activities. Investigation confirmed that blast overpressure levels remained below the reporting threshold of 115 dB; however, prevailing wind conditions towards the town may have amplified perceived impacts. Blasting practices were reviewed and adjusted by reducing the number of holes per firing panel to minimise overpressure. The Community team provided monitoring data and operational information to the resident, resolving the matter through consultation and transparency.
Noise	06/08/2025	A noise complaint was received from a Boulder resident regarding disturbances caused by an excavator horn during night-time hours on 5 and 10 July 2025. An assessment undertaken by the Environment team determined that measured noise levels remained below the WIF limit of 58 dB. The matter was further reviewed in collaboration with Mining and Community personnel to identify potential behavioural causes and investigate opportunities for operational improvements and alternative communication methods.
Noise	08/08/2025	A resident in Boulder reported excessive noise associated with a blast conducted at approximately 1720 hours. Investigation confirmed that both blast noise and vibration levels were within approved regulatory limits, with no exceedances recorded. The Community team engaged directly with the complainant and provided monitoring results and operational information. Following consultation, the matter was resolved and closed.
Vibration	16/09/2025	A complaint was received from a Boulder resident regarding excessive vibration from a blast conducted at approximately 1730 hours. The

Complaint Category	Date	Summary of Complaint
		complainant reported noticeable shaking of their property during the event. A review of blast monitoring data confirmed that vibration and overpressure levels complied with all applicable regulatory requirements. The findings were communicated to the resident by the Community team, and the complaint was subsequently closed.
Noise	19/02/2026	A noise complaint was received via the online Feedback Form regarding persistent beeping noises originating from the Fimiston Open Pit during late-night and early-morning hours. The complainant reported that the beeping was continuous and disruptive. As the submission was made anonymously, direct follow-up was not possible. The complaint was recorded and referred to the Operations and Environment teams for review and investigation before being closed in accordance with site procedures.
Noise	26/04/2026	Following the ANZAC Day Dawn Service at Loopline Park, Boulder, a complaint was received regarding machinery noise from Fimiston Open Pit operations that was audible throughout the service. The complainant advised that the noise was distracting and affected participants' ability to fully engage in the event. The matter was reviewed by the Community and Operations teams, and feedback was provided to site management. The Community team subsequently contacted the complainant, acknowledged the concern, apologised for the oversight, and advised that operational controls would be implemented for future services to minimise potential impacts.
Noise & Vibration	07/05/2026	A South Boulder resident submitted complaints via the online Feedback, Suggestion and Complaint Form regarding dust, noise and vibration impacts associated with Fimiston Open Pit operations. Concerns included dust accumulation on vehicles, clothing and household surfaces, potential health impacts from dust exposure, excessive night-time operational noise, and blast vibration reportedly causing windows and the residence to shake. The complainant also expressed concerns regarding the proximity of their property to the noise bund. Due to the nature and complexity of the concerns, the matter was escalated to a Second Order Complaint. The Community team engaged directly with the resident and arranged a site meeting involving the Community Manager and Community Advisor to review concerns, discuss monitoring data and determine appropriate follow-up actions.

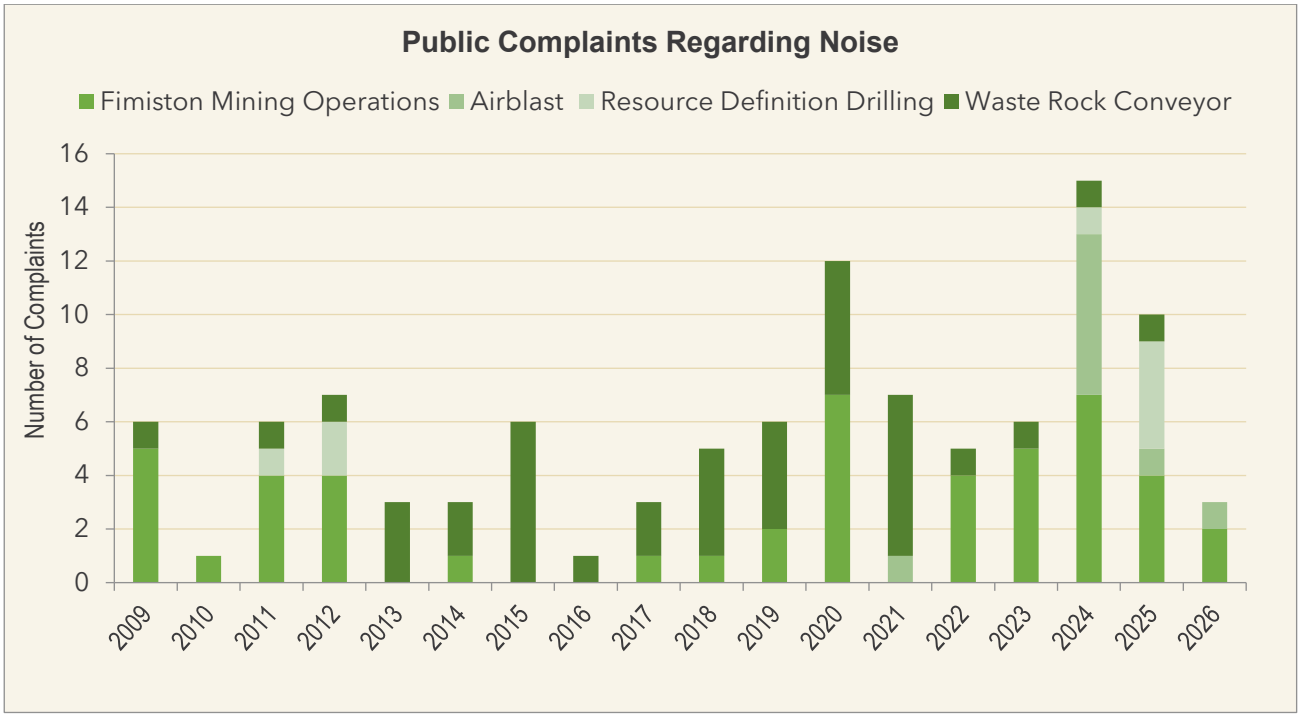

Figure 8: Summary of noise complaints received by KCGM since 2009 (by calendar year) with respect to activities managed under the NVMP.

8 Noise Management

8.1 Regulation 17 Variation

During this reporting period, Kalgoorlie Consolidated Gold Mines Pty Ltd (KCGM) received Ministerial approval for the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2025 under Regulation 17 of the *Environmental Protection (Noise) Regulations 1997*. The approval was published in the Western Australian Government Gazette on 30 May 2025 and provides regulatory authorisation for KCGM to emit noise levels above the prescribed standards under defined conditions.

The 2025 Approval establishes approved LA10 and LAmax noise limits and airblast levels for specified locations surrounding the Fimiston Gold Mine, including Boulder Primary School, Kalgoorlie Technical School, Barton Street (Williamstown), Oroya Street (Boulder), and York Street (Boulder). It also incorporates weather influencing factors (WIFs) to account for variations in wind speed and direction that may affect noise propagation.

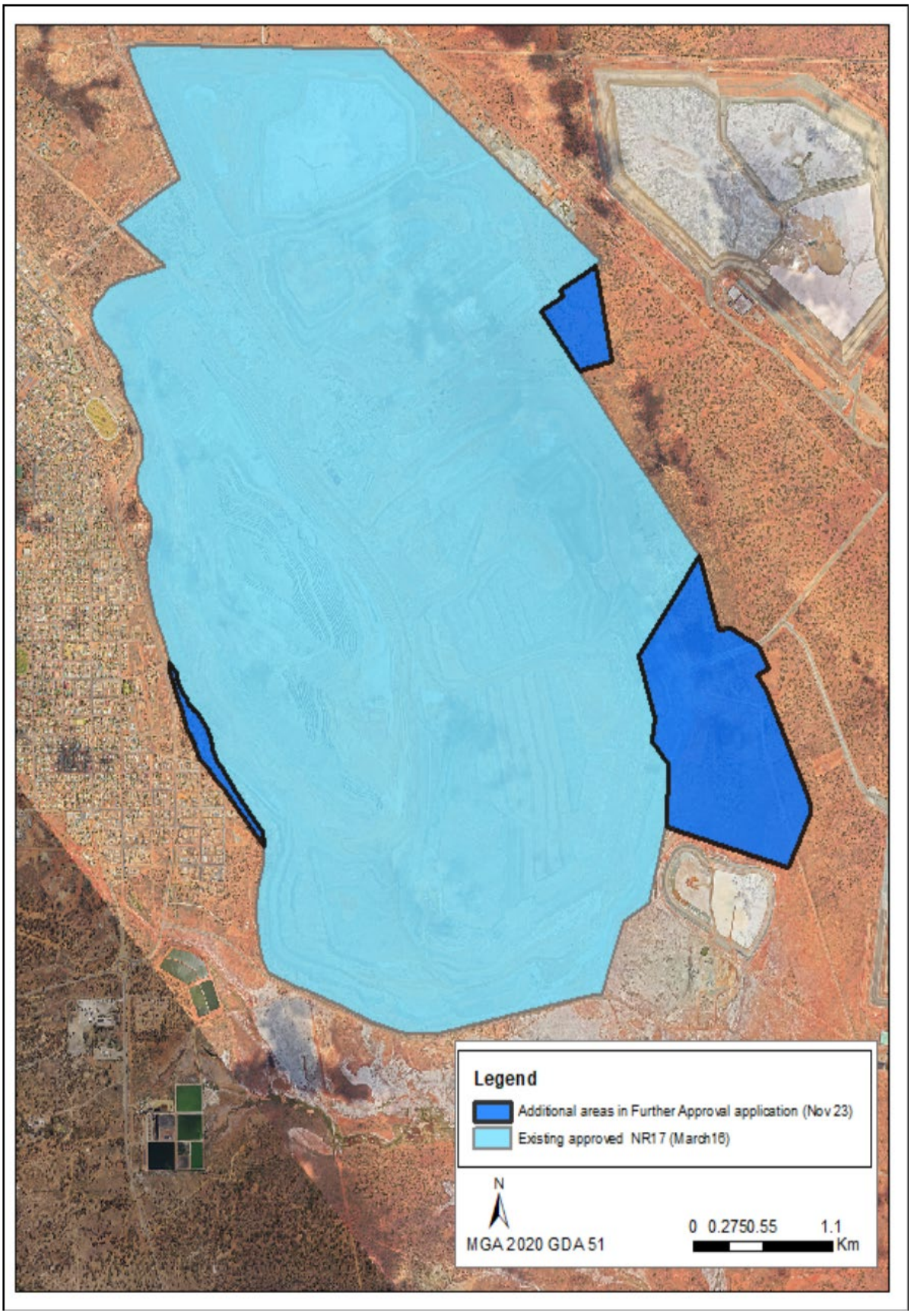

Figure 9: Proposed Changes to the Noise Envelope

APPENDIX 1: Continuous Noise Monitoring Results

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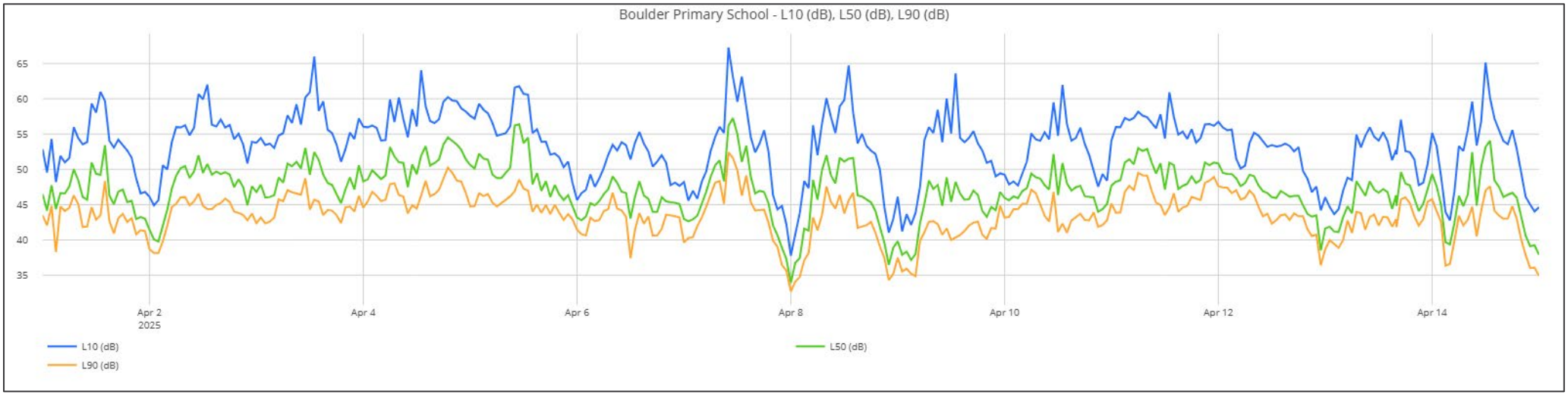

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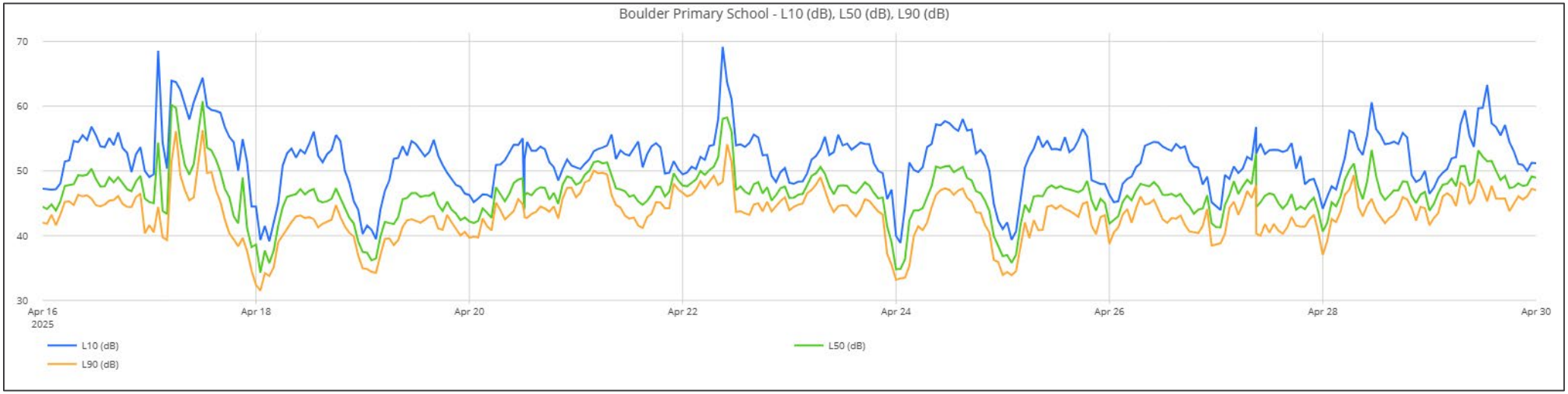

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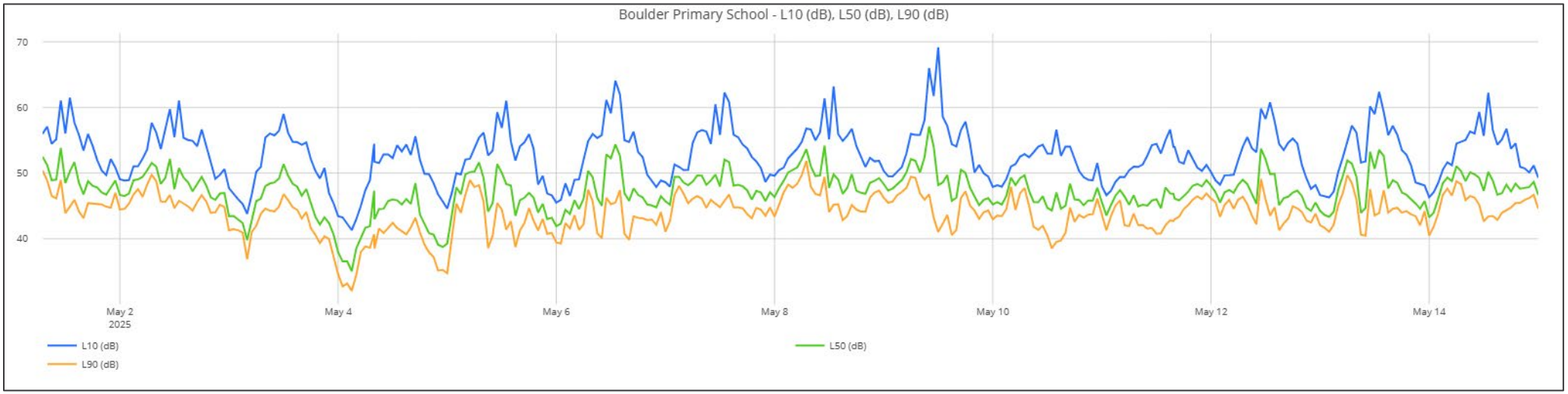

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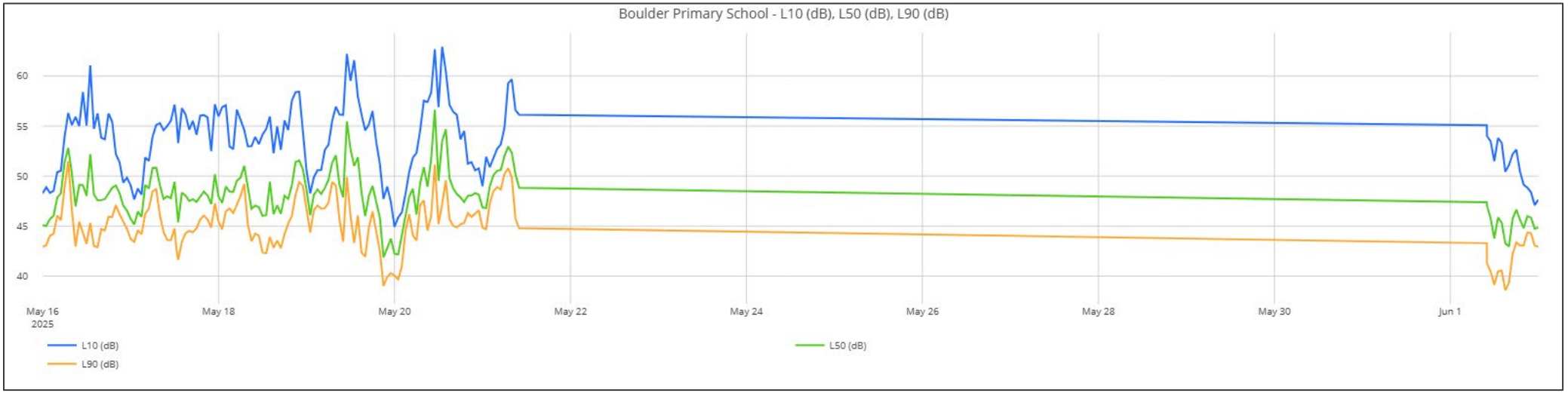

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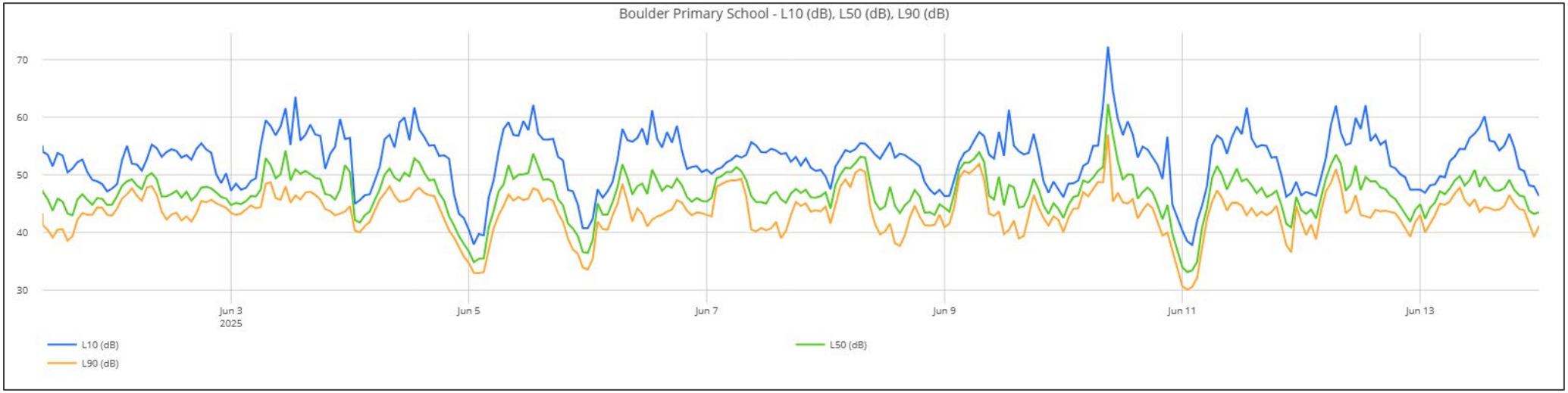

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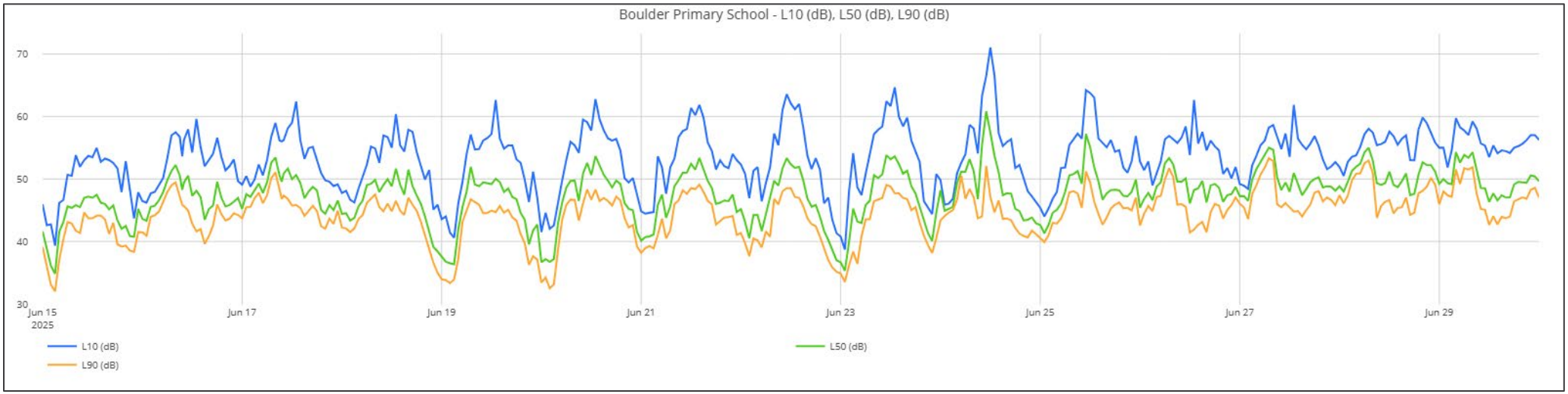

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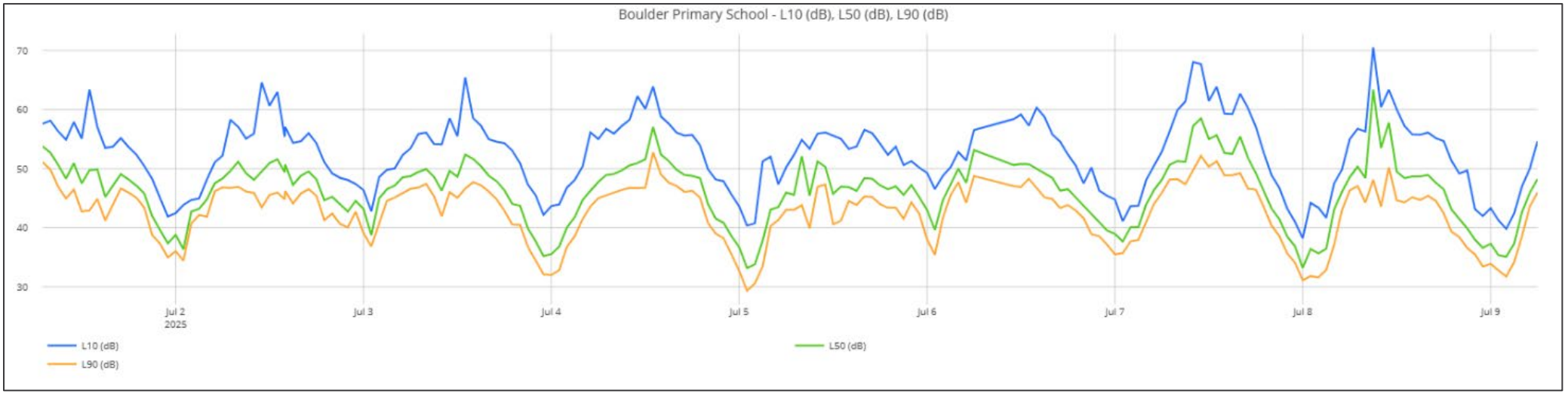

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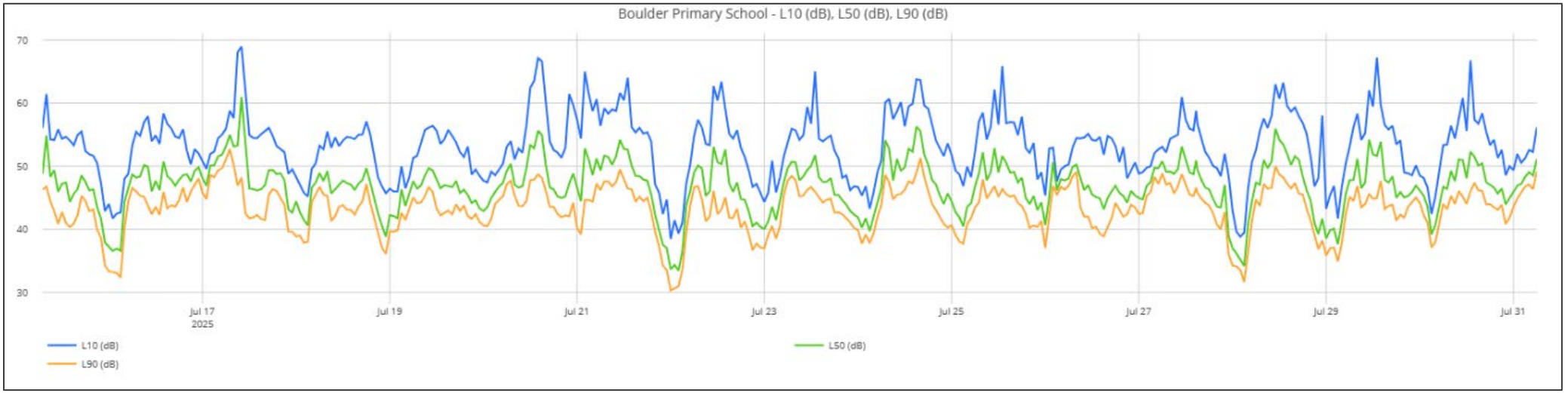

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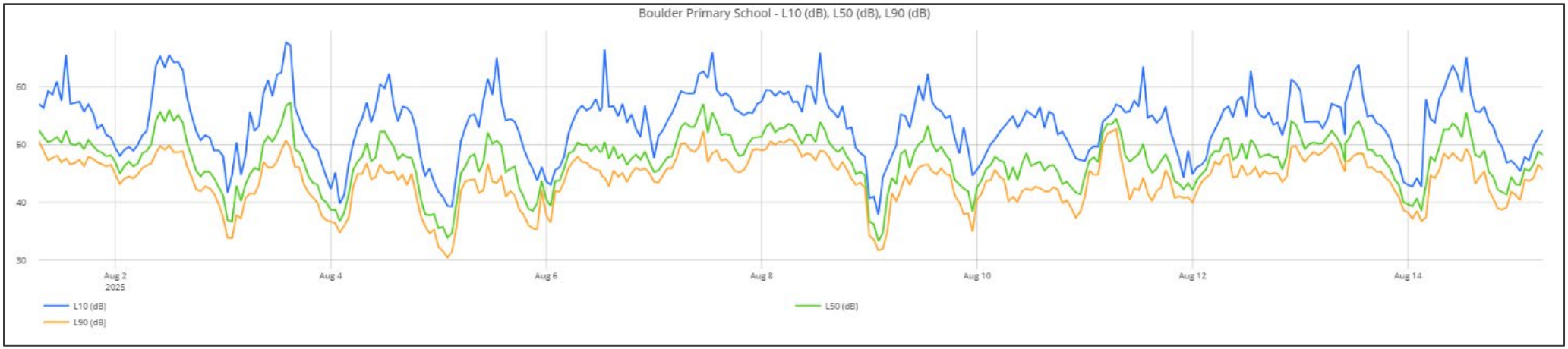

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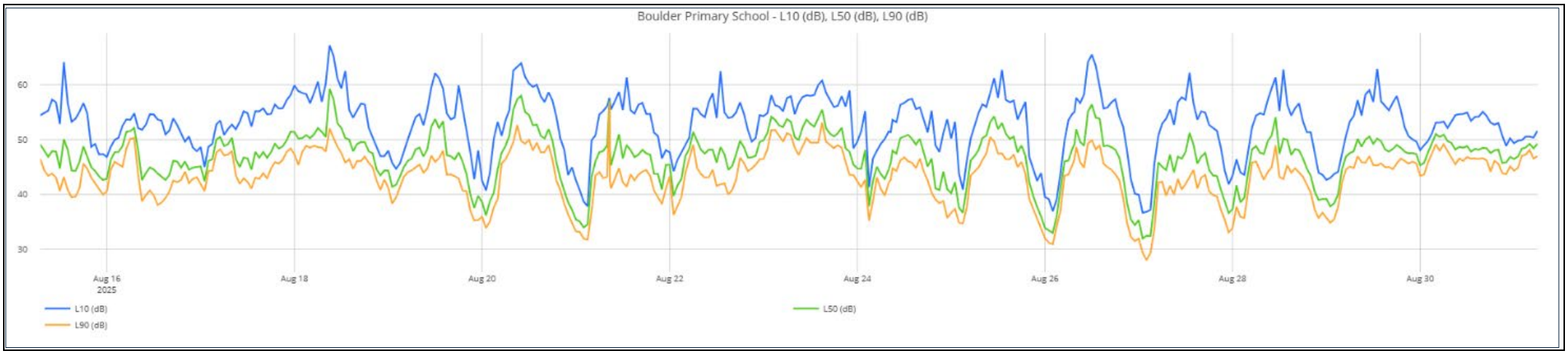

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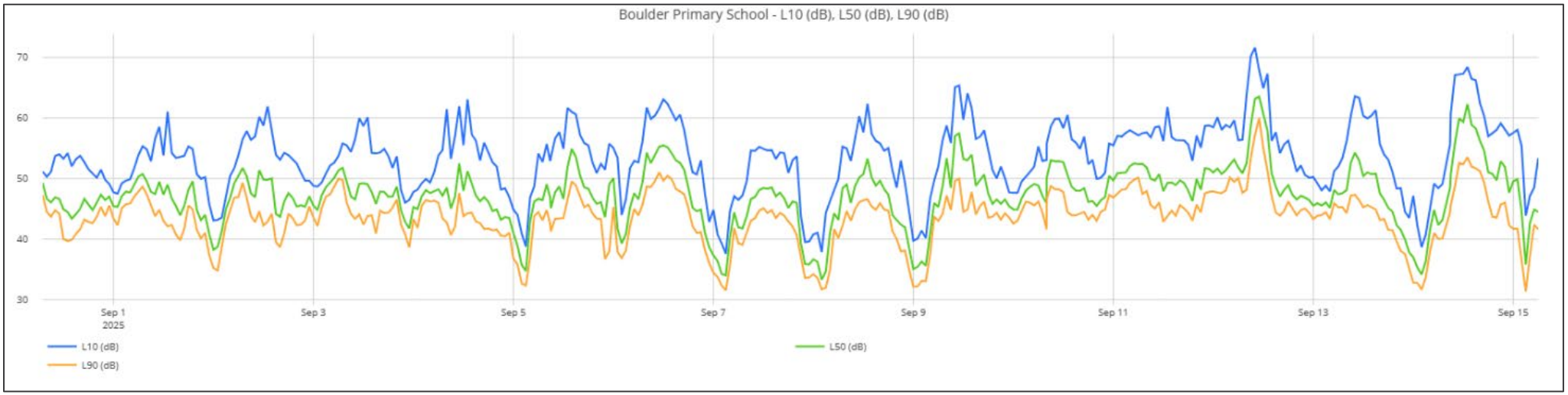

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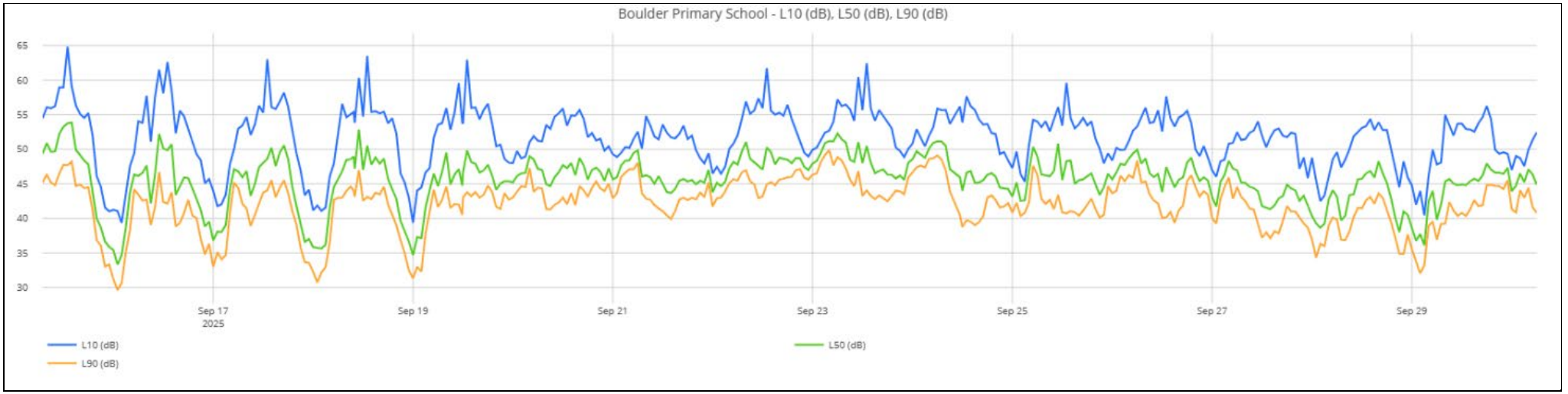

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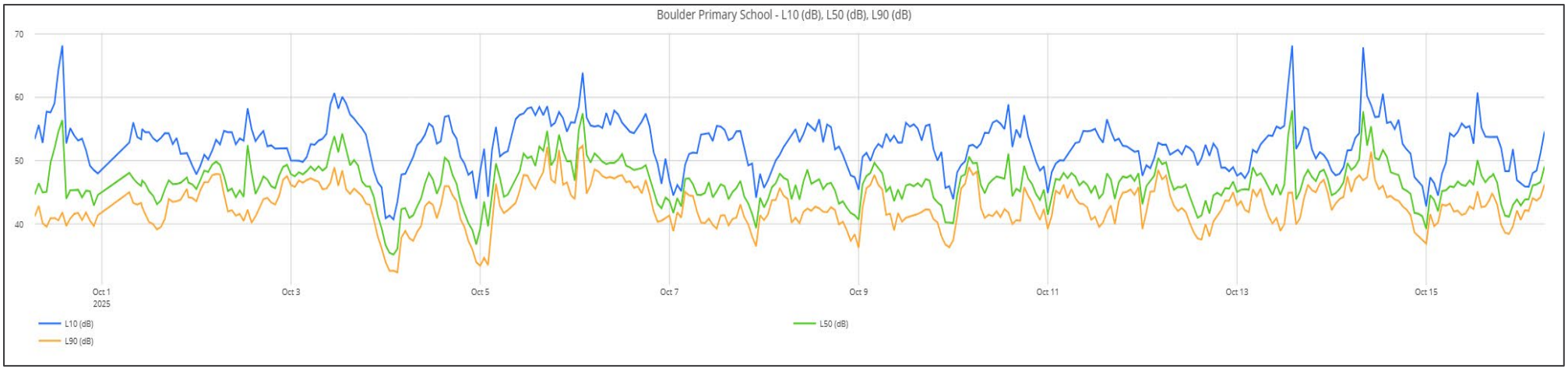

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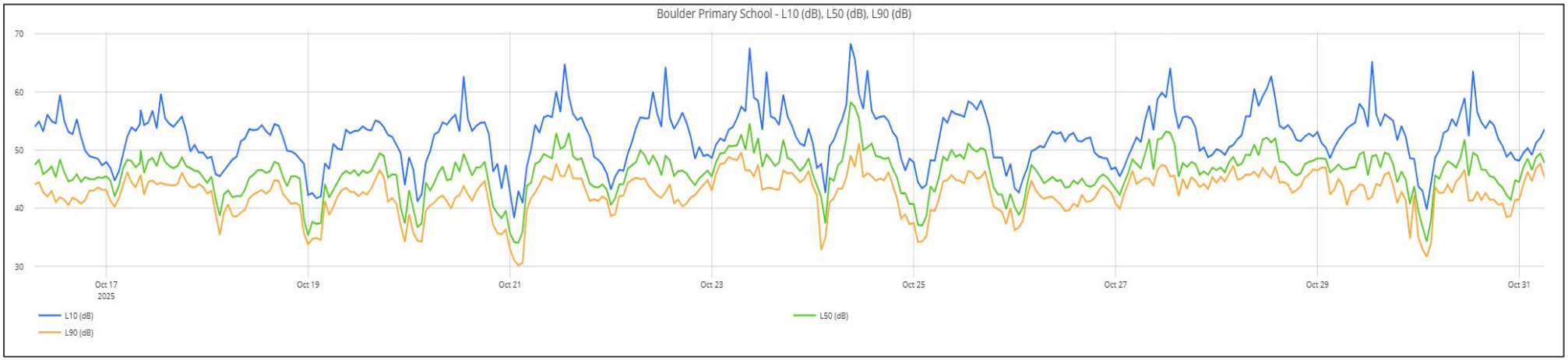

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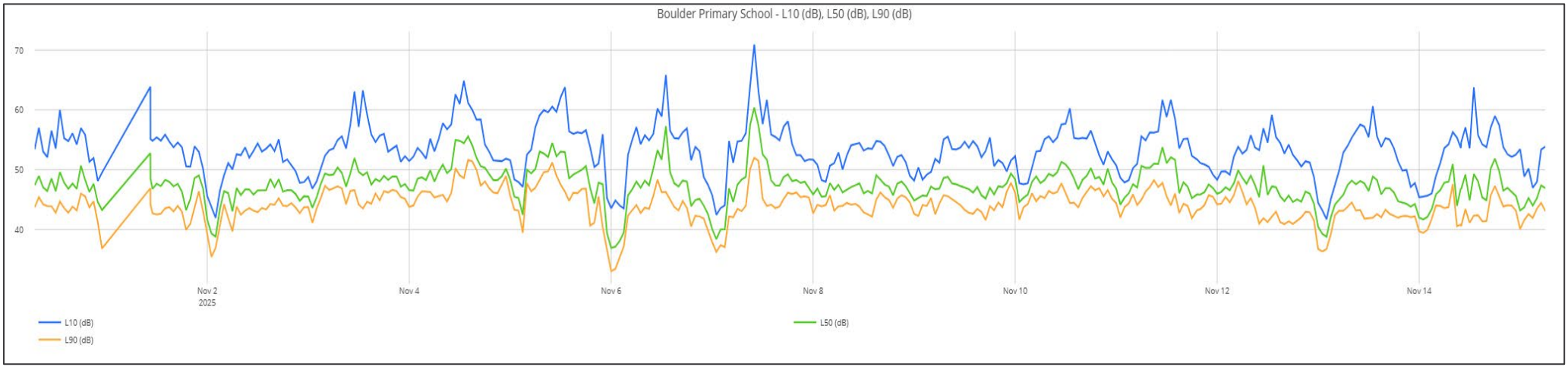

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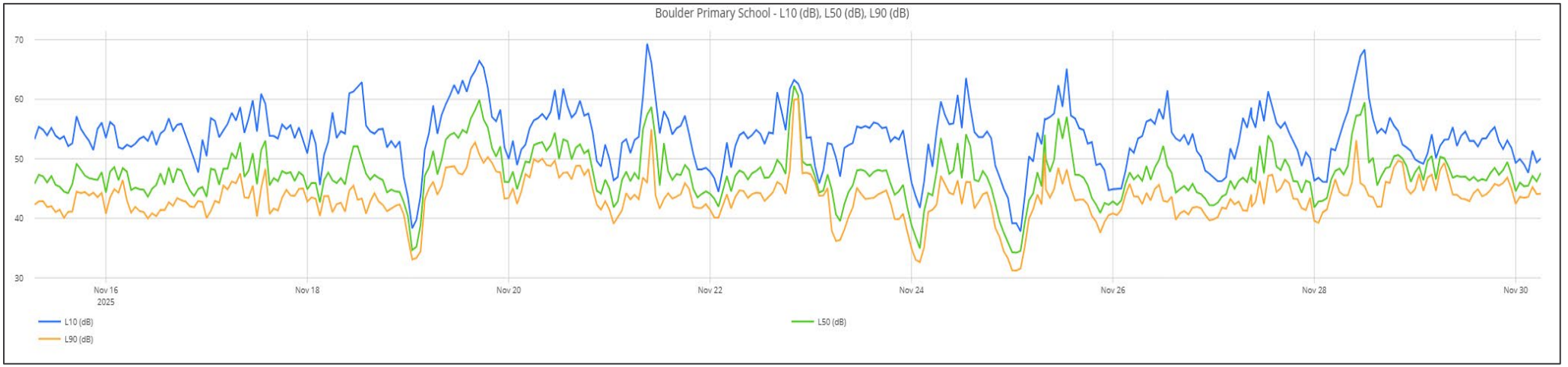

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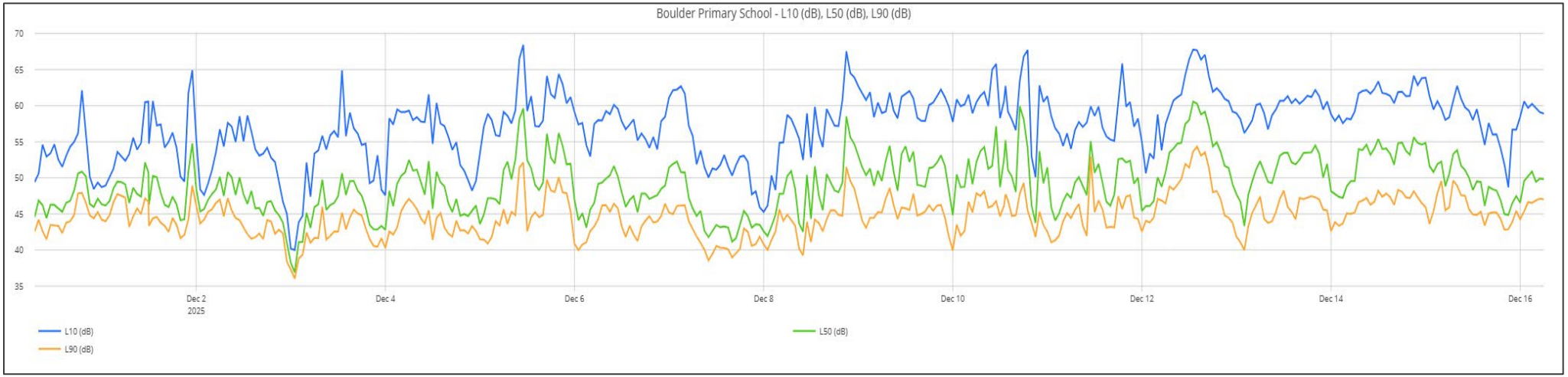

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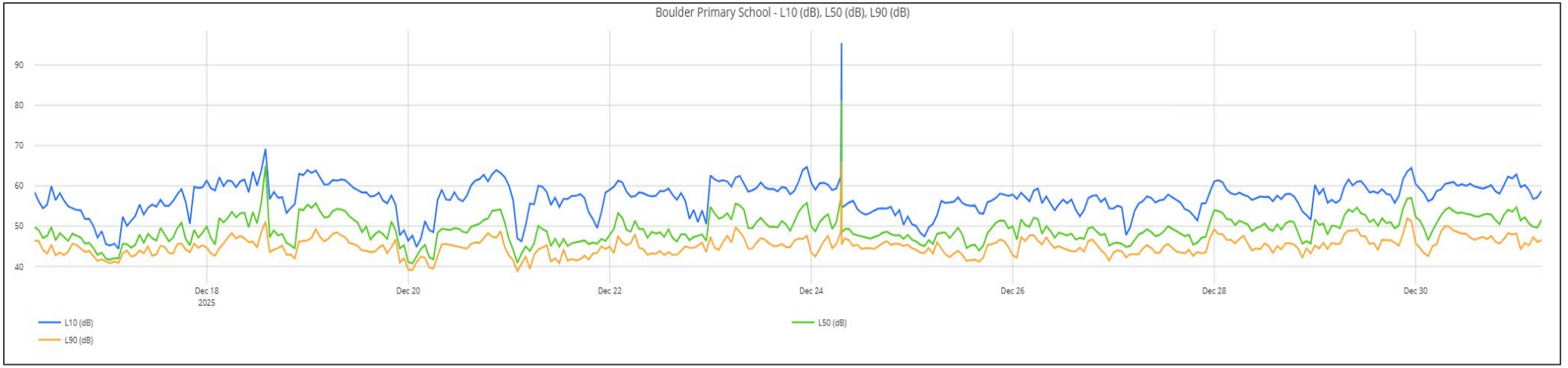

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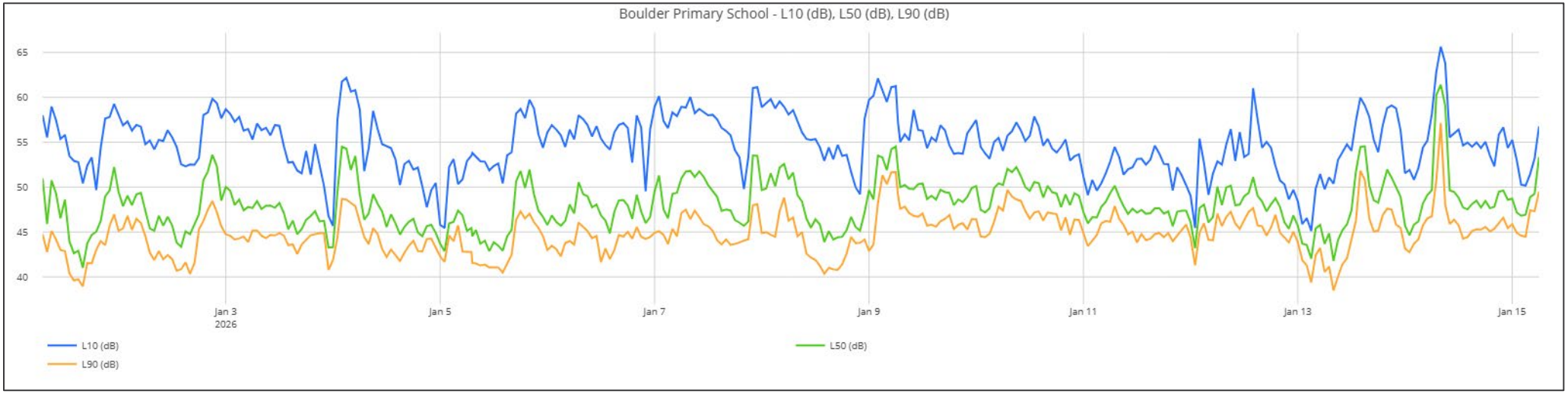

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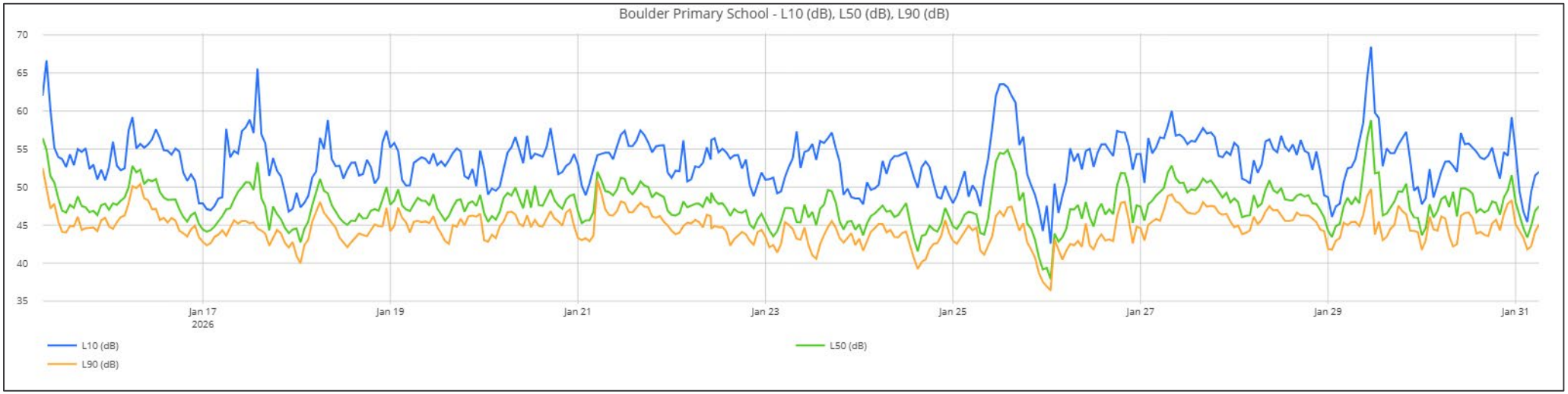

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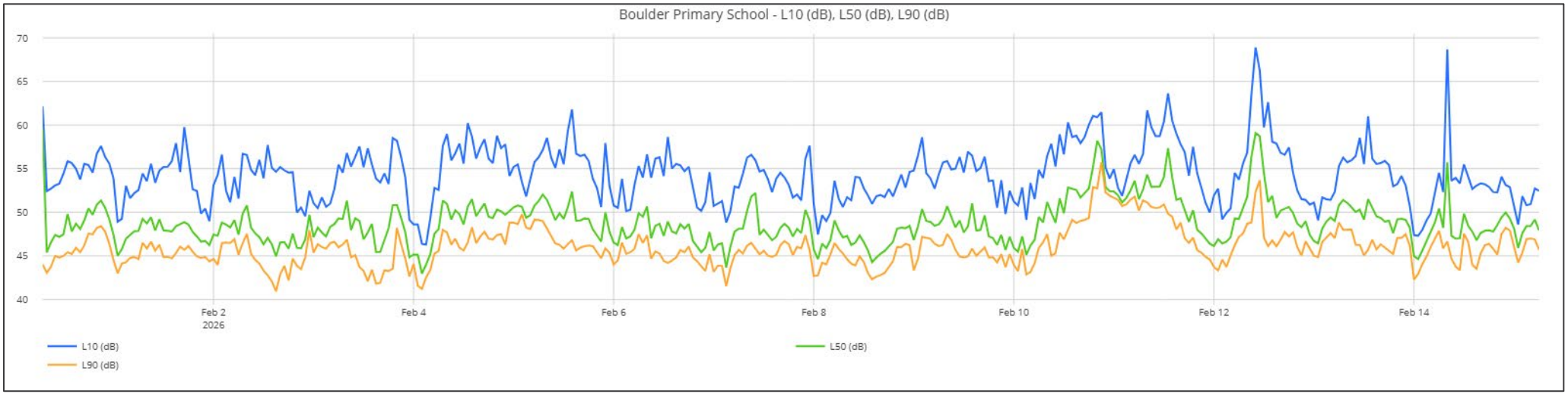

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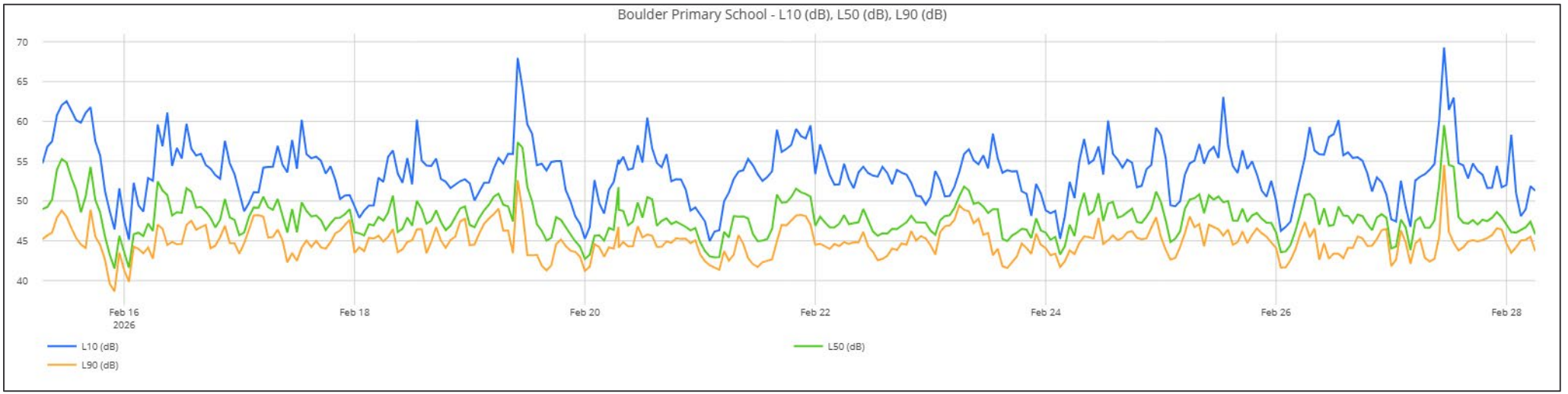

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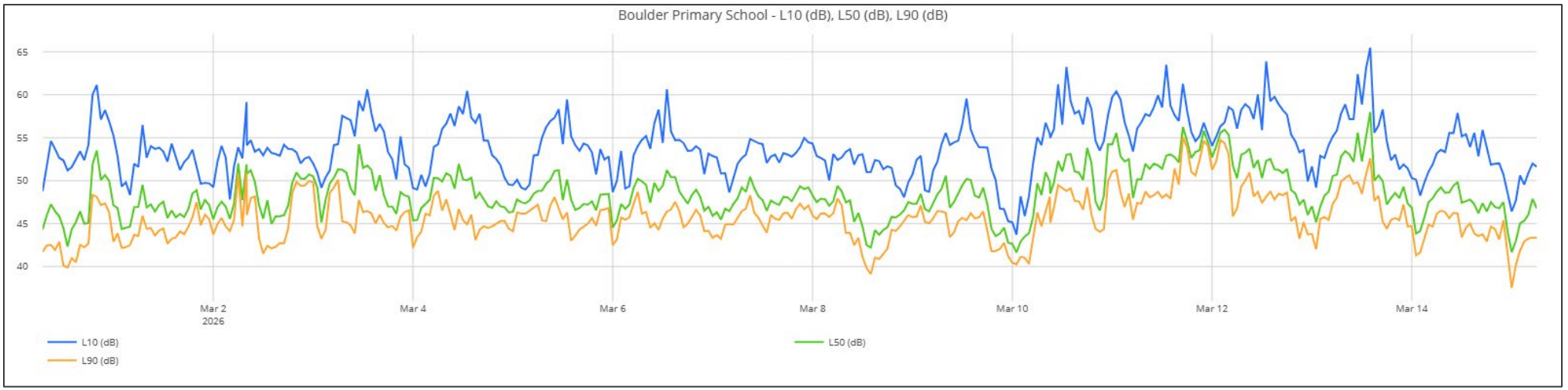

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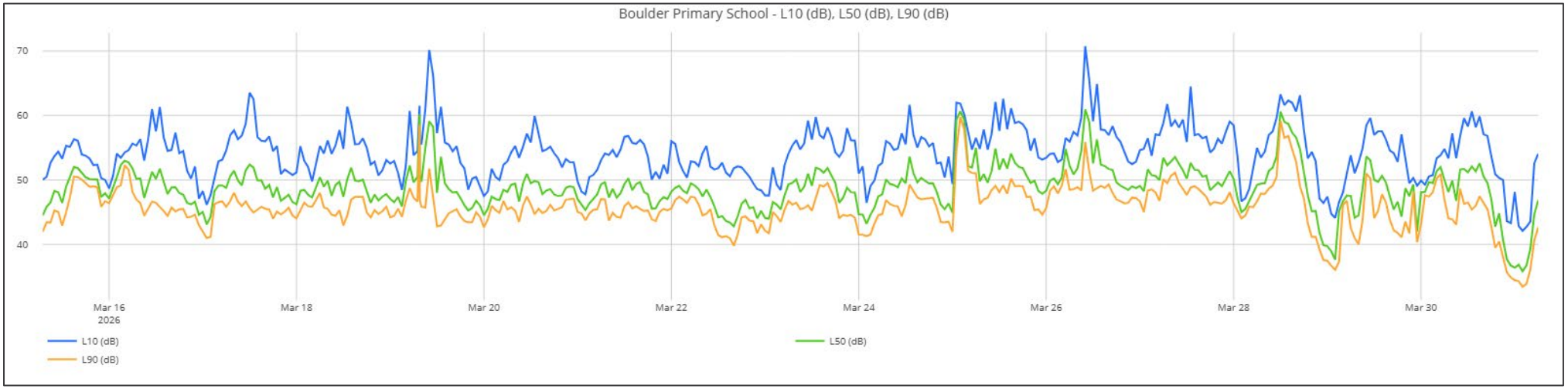

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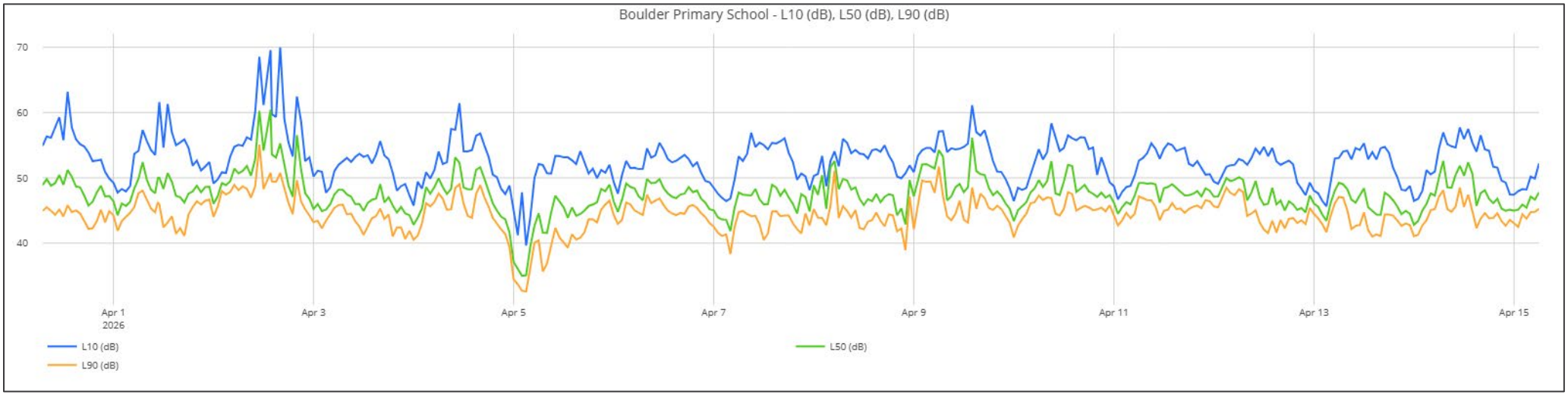

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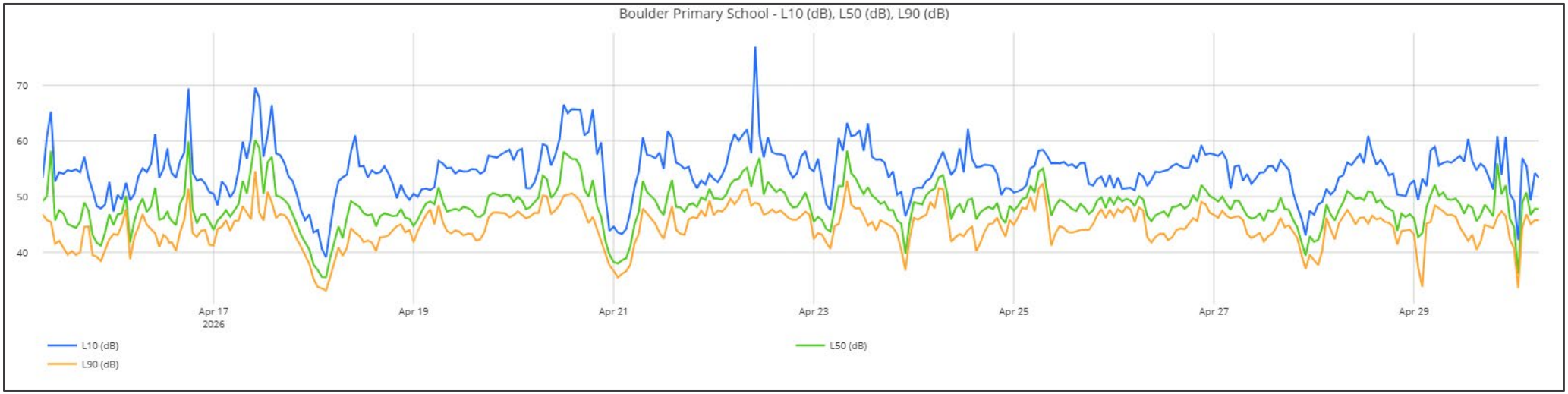

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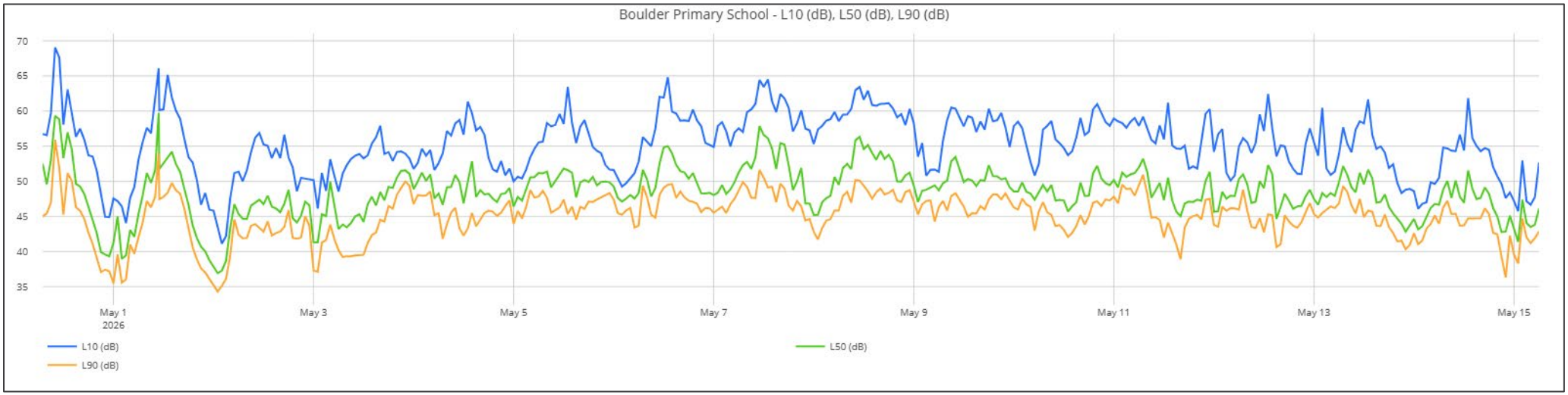

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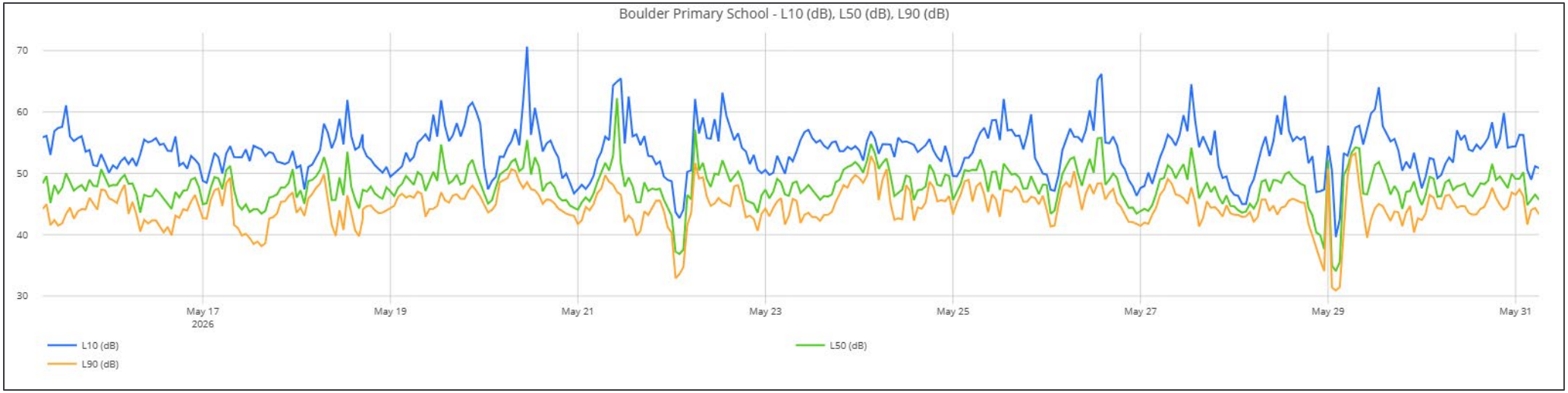

MEP Noise Monitoring

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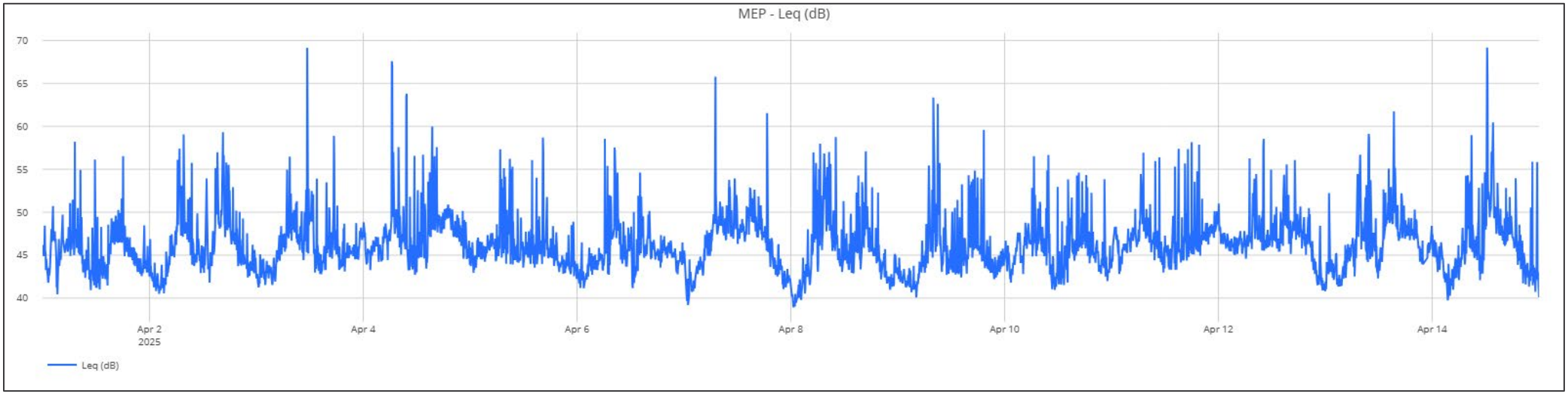

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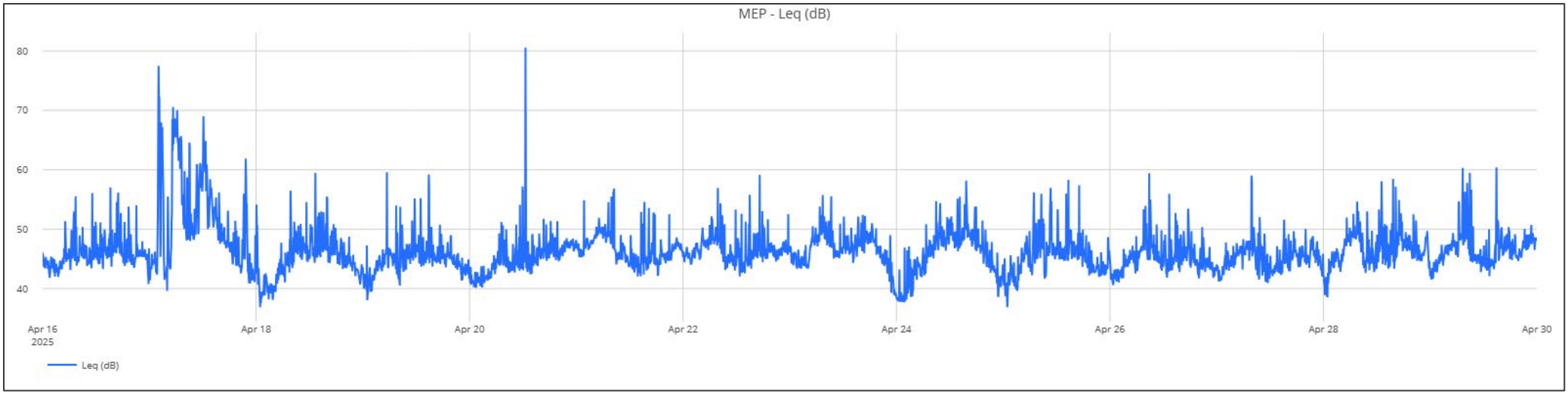

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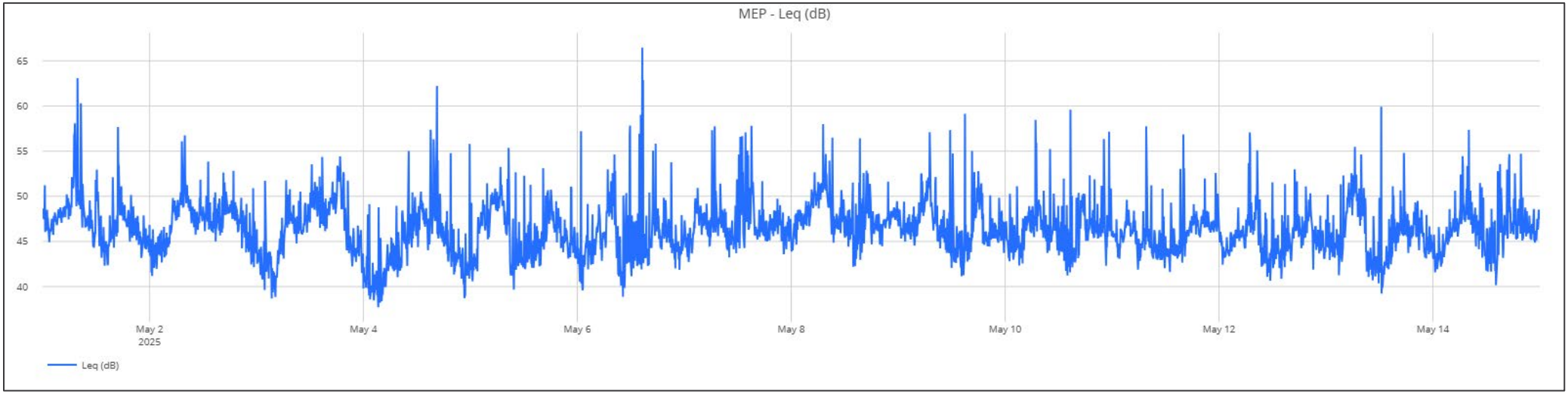

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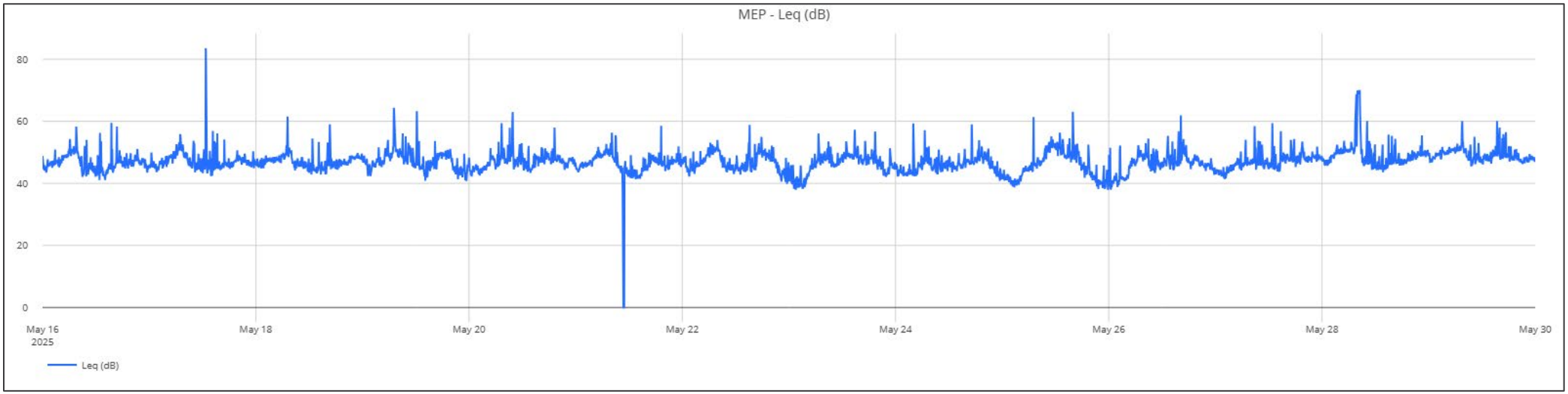

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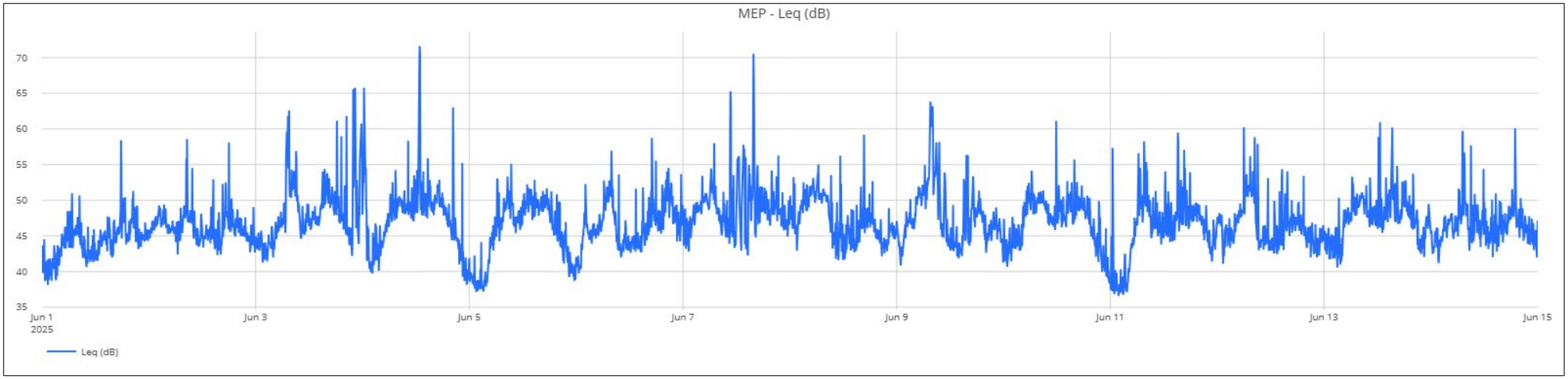

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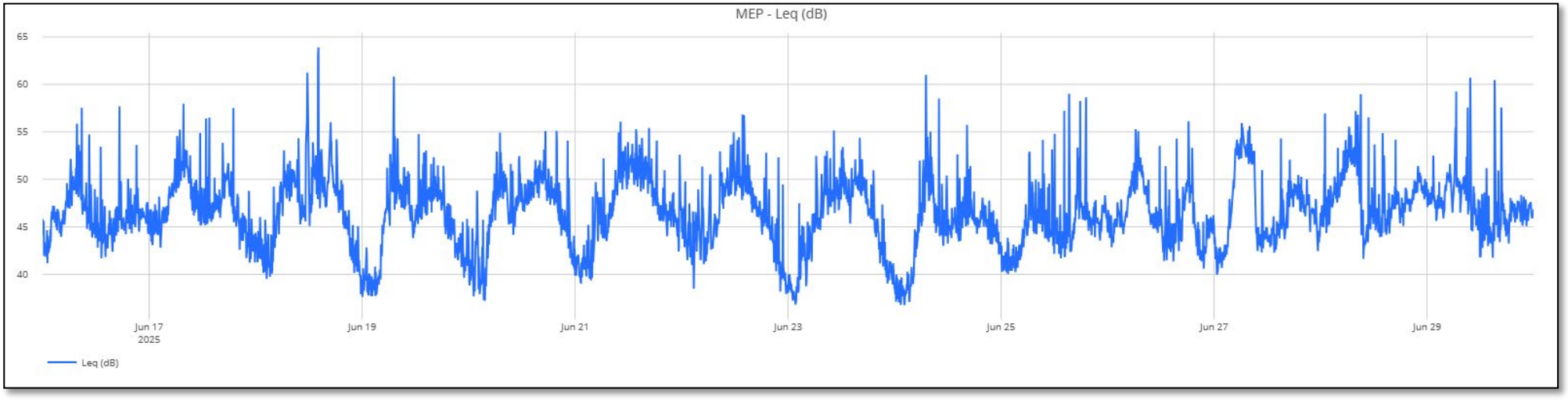

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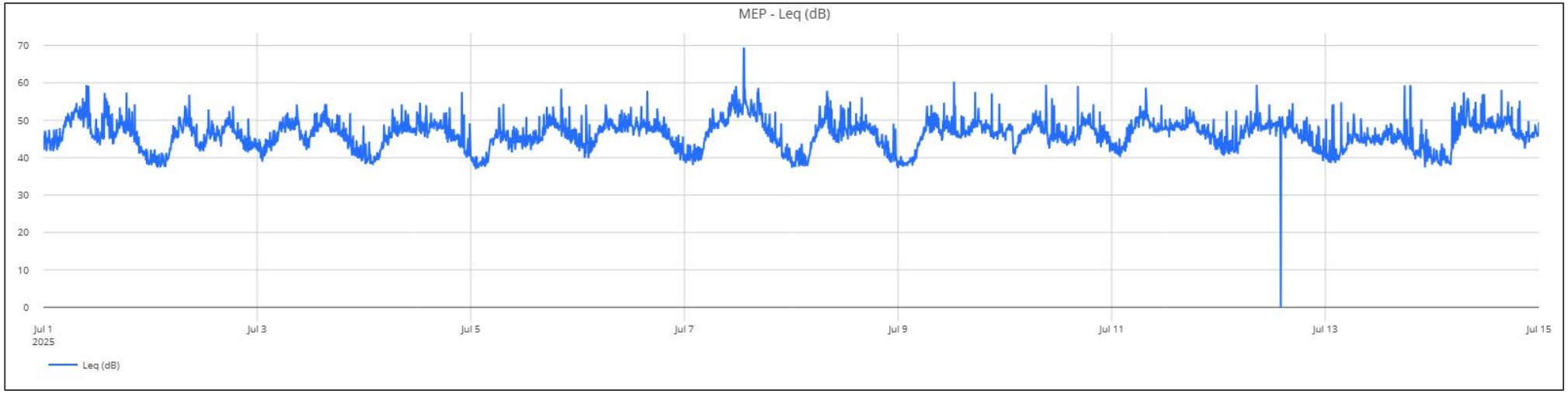

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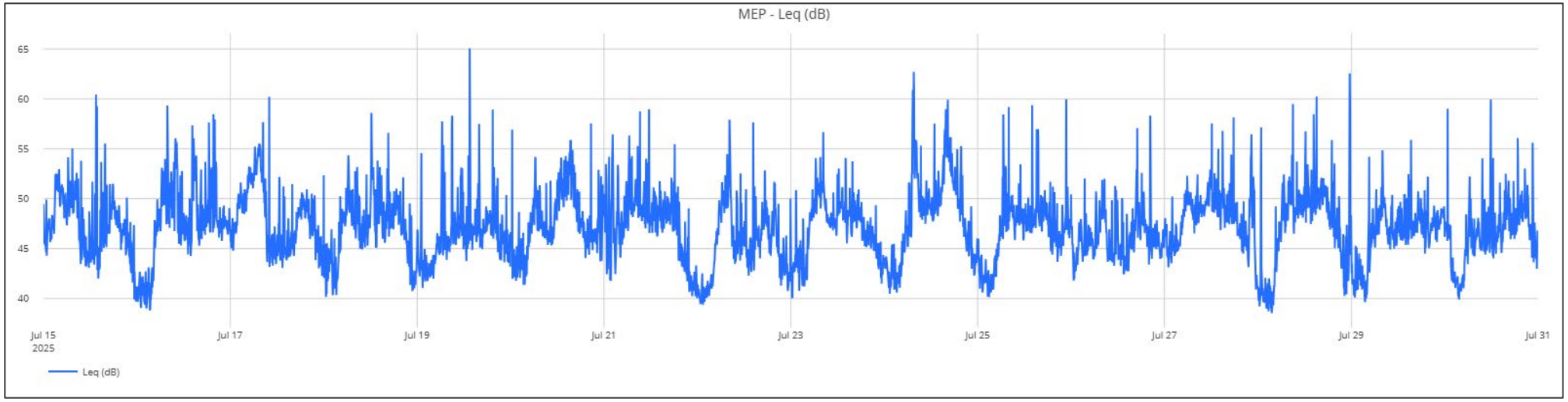

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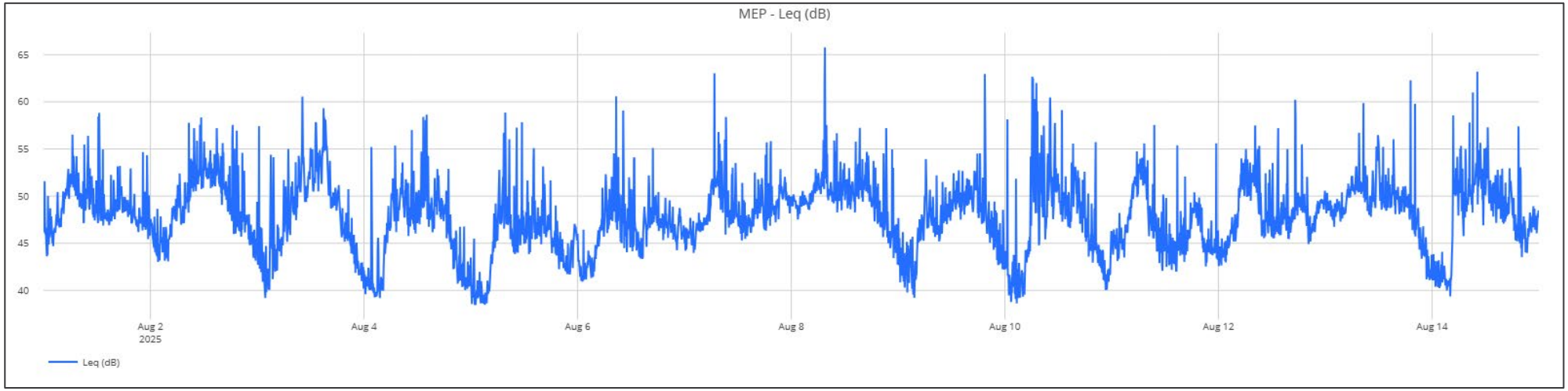

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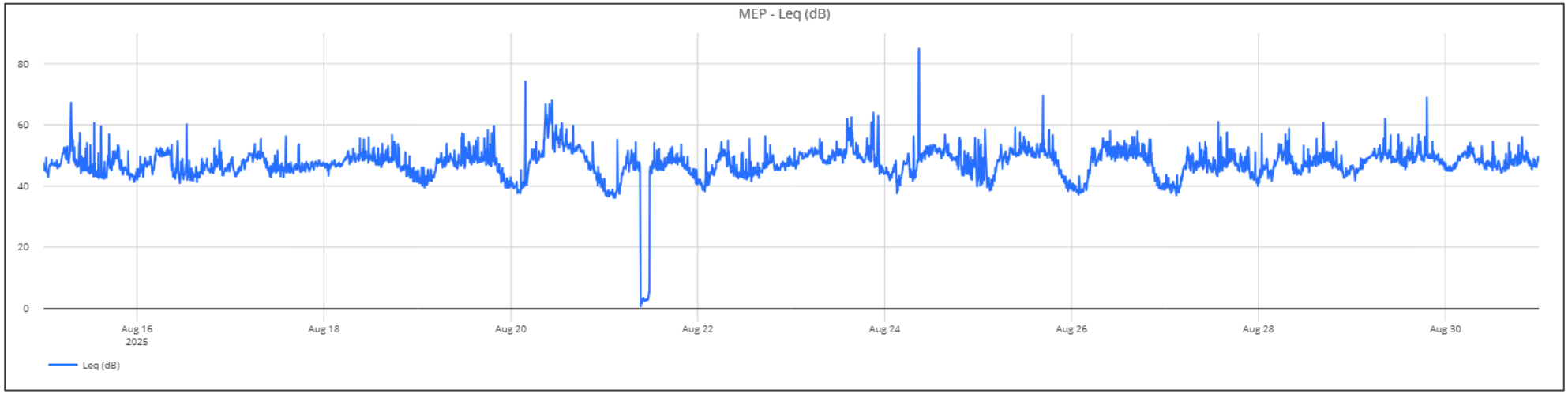

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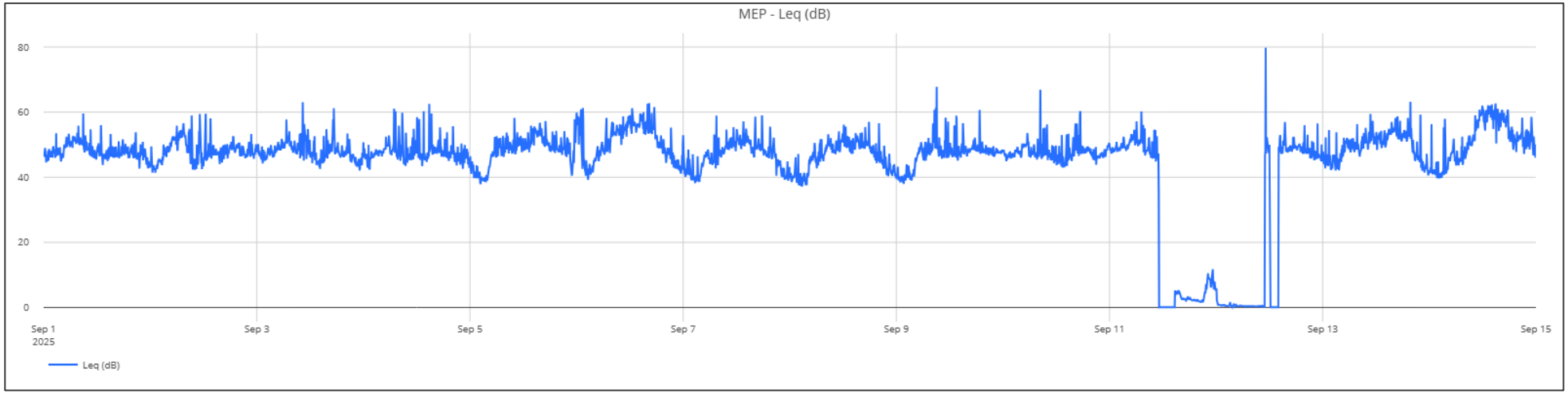

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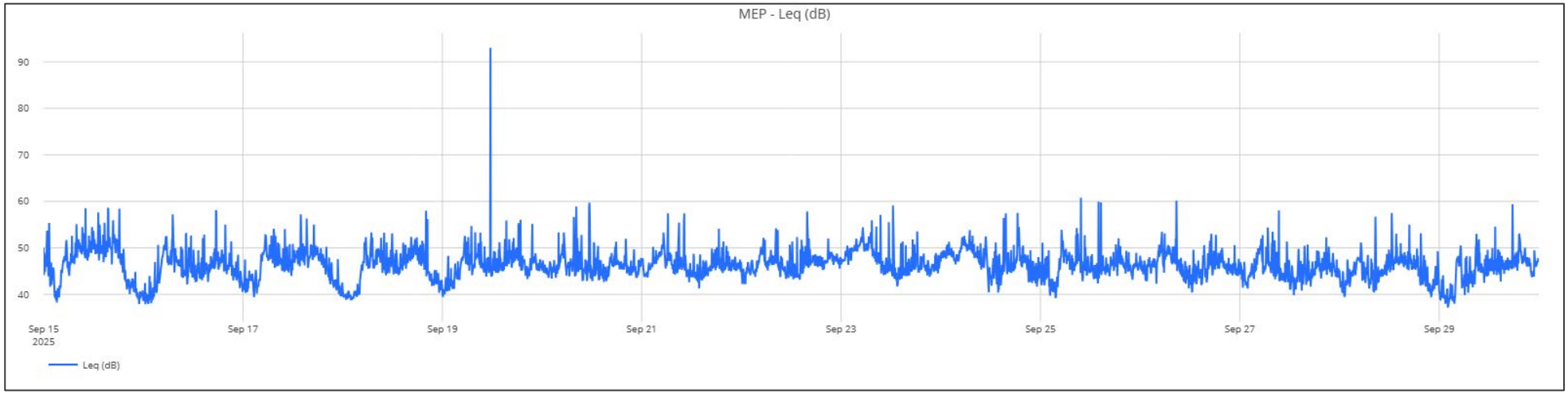

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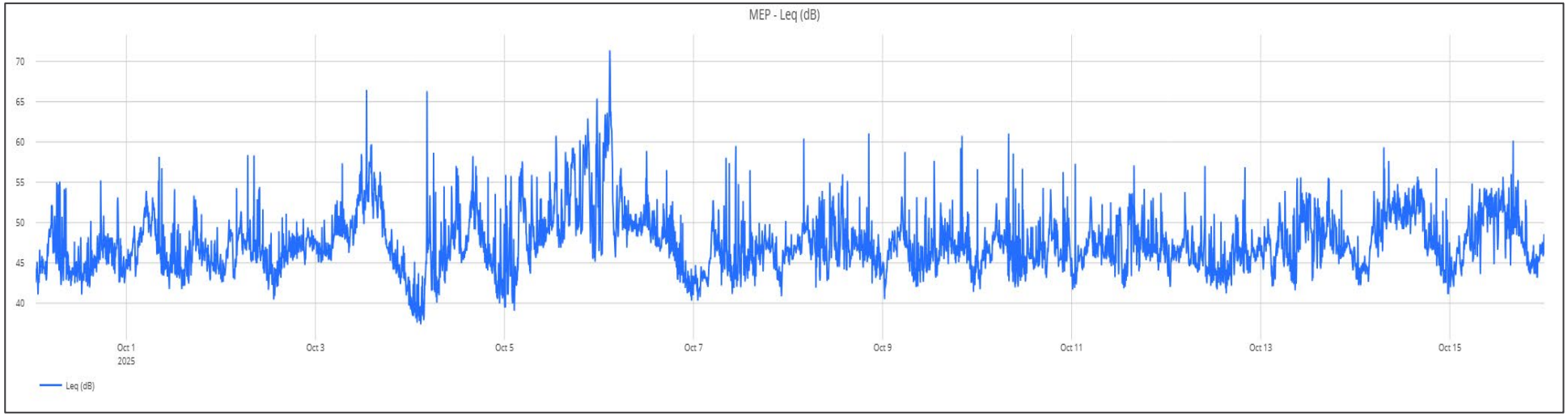

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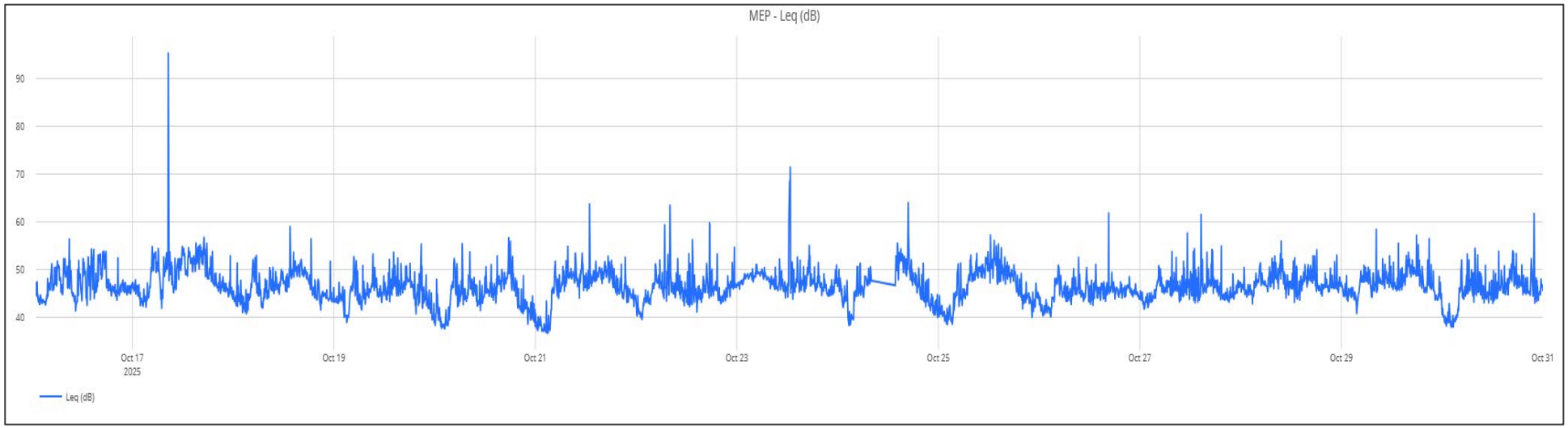

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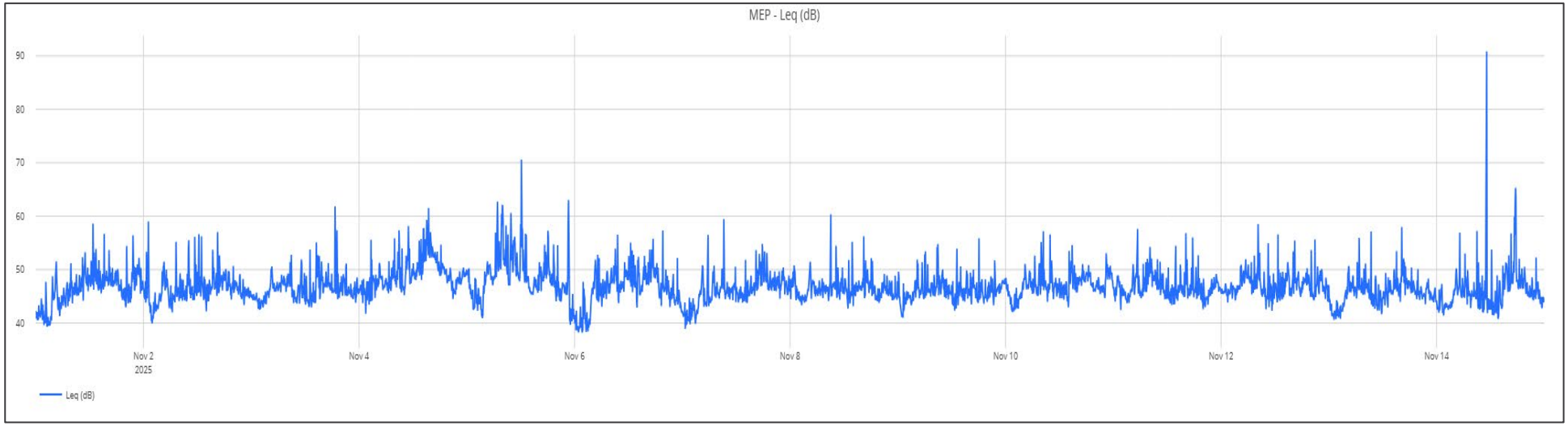

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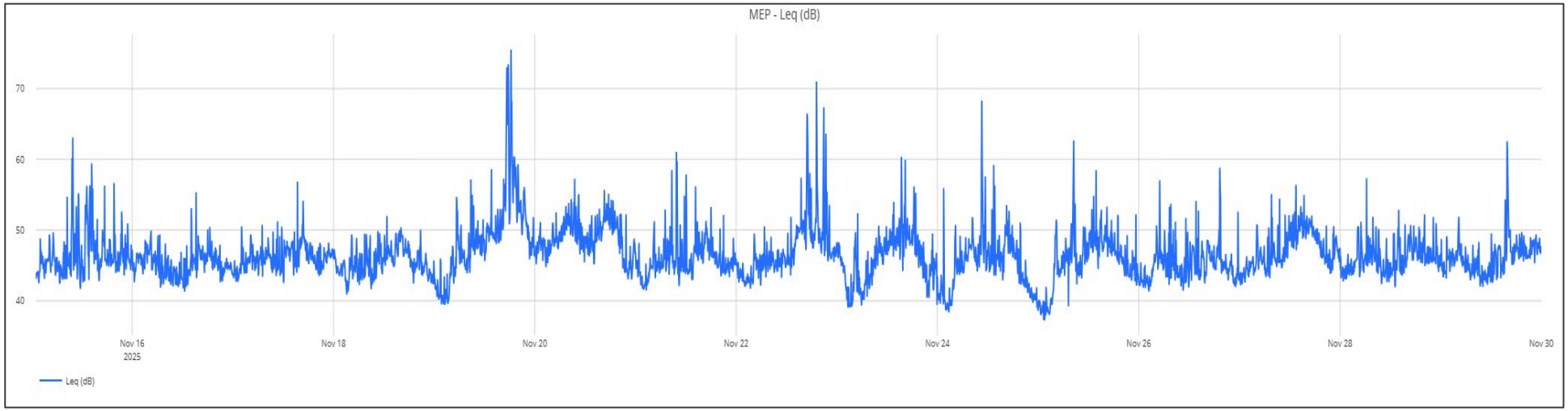

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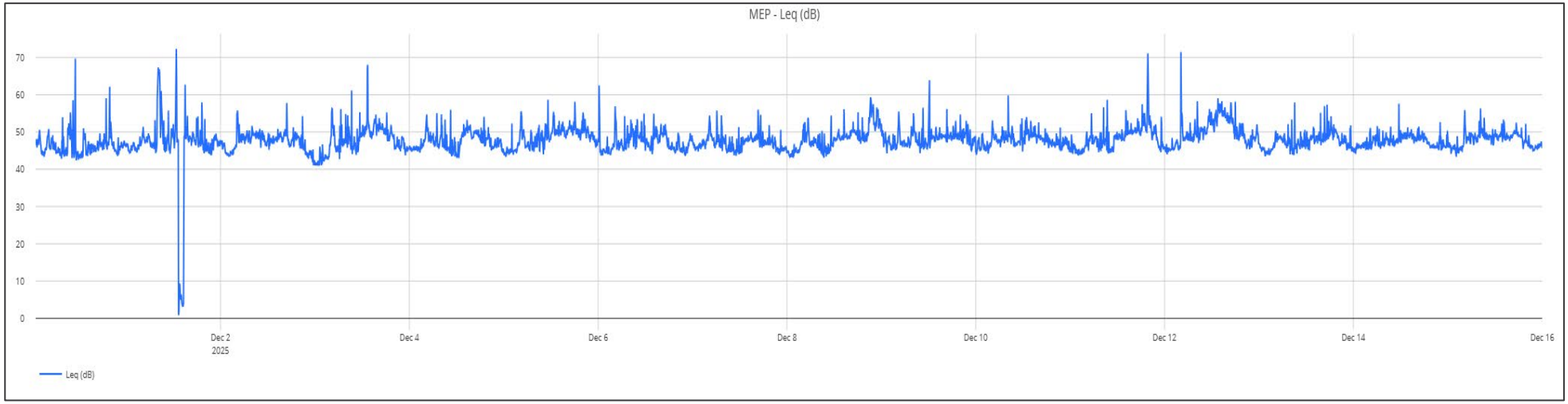
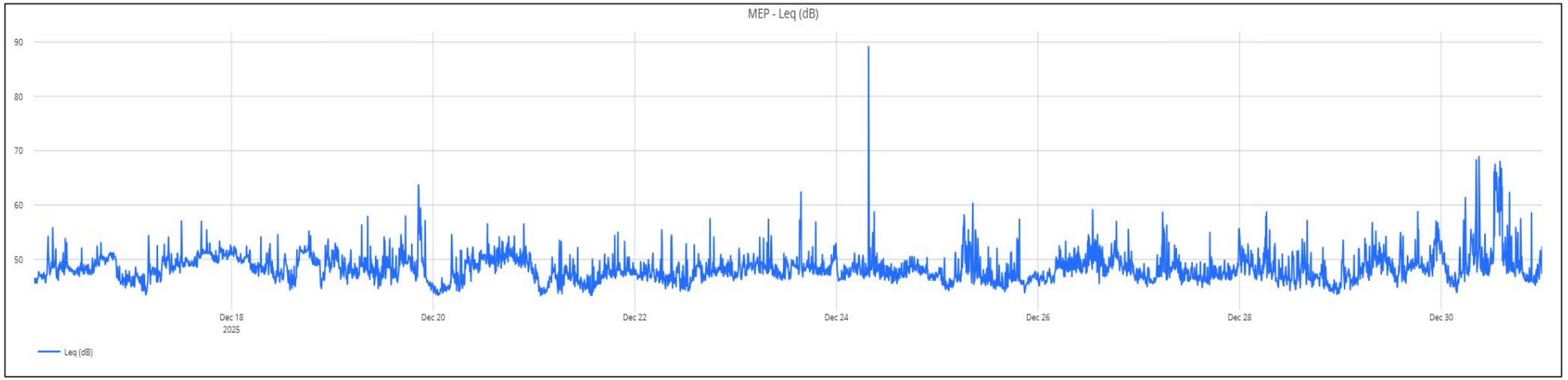
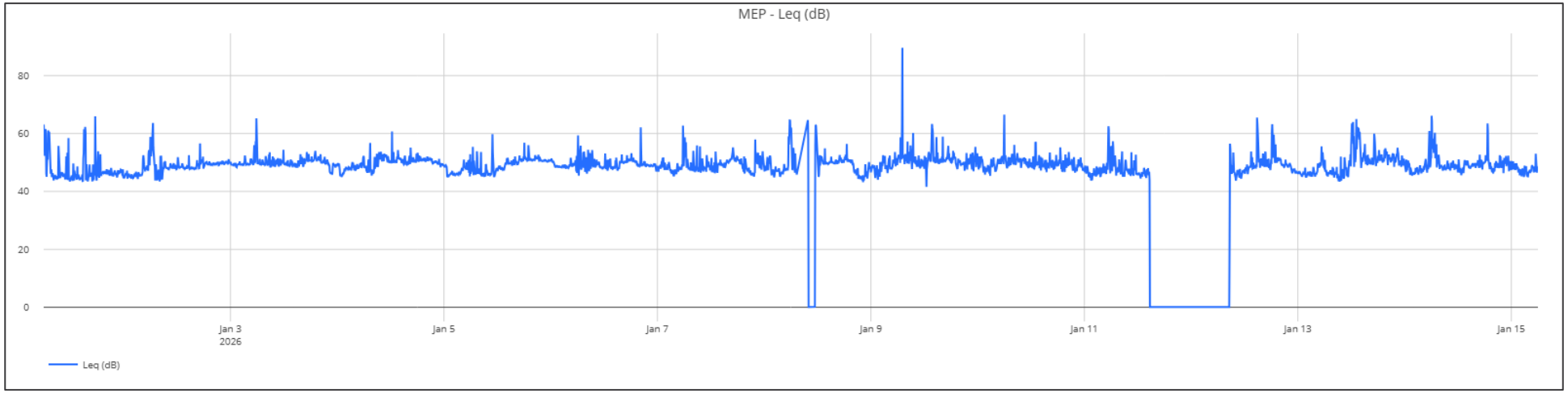


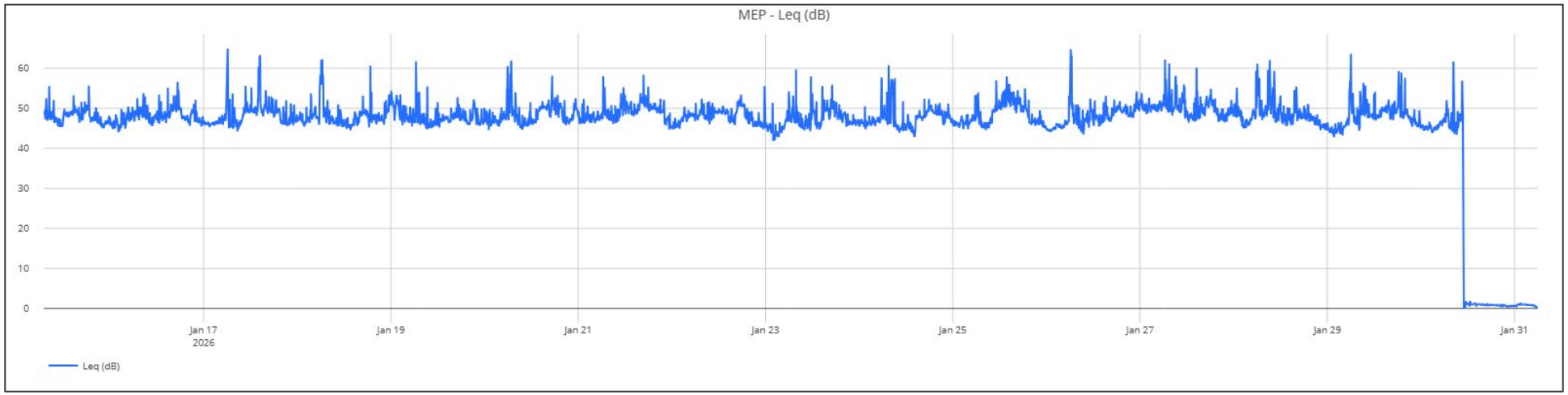
16/12/2025 - 31/12/2025



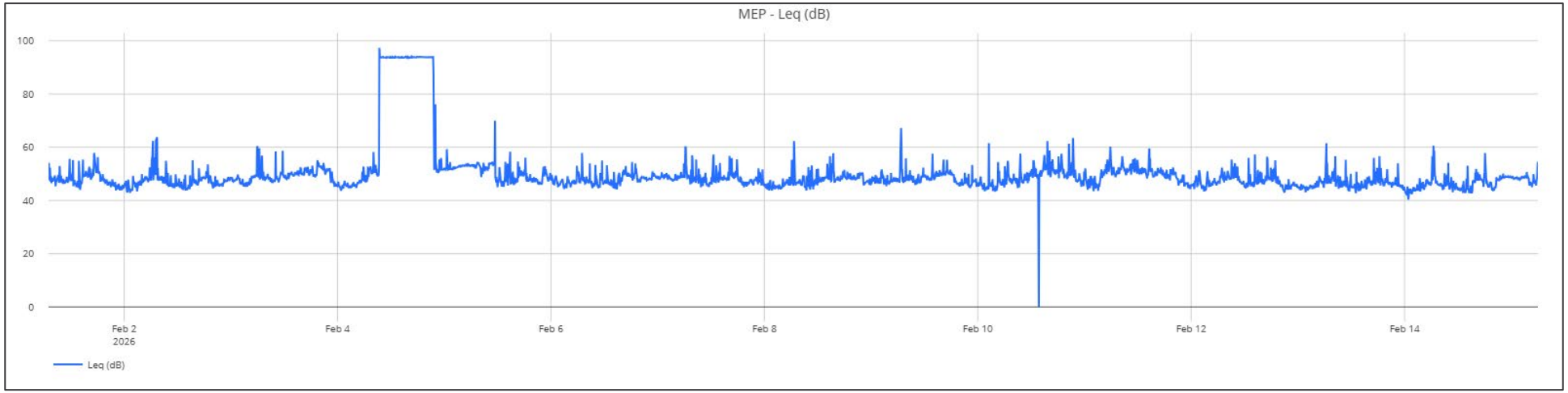
01/01/2026 - 15/01/2026



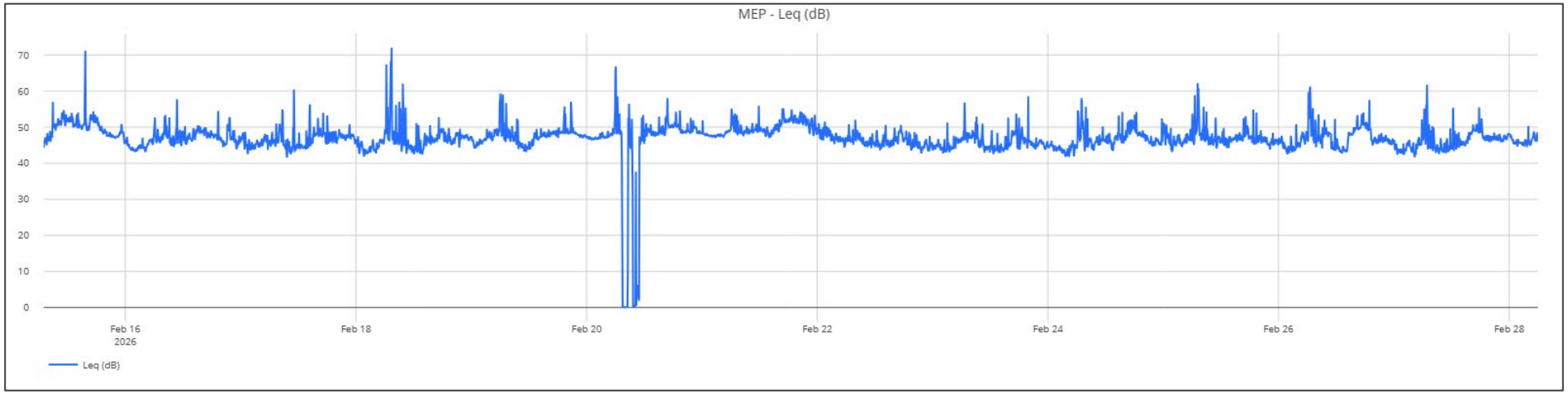
16/01/2026 - 31/01/2026



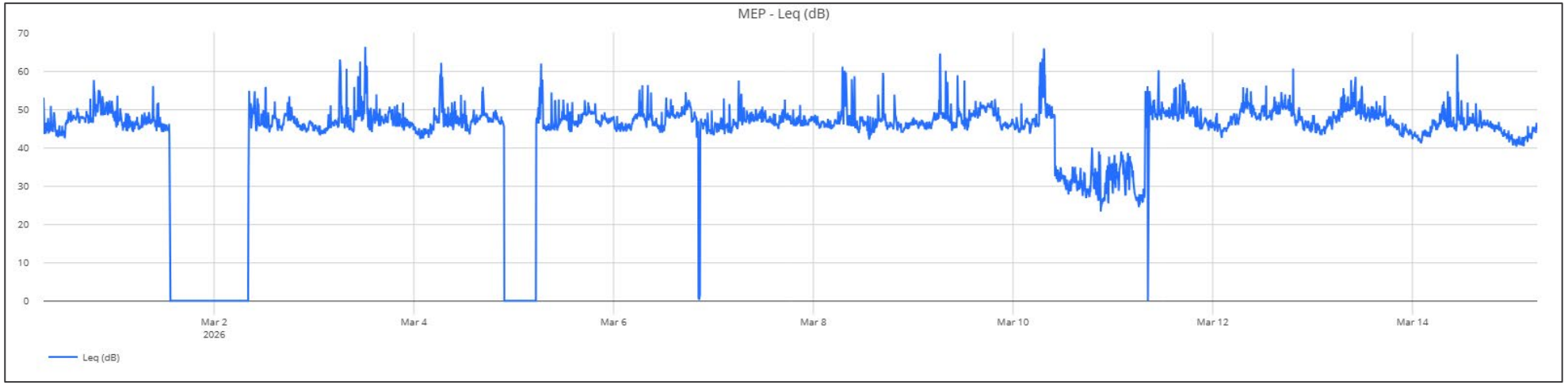
01/02/2026 - 15/02/2026



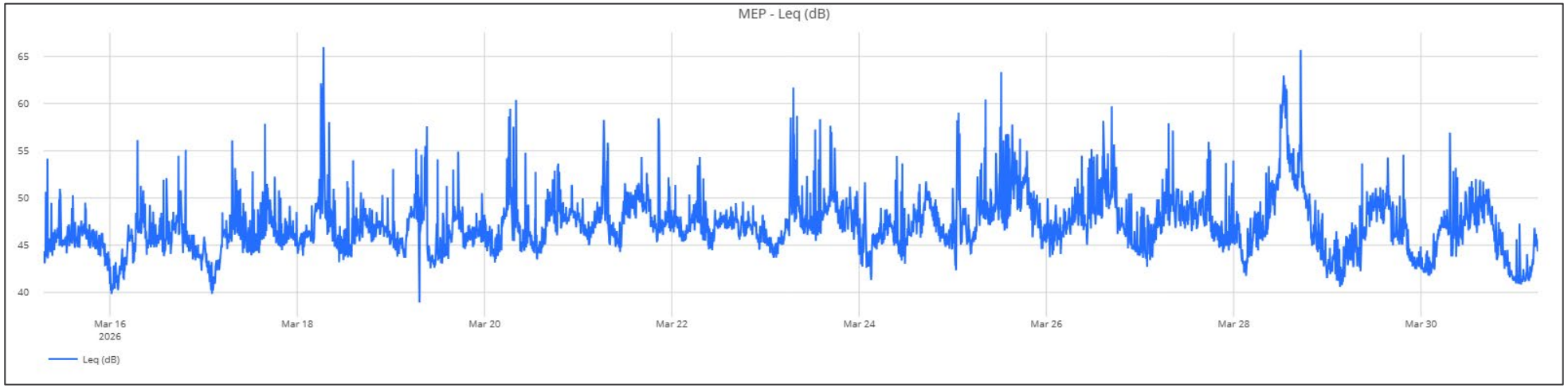
16/02/2026 - 28/02/2026



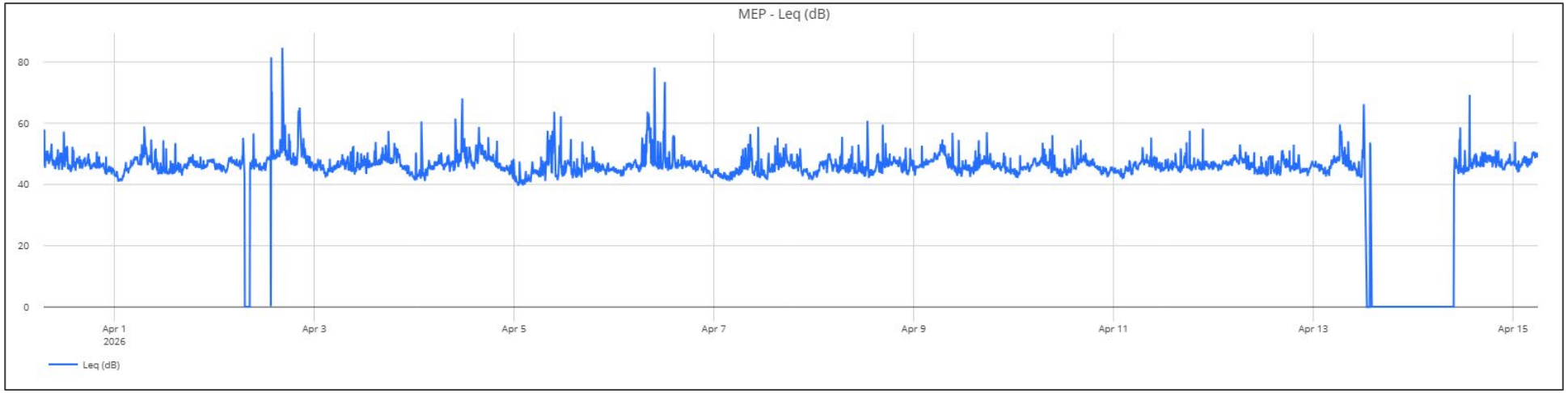
01/03/2026 - 15/03/2026



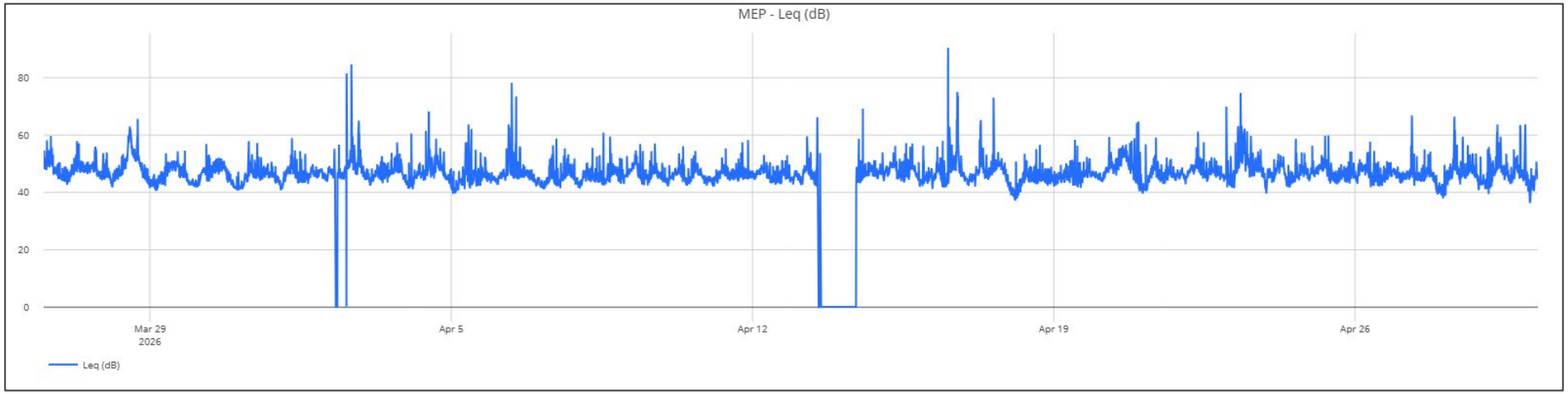
16/03/2026 - 31/03/2026



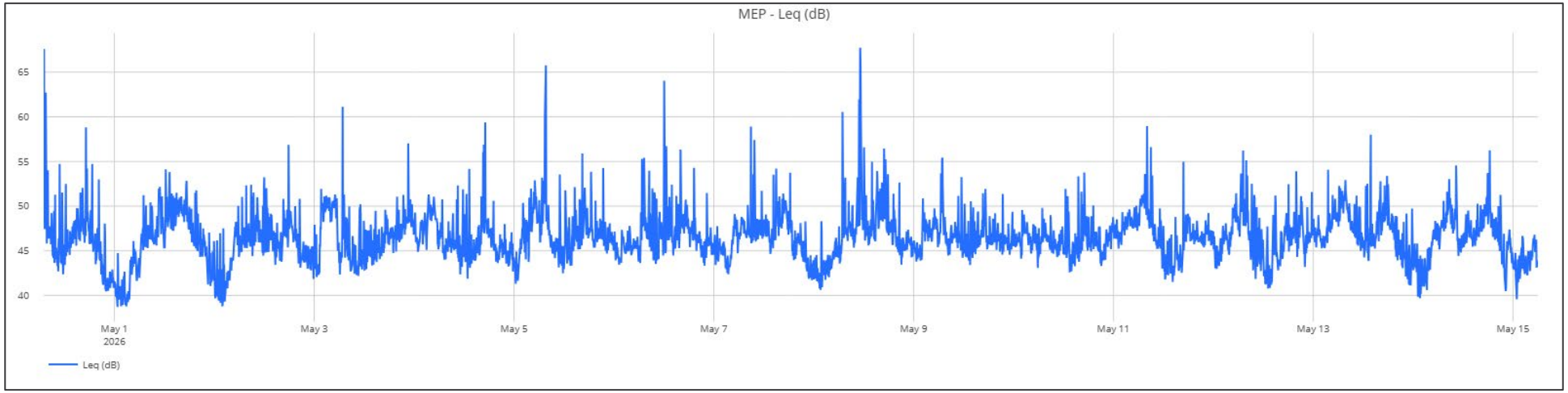
1/04/2026 - 15/04/2026



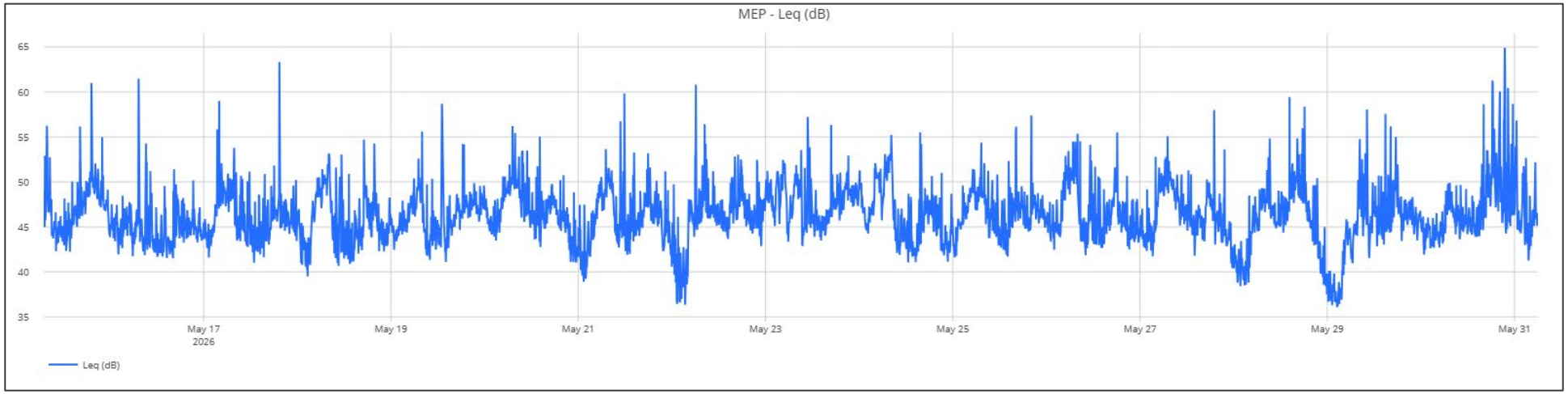
16/04/2026 - 30/04/2026



1/05/2026 - 15/05/2026



16/05/2026 - 31/05/2026



APPENDIX 2: Blast Monitoring Results

Table 15: Site A (Alpha) – Blast Monitoring Results Table

Date	Bench	Blast	Station	Time	Overpressure	PPV
1/04/2025	670	2370	ALPHA	13:30.4	99.6	1.14
2/04/2025	270	2420	ALPHA	12:49.4	107	0.7
9/04/2025	530	2321	ALPHA	17:23.2	97.1	0.56
10/04/2025	270	2422	ALPHA	17:12.4	113.2	0.58
12/04/2025	270	2407	ALPHA	13:21.4	104.4	1.13
14/04/2025	270	2406	ALPHA	17:36.4	98.7	0.55
16/04/2025	280	2400	ALPHA	12:48.3	110.2	2.08
21/04/2025	280	2406	ALPHA	17:45.2	115.8	1.15
23/04/2025	280	2408	ALPHA	12:56.6	107	1.08
25/04/2025	280	2411	ALPHA	17:03.1	110.8	2.11
27/04/2025	280	2412	ALPHA	13:02.3	102.5	1.27
30/04/2025	280	2409	ALPHA	09:08.3	105.4	0.81
1/05/2025	280	2413	ALPHA	17:14.0	106.6	0.92
4/05/2025	290	2431	ALPHA	12:41.3	98.7	0.99
6/05/2025	540	2371	ALPHA	12:55.1	103.7	0.54
7/05/2025	280	2414	ALPHA	17:08.5	105.8	0.75
11/05/2025	290	2432	ALPHA	09:07.1	106.6	1.55
13/05/2025	290	2436	ALPHA	16:54.5	107.7	1.83
15/05/2025	290	2434	ALPHA	12:46.5	97.6	0.78
17/05/2025	580	2363	ALPHA	12:16.0	104.9	0.59
18/05/2025	280	2401	ALPHA	16:59.0	116.8	0.21
19/05/2025	280	2401	ALPHA	13:03.0	110.3	0.75
22/05/2025	280	2401	ALPHA	16:50.3	103.7	0.6
24/05/2025	280	2418	ALPHA	14:55.3	101.2	0.81
25/05/2025	550	23094	ALPHA	17:22.5	98.2	0.54
29/05/2025	590	2383	ALPHA	12:45.4	107.7	0.74
30/05/2025	290	2437	ALPHA	13:43.0	111.1	1.13
1/06/2025	290	2437	ALPHA	12:42.1	104.7	1.66
2/06/2025	290	2430	ALPHA	12:45.2	105.8	0.67
6/06/2025	290	2404	ALPHA	12:58.4	111.5	0.68
8/06/2025	290	2435	ALPHA	13:06.4	107	0.55
9/06/2025	600	2363	ALPHA	16:34.2	95.1	0.87
11/06/2025	290	2436	ALPHA	13:00.4	103.9	1.66
16/06/2025	290	2403	ALPHA	13:40.5	112.6	1.18
20/06/2025	300	2408	ALPHA	12:54.6	101.5	0.83
21/06/2025	300	2410	ALPHA	12:55.2	95.8	1.23
23/06/2025	300	2413	ALPHA	13:04.3	103.7	0.98
24/06/2025	200	39010	ALPHA	17:02.4	113.7	0.14
28/06/2025	290	2404	ALPHA	17:02.5	114.5	0.43
2/07/2025	290	2404	ALPHA	13:03.2	113.4	0.88
8/07/2025	300	2402	ALPHA	12:51.3	104.2	2.1
11/07/2025	300	2412	ALPHA	16:00.2	111.5	0.97
20/07/2025	300	2403	ALPHA	13:16.3	107.5	1.2
27/07/2025	300	2404	ALPHA	12:44.2	101.8	0.8
31/07/2025	300	2405	ALPHA	12:43.2	109.3	0.54
1/08/2025	310	2408	ALPHA	13:00.4	105.3	0.88
6/08/2025	310	2412	ALPHA	12:48.2	98.9	0.8
7/08/2025	570	2374	ALPHA	16:53.2	98.9	1.17
8/08/2025	310	2419	ALPHA	17:23.2	110.3	1.74
15/08/2025	590	23067	ALPHA	13:04.6	92.2	0.95
17/08/2025	310	2415	ALPHA	17:26.2	113.1	0.99

Date	Bench	Blast	Station	Time	Overpressure	PPV
22/08/2025	310	2419	ALPHA	17:22.1	107	1.09
22/08/2025	580	2365	ALPHA	13:10.5	102.2	0.77
24/08/2025	310	2413	ALPHA	12:53.5	102.7	0.66
24/08/2025	580	2365	ALPHA	17:22.2	101.3	0.66
27/08/2025	580	2367	ALPHA	17:19.1	94.7	1.01
28/08/2025	310	2417	ALPHA	14:58.5	110.6	0.67
30/08/2025	310	2420	ALPHA	12:47.6	108.5	1.68
2/09/2025	590	2319	ALPHA	13:02.6	93.6	1.6
4/09/2025	310	2418	ALPHA	12:53.1	108.7	0.8
6/09/2025	590	2321	ALPHA	13:19.4	96.7	0.86
7/09/2025	310	2416	ALPHA	12:49.2	103.5	0.87
10/09/2025	590	23086	ALPHA	12:53.5	105.6	0.92
13/09/2025	310	2414	ALPHA	10:01.1	99.6	0.51
14/09/2025	310	2405	ALPHA	17:34.1	101.3	0.7
16/09/2025	310	2406	ALPHA	17:26.3	103.5	1.64
17/09/2025	590	2377	ALPHA	14:41.5	101.3	2.89
19/09/2025	310	24007	ALPHA	12:44.0	101.3	0.65
21/09/2025	310	2407	ALPHA	17:26.2	103.1	1.32
21/09/2025	590	2377	ALPHA	12:54.2	98.9	0.94
22/09/2025	310	2404	ALPHA	17:11.6	109.5	0.55
27/09/2025	310	2430	ALPHA	13:03.2	107	1.21
30/09/2025	320	2417	ALPHA	17:21.3	104.6	1.73
3/10/2025	320	2414	ALPHA	13:55.1	107.3	1.38
11/10/2025	600	23071	ALPHA	09:27.4	93.6	0.64
12/10/2025	320	2416	ALPHA	12:49.0	100.7	0.89
13/10/2025	600	2370	ALPHA	12:49.2	100.2	1.41
14/10/2025	320	2402	ALPHA	17:23.4	111.1	1
15/10/2025	600	2371	ALPHA	17:23.2	97.5	1.53
17/10/2025	320	2415	ALPHA	12:59.5	103.1	1.5
19/10/2025	320	2419	ALPHA	17:29.0	107.3	1.08
19/10/2025	600	2382	ALPHA	17:27.5	101.8	0.58
20/10/2025	600	2375	ALPHA	17:27.5	105.3	0.69
21/10/2025	320	24010	ALPHA	17:51.2	112.4	0.16
21/10/2025	320	2420	ALPHA	17:42.6	105.3	0.75
27/10/2025	320	2410	ALPHA	12:44.3	103.5	0.69
29/10/2025	600	23073	ALPHA	17:19.0	88.7	0.49
31/10/2025	320	2409	ALPHA	12:40.1	101.8	1.27
31/10/2025	600	2374	ALPHA	17:16.4	94.7	0.62
1/11/2025	320	2400	ALPHA	17:19.3	98.2	0.52
2/11/2025	600	2373	ALPHA	12:51.5	106.2	1.37
3/11/2025	320	2421	ALPHA	12:47.3	105.6	0.63
4/11/2025	320	2408	ALPHA	12:28.5	105.3	1.24
6/11/2025	610	2370	ALPHA	17:21.1	98.9	1.18
8/11/2025	320	2407	ALPHA	12:58.3	102.2	0.64
10/11/2025	320	2423	ALPHA	13:00.3	105.6	0.7
11/11/2025	610	2388	ALPHA	17:15.1	98.2	0.55
12/11/2025	610	2371	ALPHA	17:16.5	99.6	1.21
13/11/2025	610	23086	ALPHA	17:24.2	102.7	0.54
15/11/2025	330	2415	ALPHA	17:12.6	107.3	1.26
15/11/2025	600	2383	ALPHA	12:58.4	95.7	1.07
16/11/2025	330	2413	ALPHA	12:48.0	101.8	1.57
17/11/2025	320	2425	ALPHA	12:47.4	99.6	0.56

Date	Bench	Blast	Station	Time	Overpressure	PPV
17/11/2025	610	2383	ALPHA	17:24.3	101.8	0.56
18/11/2025	330	2416	ALPHA	17:28.0	106.5	0.88
18/11/2025	600	2372	ALPHA	12:49.1	94.7	1.14
20/11/2025	330	2414	ALPHA	13:26.5	104.6	0.95
22/11/2025	610	2384	ALPHA	13:18.3	105.9	0.83
23/11/2025	310	2411	ALPHA	17:36.6	106.8	0.82
26/11/2025	610	2375	ALPHA	17:29.1	98.2	1.2
27/11/2025	330	2400	ALPHA	12:41.5	93.6	0.58
29/11/2025	610	2384	ALPHA	17:28.5	97.5	0.87
30/11/2025	330	2418	ALPHA	12:44.0	107.5	0.63
3/12/2025	620	2385	ALPHA	13:27.4	94.7	0.98
4/12/2025	330	2402	ALPHA	10:10.1	97.5	0.53
5/12/2025	610	2376	ALPHA	17:20.2	100.7	0.57
6/12/2025	330	2406	ALPHA	12:43.2	100.7	0.68
7/12/2025	610	2377	ALPHA	17:25.3	99.6	0.55
8/12/2025	620	2395	ALPHA	17:32.3	103.5	0.58
9/12/2025	330	2405	ALPHA	13:22.2	111.5	1.35
10/12/2025	200	39005	ALPHA	17:31.0	112.6	0.14
10/12/2025	330	2417	ALPHA	17:28.5	106.8	0.62
10/12/2025	610	2392	ALPHA	12:46.2	98.9	0.66
11/12/2025	330	2404	ALPHA	17:15.4	100.2	1.11
11/12/2025	620	2396	ALPHA	12:44.3	98.9	0.56
14/12/2025	330	2403	ALPHA	12:44.5	98.2	0.54
15/12/2025	610	2373	ALPHA	13:10.0	95.7	1.26
16/12/2025	320	2421	ALPHA	15:50.4	105.6	0.54
18/12/2025	330	2407	ALPHA	17:23.3	106.2	0.72
19/12/2025	620	2350	ALPHA	17:22.3	105	0.7
20/12/2025	330	2419	ALPHA	12:51.3	99.6	0.7
22/12/2025	210	3916	ALPHA	13:04.0	113.1	0.15
25/12/2025	620	2394	ALPHA	09:02.1	101.8	0.8
29/12/2025	340	2413	ALPHA	13:05.4	105.6	1.33
31/12/2025	340	2412	ALPHA	12:57.3	112.1	1.52
3/01/2026	340	2411	ALPHA	07:55.2	108.3	0.59
7/01/2026	310	2402	ALPHA	15:34.5	118	0.15
8/01/2026	340	2402	ALPHA	12:49.1	98.2	0.66
9/01/2026	320	2403	ALPHA	13:00.1	106.8	0.6
10/01/2026	340	2401	ALPHA	12:43.3	102.7	0.78
11/01/2026	340	2403	ALPHA	12:42.1	100.2	1.1
15/01/2026	340	2414	ALPHA	10:10.1	105.3	1.05
18/01/2026	340	2472	ALPHA	17:39.3	116.3	0.22
21/01/2026	340	2415	ALPHA	12:50.1	105	0.75
22/01/2026	320	2420	ALPHA	13:00.5	103.1	0.52
25/01/2026	630	2343	ALPHA	13:02.1	96.7	0.82
26/01/2026	330	2421	ALPHA	17:36.5	102.7	0.74
27/01/2026	630	2342	ALPHA	12:50.4	101.3	0.63
28/01/2026	340	2421	ALPHA	17:25.3	105.6	0.78
30/01/2026	630	23030	ALPHA	13:07.4	103.1	0.5
1/02/2026	340	2405	ALPHA	10:13.1	100.7	0.71

Date	Bench	Blast	Station	Time	Overpressure	PPV
7/02/2026	160	39070	ALPHA	12:46.3	112.9	0.19
15/02/2026	330	2422	ALPHA	17:22.4	104.6	0.73
15/02/2026	610	2374	ALPHA	08:00.1	97.5	1.14
17/02/2026	160	3971	ALPHA	13:37.3	112.9	0.14
18/02/2026	630	2330	ALPHA	17:35.6	95.7	0.76
22/02/2026	230	3934	ALPHA	12:51.2	112.4	0.14
23/02/2026	350	2401	ALPHA	13:03.1	105.9	0.9
26/02/2026	230	3938	ALPHA	17:35.3	90.6	0.87
26/02/2026	610	23050	ALPHA	12:53.1	97.5	0.9
27/02/2026	630	2331	ALPHA	13:11.4	100.2	0.57
1/03/2026	630	2350	ALPHA	17:34.2	96.7	2.84
4/03/2026	350	2412	ALPHA	17:17.0	105.3	1.7
6/03/2026	620	2386	ALPHA	12:59.3	96.7	1.06
8/03/2026	620	2374	ALPHA	17:25.0	95.7	1.15
9/03/2026	350	2402	ALPHA	15:22.3	100.2	0.77
11/03/2026	620	2375	ALPHA	16:02.5	102.7	1.14
12/03/2026	330	2415	ALPHA	17:37.3	103.1	0.76
16/03/2026	640	2331	ALPHA	12:52.6	103.1	0.49
17/03/2026	340	2416	ALPHA	17:32.1	106.5	0.78
18/03/2026	620	2389	ALPHA	12:46.2	98.2	0.9
20/03/2026	620	2376	ALPHA	17:35.1	95.7	1.24
23/01/2026	330	2419	ALPHA	17:18.3	105.3	0.98
24/03/2026	620	2387	ALPHA	17:32.1	98.2	1.09
25/03/2026	350	2402	ALPHA	17:38.1	103.5	0.79
27/03/2026	350	2413	ALPHA	13:02.3	105.3	1.06
30/03/2026	630	2344	ALPHA	13:16.4	98.2	0.97
31/03/2026	340	2418	ALPHA	17:41.6	104.3	0.7
3/04/2026	340	2406	ALPHA	12:42.1	104.3	0.57
10/04/2026	630	2344	ALPHA	17:29.1	98.9	1.08
11/04/2026	630	2331	ALPHA	13:10.1	94.7	0.85
15/04/2026	350	2404	ALPHA	17:35.6	112.8	0.2
17/04/2026	70	4213	ALPHA	15:48.5	99.6	0.48
20/04/2026	630	2335	ALPHA	17:22.0	97.5	0.64
22/04/2026	340	2408	ALPHA	17:35.5	117.5	0.49
24/04/2026	630	2334	ALPHA	12:39.2	96.7	0.99
25/04/2026	650	2331	ALPHA	13:04.1	100.2	0.48
26/04/2026	340	2411	ALPHA	12:49.4	107	0.54
29/04/2026	350	2414	ALPHA	17:11.4	106.2	0.88
3/05/2026	630	2352	ALPHA	17:07.5	94.7	0.8
6/05/2026	360	2401	ALPHA	12:51.0	99.6	0.6
13/05/2026	640	2322	ALPHA	13:12.6	102.2	0.52
14/05/2026	220	3903	ALPHA	17:16.3	108.9	0.87
16/05/2026	350	2400	ALPHA	17:36.3	114.2	0.23
18/05/2026	640	2332	ALPHA	12:39.6	100.2	0.74
19/05/2026	640	2336	ALPHA	12:52.4	92.2	0.67
20/05/2026	640	2333	ALPHA	15:28.4	99.6	0.64
23/05/2026	640	2334	ALPHA	12:49.5	96.7	1.01
24/05/2026	650	2318	ALPHA	12:48.1	101.3	0.56

Date	Bench	Blast	Station	Time	Overpressure	PPV
26/05/2026	640	2324	ALPHA	17:00.1	99.6	1.36
31/05/2026	640	2324	ALPHA	11:28.3	93.6	0.94

Table 16: Site B (Bravo) – Blast Monitoring Results Table

Date	Bench	Blast	Station	Time	Overpressure	PPV
1/04/2025	670	2370	BRAVO	13:30.4	102.1	1.63
2/04/2025	270	2420	BRAVO	12:49.4	104.7	0.75
9/04/2025	530	2321	BRAVO	17:23.2	100.4	0.66
10/04/2025	270	2422	BRAVO	17:12.4	107.9	0.71
11/04/2025	530	2320	BRAVO	17:36.1	105.1	0.72
12/04/2025	270	2407	BRAVO	13:21.4	105.8	0.87
16/04/2025	280	2400	BRAVO	12:48.3	112.8	1.07
21/04/2025	280	2406	BRAVO	17:45.2	114.6	0.95
23/04/2025	280	2408	BRAVO	12:56.6	104.7	1
25/04/2025	280	2411	BRAVO	17:03.1	109.7	1.1
30/04/2025	280	2409	BRAVO	09:08.3	107.6	0.74
1/05/2025	280	2413	BRAVO	17:14.0	107.6	0.73
4/05/2025	290	2431	BRAVO	12:41.3	101	0.53
6/05/2025	540	23071	BRAVO	12:55.1	103.5	0.67
7/05/2025	280	2414	BRAVO	17:08.5	107.6	0.98
11/05/2025	290	2432	BRAVO	09:07.1	108.1	1.09
15/05/2025	290	2434	BRAVO	12:46.5	102.1	0.73
17/05/2025	580	2363	BRAVO	12:16.0	103.9	0.75
19/05/2025	280	2401	BRAVO	13:03.0	110.9	0.78
22/05/2025	280	2401	BRAVO	16:50.3	104.3	0.58
24/05/2025	280	2418	BRAVO	14:55.3	103.5	0.7
25/05/2025	550	23094	BRAVO	17:22.5	98.3	0.52
29/05/2025	590	2383	BRAVO	12:45.4	104.7	1.07
30/05/2025	290	2437	BRAVO	13:43.0	106.4	0.99
1/06/2025	290	2437	BRAVO	12:42.1	105.1	0.98
2/06/2025	290	2430	BRAVO	12:45.2	105.4	0.63
6/06/2025	290	2404	BRAVO	12:58.4	107.6	0.6
9/06/2025	600	2363	BRAVO	16:34.2	99.8	0.86
14/06/2025	280	2416	BRAVO	12:47.2	106.1	0.47
16/06/2025	290	2403	BRAVO	13:40.5	108.1	0.9
20/06/2025	300	2408	BRAVO	12:54.6	106.7	0.78
21/06/2025	300	2410	BRAVO	12:55.2	99.8	0.83
23/06/2025	300	2413	BRAVO	13:04.3	106.7	0.86
28/06/2025	290	2404	BRAVO	17:02.5	111.1	0.64
2/07/2025	290	2404	BRAVO	13:03.2	115.4	0.75
8/07/2025	300	2402	BRAVO	12:51.3	106.1	1.65
11/07/2025	300	2412	BRAVO	16:00.2	109.9	1.39
17/07/2025	210	3909	BRAVO	01:01.5	108.9	0.5
27/07/2025	300	2404	BRAVO	12:44.1	106.1	0.61
1/08/2025	310	2408	BRAVO	13:00.4	105.5	0.72
6/08/2025	310	2412	BRAVO	12:48.2	101.4	0.82
7/08/2025	570	2374	BRAVO	16:53.2	100.3	0.97
8/08/2025	310	2419	BRAVO	17:23.2	105.2	1.23
13/08/2025	300	2415	BRAVO	13:01.6	101.8	0.71
15/08/2025	590	23067	BRAVO	13:04.6	91.8	1.29

Date	Bench	Blast	Station	Time	Overpressure	PPV
16/08/2025	580	2368	BRAVO	12:56.1	88.3	0.55
17/08/2025	310	2415	BRAVO	17:26.2	105.8	0.82
22/08/2025	310	2419	BRAVO	17:22.1	102.7	1.07
22/08/2025	580	2365	BRAVO	13:10.5	103.9	0.76
24/08/2025	310	2413	BRAVO	12:53.5	104.9	0.55
24/08/2025	580	2365	BRAVO	17:22.2	99.8	0.6
27/08/2025	580	2367	BRAVO	17:19.1	95.3	1.68
28/08/2025	310	2417	BRAVO	14:58.5	107.9	0.57
30/08/2025	310	2420	BRAVO	12:47.6	105.2	1.17
2/09/2025	590	2319	BRAVO	13:02.6	94.3	1.84
4/09/2025	310	2418	BRAVO	12:53.1	103.1	0.58
5/09/2025	580	2369	BRAVO	17:49.2	97.8	0.5
6/09/2025	590	2321	BRAVO	13:19.4	106.1	0.72
7/09/2025	310	2416	BRAVO	12:49.2	102.3	0.86
10/09/2025	590	23086	BRAVO	12:53.5	103.5	0.99
13/09/2025	590	2385	BRAVO	12:44.3	99.2	0.5
14/09/2025	310	2405	BRAVO	17:34.1	105.2	0.54
16/09/2025	310	2406	BRAVO	17:26.3	100.9	1.34
17/09/2025	590	2377	BRAVO	14:41.5	99.2	3.52
20/09/2025	210	3920	BRAVO	13:04.4	105.5	0.58
21/09/2025	310	2407	BRAVO	17:26.2	98.5	0.12
21/09/2025	590	2377	BRAVO	12:54.2	94.3	1.2
27/09/2025	310	2430	BRAVO	13:03.2	107.9	0.85
30/09/2025	320	2417	BRAVO	17:21.3	100.9	1.63
3/10/2025	320	2414	BRAVO	13:55.1	104.6	1.18
11/10/2025	600	23071	BRAVO	09:27.4	91.8	0.69
12/10/2025	320	2416	BRAVO	12:49.0	99.2	0.8
13/10/2025	600	2370	BRAVO	12:49.2	97.8	2.52
14/10/2025	320	2402	BRAVO	17:23.4	110.2	0.8
15/10/2025	600	2371	BRAVO	17:23.2	97.1	2.57
17/10/2025	320	2415	BRAVO	12:59.5	99.8	0.78
18/10/2025	220	3913	BRAVO	13:06.3	100.3	0.49
19/10/2025	320	2419	BRAVO	17:29.0	102.3	1.08
20/10/2025	600	2375	BRAVO	17:27.5	99.8	1.11
21/10/2025	320	2420	BRAVO	17:42.6	101.8	0.87
31/10/2025	320	2409	BRAVO	12:40.1	98.5	0.65
2/11/2025	600	2373	BRAVO	12:51.5	103.1	1.42
3/11/2025	320	2421	BRAVO	12:47.3	104.6	0.65
4/11/2025	320	2408	BRAVO	12:28.5	101.8	1.06
6/11/2025	610	2370	BRAVO	17:21.1	97.8	2.18
8/11/2025	320	2407	BRAVO	12:58.3	100.3	0.67
9/11/2025	610	2371	BRAVO	17:21.6	97.8	1.51
10/11/2025	320	2423	BRAVO	13:00.3	102.7	0.6
11/11/2025	610	2388	BRAVO	17:15.1	94.3	0.71
12/11/2025	610	2371	BRAVO	17:16.5	97.8	1.65
13/11/2025	610	23086	BRAVO	17:24.2	100.9	0.8
15/11/2025	330	2415	BRAVO	17:12.6	101.8	1.42
15/11/2025	600	2383	BRAVO	12:58.4	95.3	1.36
16/11/2025	330	2413	BRAVO	12:48.0	97.8	0.94
17/11/2025	320	2425	BRAVO	12:47.4	99.2	0.5
17/11/2025	610	2383	BRAVO	17:24.3	98.5	0.61
18/11/2025	330	2416	BRAVO	17:28.0	104.6	0.72

Date	Bench	Blast	Station	Time	Overpressure	PPV
18/11/2025	600	2372	BRAVO	12:49.1	90.2	1.29
20/11/2025	330	2414	BRAVO	13:26.5	105.5	0.73
22/11/2025	610	2384	BRAVO	13:18.3	104.9	1.02
23/11/2025	310	2411	BRAVO	17:36.6	102.7	0.59
26/11/2025	610	2375	BRAVO	17:29.1	97.1	1.77
29/11/2025	610	2384	BRAVO	17:28.5	97.1	1.14
30/11/2025	330	2418	BRAVO	12:44.0	106.9	0.75
3/12/2025	620	2385	BRAVO	13:27.4	91.8	1.87
5/12/2025	610	2376	BRAVO	17:20.2	95.3	0.58
6/12/2025	330	2406	BRAVO	12:43.2	98.5	0.61
7/12/2025	610	2377	BRAVO	17:25.3	99.8	0.56
8/12/2025	620	2395	BRAVO	17:32.3	99.8	0.86
9/12/2025	330	2405	BRAVO	13:22.2	109.1	0.76
10/12/2025	330	2417	BRAVO	17:28.5	104.9	0.62
10/12/2025	610	2392	BRAVO	12:46.2	97.1	1.06
11/12/2025	330	2404	BRAVO	17:15.4	98.5	0.86
11/12/2025	620	2396	BRAVO	12:44.3	97.1	0.67
14/12/2025	330	2403	BRAVO	12:44.5	99.3	0.59
15/12/2025	610	2373	BRAVO	13:10.0	98.5	2.06
16/12/2025	320	2421	BRAVO	15:50.4	104.6	0.6
16/12/2025	620	2397	BRAVO	15:49.3	99.2	0.66
18/12/2025	330	2407	BRAVO	17:23.3	103.9	0.62
18/12/2025	620	2395	BRAVO	12:49.0	97.1	0.53
19/12/2025	620	2350	BRAVO	17:22.3	102.3	0.79
20/12/2025	330	2419	BRAVO	12:51.3	97.1	0.74
25/12/2025	620	2394	BRAVO	09:02.1	96.3	0.66
26/12/2025	330	2412	BRAVO	12:36.4	101.4	0.56
28/12/2025	620	2390	BRAVO	12:43.6	101.8	0.47
29/12/2025	340	2413	BRAVO	13:05.4	103.1	1.2
31/12/2025	340	2412	BRAVO	12:57.3	108.7	1.26
3/01/2026	340	2411	BRAVO	07:55.2	103.9	0.68
8/01/2026	340	2402	BRAVO	12:49.1	94.3	0.59
9/01/2026	320	2403	BRAVO	13:00.1	103.5	0.5
10/01/2026	340	2401	BRAVO	12:43.3	98.5	0.57
11/01/2026	340	2403	BRAVO	12:42.1	98.5	0.63
15/01/2026	340	2414	BRAVO	10:10.1	101.8	0.95
30/01/2026	630	23030	BRAVO	13:07.4	100.3	0.53
15/02/2026	330	2422	BRAVO	17:22.4	103.1	0.65
15/02/2026	610	2374	BRAVO	08:00.1	93.2	1.51
17/02/2026	620	2370	BRAVO	17:25.1	96.3	0.47
18/02/2026	630	2330	BRAVO	17:35.6	98.5	0.64
23/02/2026	350	2401	BRAVO	13:03.1	106.1	0.62
23/02/2026	630	2340	BRAVO	17:14.4	94.3	0.57
24/02/2026	330	2420	BRAVO	17:27.2	104.9	0.47
26/02/2026	230	3938	BRAVO	17:35.3	96.3	0.92
26/02/2026	610	23050	BRAVO	12:53.1	97.8	0.84
27/02/2026	630	2331	BRAVO	13:11.4	100.3	1.06
28/02/2026	330	2408	BRAVO	17:28.5	108.9	0.59
1/03/2026	630	2350	BRAVO	17:34.2	93.2	3.12
4/03/2026	350	2412	BRAVO	17:17.0	100.9	1.83
6/03/2026	620	2386	BRAVO	12:59.3	95.3	3.12

Date	Bench	Blast	Station	Time	Overpressure	PPV
8/03/2026	620	2374	BRAVO	17:25.0	94.3	1.38
9/03/2026	350	2402	BRAVO	15:22.3	98.5	0.59
11/03/2026	620	2375	BRAVO	16:02.5	100.3	1.35
12/03/2026	330	2415	BRAVO	17:37.3	99.2	0.64
16/03/2026	640	2331	BRAVO	12:52.6	102.7	0.78
17/03/2026	340	2416	BRAVO	17:32.1	104.9	0.6
18/03/2026	620	2389	BRAVO	12:46.2	96.3	1.08
20/03/2026	620	2376	BRAVO	17:35.1	100.3	1.8
24/03/2026	620	2387	BRAVO	17:32.1	97.8	1.85
25/03/2026	340	2405	BRAVO	17:39.2	101.4	0.71
25/03/2026	350	2402	BRAVO	17:38.1	100.9	0.59
27/03/2026	350	2413	BRAVO	13:02.3	99.2	0.87
30/03/2026	630	2344	BRAVO	13:16.4	97.1	1.02
31/03/2026	340	2418	BRAVO	17:41.6	102.3	0.87
1/04/2026	340	2405	BRAVO	10:13.1	99.2	0.6
8/04/2026	640	2321	BRAVO	18:01.5	105.5	0.53
9/04/2026	630	23032	BRAVO	17:25.3	90.2	0.55
10/04/2026	630	2344	BRAVO	17:29.1	93.2	1.62
11/04/2026	630	2331	BRAVO	13:10.1	94.3	1.55
12/04/2026	90	4222	BRAVO	17:32.4	97.8	1.05
14/04/2026	630	2336	BRAVO	17:32.4	97.1	0.57
15/04/2026	350	2404	BRAVO	17:35.6	111.4	0.5
17/04/2026	70	4213	BRAVO	15:48.5	100.9	0.91
18/04/2026	340	2409	BRAVO	13:14.3	99.2	0.6
20/04/2026	630	2335	BRAVO	17:22.0	96.3	0.76
24/04/2026	630	2334	BRAVO	12:39.2	99.8	1.23
27/04/2026	650	2335	BRAVO	17:17.1	106.1	0.52
29/04/2026	350	2414	BRAVO	17:11.4	104.6	0.81
3/05/2026	630	2352	BRAVO	17:07.5	93.2	1.5
5/05/2026	650	23023	BRAVO	12:55.5	90.2	0.56
6/05/2026	360	2401	BRAVO	12:51.0	96.3	0.56
7/05/2026	630	2333	BRAVO	13:01.0	97.1	3.55
8/05/2026	350	2414	BRAVO	17:19.2	104.2	0.69
9/05/2026	630	2334	BRAVO	17:12.3	93.2	1.62
10/05/2026	360	2410	BRAVO	17:06.4	104.6	1.18
11/05/2026	640	2323	BRAVO	12:54.0	97.8	1.23
13/05/2026	640	2322	BRAVO	13:12.6	99.2	0.87
14/05/2026	220	3903	BRAVO	17:16.3	107.4	0.75
16/05/2026	350	2400	BRAVO	17:36.3	109.7	0.52
18/05/2026	640	2332	BRAVO	12:39.6	99.2	1.48
19/05/2026	640	2336	BRAVO	12:52.4	91.8	1.16
20/05/2026	640	2333	BRAVO	15:28.4	99.2	0.79
23/05/2026	640	2334	BRAVO	12:49.5	95.3	1.67
24/05/2026	650	2318	BRAVO	12:48.1	100.9	0.68
26/05/2026	640	2324	BRAVO	17:00.1	96.3	4.66
27/05/2026	660	2310	BRAVO	13:31.3	93.2	0.58
31/05/2026	640	2324	BRAVO	11:28.3	107.1	1.94

Table 17: Site C (Charlie) - Blast Monitoring Results Table

Date	Bench	Blast	Station	Time	Overpressure	PPV
1/04/2025	670	2370	CHARLIE	13:30.4	103.9	0.67

Date	Bench	Blast	Station	Time	Overpressure	PPV
21/04/2025	280	2406	CHARLIE	17:45.2	118.1	0.6
25/04/2025	280	2411	CHARLIE	17:03.1	109.1	0.58
11/05/2025	290	2432	CHARLIE	09:07.1	108.8	0.55
13/05/2025	290	2436	CHARLIE	16:54.5	106.1	0.6
30/05/2025	290	2437	CHARLIE	13:43.0	109.1	0.85
1/06/2025	290	2437	CHARLIE	12:42.1	105.6	0.56
9/06/2025	600	2363	CHARLIE	16:34.2	99.6	0.55
23/06/2025	300	2413	CHARLIE	13:04.3	104.5	0.5
8/07/2025	300	2402	CHARLIE	12:51.3	104.5	0.91
11/07/2025	300	2412	CHARLIE	16:00.2	109.5	0.6
8/08/2025	310	2419	CHARLIE	17:23.2	109.1	0.8
15/08/2025	590	23067	CHARLIE	13:04.6	92.9	0.68
17/08/2025	310	2415	CHARLIE	17:26.2	108.3	0.54
27/08/2025	580	2367	CHARLIE	17:19.1	96	0.98
30/08/2025	310	2420	CHARLIE	12:47.6	106.9	0.83
2/09/2025	590	2319	CHARLIE	13:02.6	95.1	0.83
16/09/2025	310	2406	CHARLIE	17:26.3	100.6	0.67
17/09/2025	590	2377	CHARLIE	14:41.5	102	1.33
21/09/2025	310	2407	CHARLIE	17:26.2	100.1	0.63
21/09/2025	590	2377	CHARLIE	12:54.2	96.8	0.61
27/09/2025	310	2430	CHARLIE	13:03.2	110.2	0.57
30/09/2025	320	2417	CHARLIE	17:21.3	102	0.85
3/10/2025	320	2414	CHARLIE	13:55.1	105.8	0.66
13/10/2025	600	2370	CHARLIE	12:49.2	101.1	1.04
15/10/2025	600	2371	CHARLIE	17:23.2	97.6	0.78
17/10/2025	320	2415	CHARLIE	12:59.5	102.9	0.62
19/10/2025	320	2419	CHARLIE	17:29.0	104.9	0.48
2/11/2025	600	2373	CHARLIE	12:51.5	99.5	0.72
4/11/2025	320	2408	CHARLIE	12:28.5	100.1	0.65
6/11/2025	610	2370	CHARLIE	17:21.1	98.3	0.87
9/11/2025	610	2371	CHARLIE	17:21.6	101.1	0.87
12/11/2025	610	2371	CHARLIE	17:16.5	98.3	0.77
15/11/2025	330	2415	CHARLIE	17:12.6	104.3	0.65
15/11/2025	600	2383	CHARLIE	12:58.4	96.8	0.54
16/11/2025	330	2413	CHARLIE	12:48.0	98.3	0.52
18/11/2025	600	2372	CHARLIE	12:49.1	91.6	0.53
22/11/2025	610	2384	CHARLIE	13:18.3	108.5	0.82
26/11/2025	610	2375	CHARLIE	17:29.1	97.6	1.05
29/11/2025	610	2384	CHARLIE	17:28.5	96.8	0.64
3/12/2025	620	2385	CHARLIE	13:27.4	96	0.96
10/12/2025	610	2392	CHARLIE	12:46.2	98.3	0.7
11/12/2025	330	2404	CHARLIE	17:15.4	96.8	0.52
15/12/2025	610	2373	CHARLIE	13:10.0	98.3	0.71
19/12/2025	620	2350	CHARLIE	17:22.3	102.9	0.57
29/12/2025	340	2413	CHARLIE	13:05.4	104	0.6
31/12/2025	340	2412	CHARLIE	12:57.3	110.8	0.71
11/01/2026	340	2403	CHARLIE	12:42.1	97.6	0.53
15/01/2026	340	2414	CHARLIE	10:10.1	102.4	0.55
15/02/2026	610	2374	CHARLIE	08:00.1	104.6	0.7
18/02/2026	630	2330	CHARLIE	17:35.6	97.6	0.52
26/02/2026	610	23050	CHARLIE	12:53.1	95.1	0.55
27/02/2026	630	2331	CHARLIE	13:11.4	100.6	0.52

Date	Bench	Blast	Station	Time	Overpressure	PPV
1/03/2026	630	2350	CHARLIE	17:34.2	95.1	1.63
4/03/2026	350	2412	CHARLIE	17:17.0	102	0.86
6/03/2026	620	2386	CHARLIE	12:59.3	95.1	0.87
8/03/2026	620	2374	CHARLIE	17:25.0	96.8	0.81
11/03/2026	620	2375	CHARLIE	16:02.5	101.6	0.67
18/03/2026	620	2389	CHARLIE	12:46.2	96.8	0.48
20/03/2026	620	2376	CHARLIE	17:35.1	98.3	0.71
24/03/2026	620	2387	CHARLIE	17:32.1	94.1	0.64
27/03/2026	350	2413	CHARLIE	13:02.3	106.1	0.54
28/03/2026	70	4205	CHARLIE	13:57.2	100.6	0.55
30/03/2026	630	2344	CHARLIE	13:16.4	98.3	0.59
7/04/2026	70	4211	CHARLIE	17:21.4	108	0.51
10/04/2026	630	2344	CHARLIE	17:29.1	97.6	0.99
11/04/2026	630	2331	CHARLIE	13:10.1	98.3	0.67
17/04/2026	70	4213	CHARLIE	15:48.5	103.6	1.28
23/04/2026	70	4209	CHARLIE	09:19.6	97.6	0.59
24/04/2026	630	2334	CHARLIE	12:39.2	98.3	0.56
3/05/2026	630	2352	CHARLIE	17:07.5	97.6	0.65
7/05/2026	630	2333	CHARLIE	13:01.0	97.6	0.68
9/05/2026	630	2334	CHARLIE	17:12.3	91.6	0.66
10/05/2026	360	2410	CHARLIE	17:06.4	108.9	0.58
11/05/2026	640	2323	CHARLIE	12:54.0	97.6	0.65
14/05/2026	90	4224	CHARLIE	13:03.0	105.3	0.52
18/05/2026	640	2332	CHARLIE	12:39.6	102	0.67
19/05/2026	640	2336	CHARLIE	12:52.4	90	0.57
23/05/2026	640	2334	CHARLIE	12:49.5	96	0.96
26/05/2026	640	2324	CHARLIE	17:00.1	100.1	1.15
31/05/2026	640	2324	CHARLIE	11:28.3	98.3	0.6

Table 18: Site D (Delta) - Blast Monitoring Results Table

Date	Bench	Blast	Station	Time	Overpressure	PPV
1/04/2025	670	2370	DELTA	13:30.4	102.5	0.52
12/04/2025	120	3970	DELTA	14:54.1	106.4	0.64
9/06/2025	600	2363	DELTA	16:34.2	100.1	0.52
29/06/2025	200	39009	DELTA	13:51.4	117.9	0.26
27/08/2025	580	2367	DELTA	17:19.1	94.6	0.55
8/09/2025	220	3921	DELTA	17:23.2	111.1	0.54
17/09/2025	590	2377	DELTA	14:41.5	98.5	0.94
20/09/2025	210	3920	DELTA	13:04.4	108.2	0.59
6/10/2025	130	3952	DELTA	13:27.5	102.4	0.78
13/10/2025	600	2370	DELTA	12:49.2	99.6	0.82
15/10/2025	600	2371	DELTA	17:23.2	97.1	0.6
6/11/2025	610	2370	DELTA	17:21.1	95.5	0.52
9/11/2025	610	2371	DELTA	17:21.6	98.5	0.61
12/11/2025	610	2371	DELTA	17:16.5	97.1	0.77
26/11/2025	610	2375	DELTA	17:29.1	98.5	0.49
29/11/2025	610	2384	DELTA	17:28.5	94.6	0.55
3/12/2025	620	2385	DELTA	13:27.4	94.6	0.73
10/12/2025	610	2392	DELTA	12:46.2	98.5	0.44

Date	Bench	Blast	Station	Time	Overpressure	PPV
31/01/2026	230	3933	DELTA	16:45.5	104.5	0.52
13/02/2026	230	3935	DELTA	17:38.2	105.4	0.59
16/02/2026	80	4204	DELTA	17:31.6	109.2	0.49
18/02/2026	630	2330	DELTA	17:35.6	97.8	0.5
28/02/2026	80	4204	DELTA	12:49.5	103.8	0.64
4/03/2026	80	4224	DELTA	12:55.5	100.6	0.69
6/03/2026	620	2386	DELTA	12:59.3	94.6	0.65
8/03/2026	620	2374	DELTA	17:25.0	96.4	0.49
10/03/2026	70	4205	DELTA	17:19.3	106.2	0.48
26/03/2026	90	4223	DELTA	17:20.3	107.1	0.51
28/03/2026	70	4205	DELTA	13:57.2	107.4	1.24
7/04/2026	70	4211	DELTA	17:21.4	112.1	1.87
10/04/2026	630	2344	DELTA	17:29.1	96.4	0.5
11/04/2026	630	2331	DELTA	13:10.1	97.1	0.6
12/04/2026	90	4222	DELTA	17:32.4	106.7	0.71
15/04/2026	80	4207	DELTA	17:20.6	106.4	1.3
17/04/2026	70	4213	DELTA	15:48.5	111.2	6.03
19/04/2026	80	4224	DELTA	15:22.4	102.8	0.71
21/04/2026	140	3949	DELTA	12:56.3	102	0.51
23/04/2026	70	4209	DELTA	09:19.6	107.1	2.34
30/04/2026	140	3948	DELTA	13:28.1	109.3	0.49
1/05/2026	90	4222	DELTA	17:28.3	111.5	0.56
3/05/2026	630	2352	DELTA	17:07.5	97.1	0.5
7/05/2026	630	2333	DELTA	13:01.0	102	0.5
11/05/2026	640	2323	DELTA	12:54.0	94.6	0.67
14/05/2026	90	4224	DELTA	13:03.0	110	1.09
15/05/2026	80	4207	DELTA	17:09.2	108	1.54
21/05/2026	80	4210	DELTA	12:51.6	107.8	1.44
23/05/2026	640	2334	DELTA	12:49.5	95.5	0.5
26/05/2026	640	2324	DELTA	17:00.1	100.6	0.59

Table 19: Site E (Echo) - Blast Monitoring Results Table

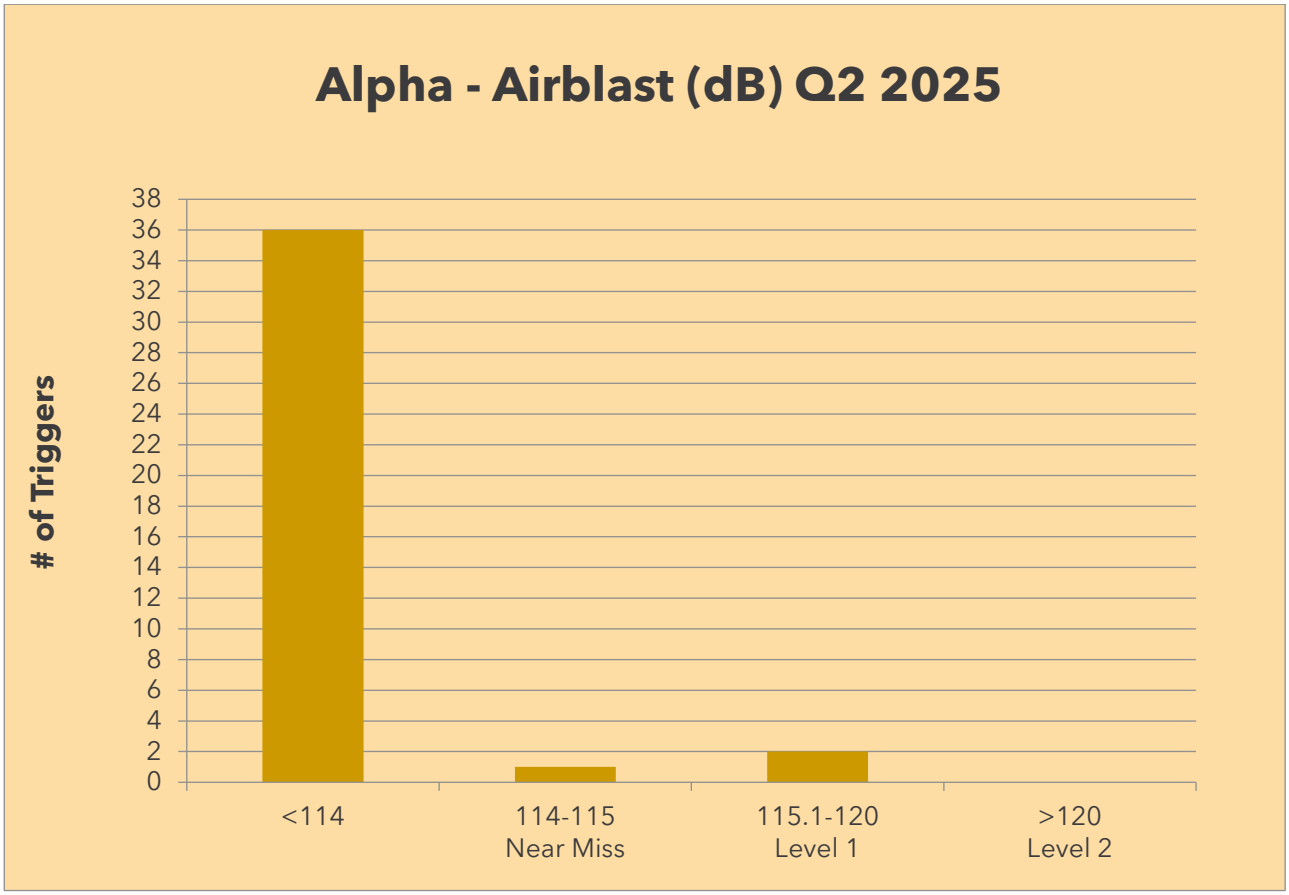
Date	Bench	Blast	Station	Time	Overpressure	PPV
08/05/2025	170	3942	ECHO	13:03.53	112.7	0.120
14/05/2025	150	3929	ECHO	12:48.08	115.7	0.530
15/05/2025	100	3942	ECHO	09:08.59	120.6	0.820
20/05/2025	250	2401	ECHO	12:35.00	118.7	0.080
19/06/2025	160	3927	ECHO	12:50.50	107.7	0.500
06/10/2025	130	3953	ECHO	27:49.0	106.6	1.84

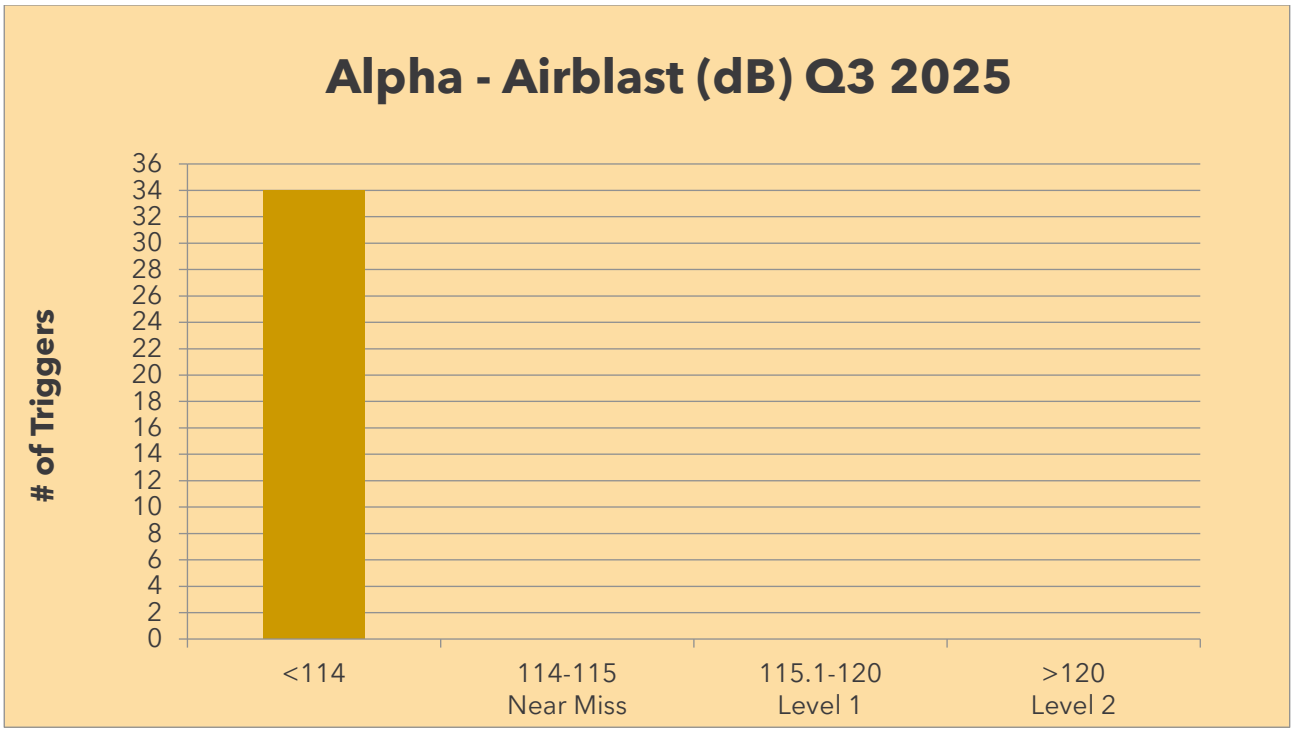
Table 20: Site F (Foxtrot) - Blast Monitoring Results Table

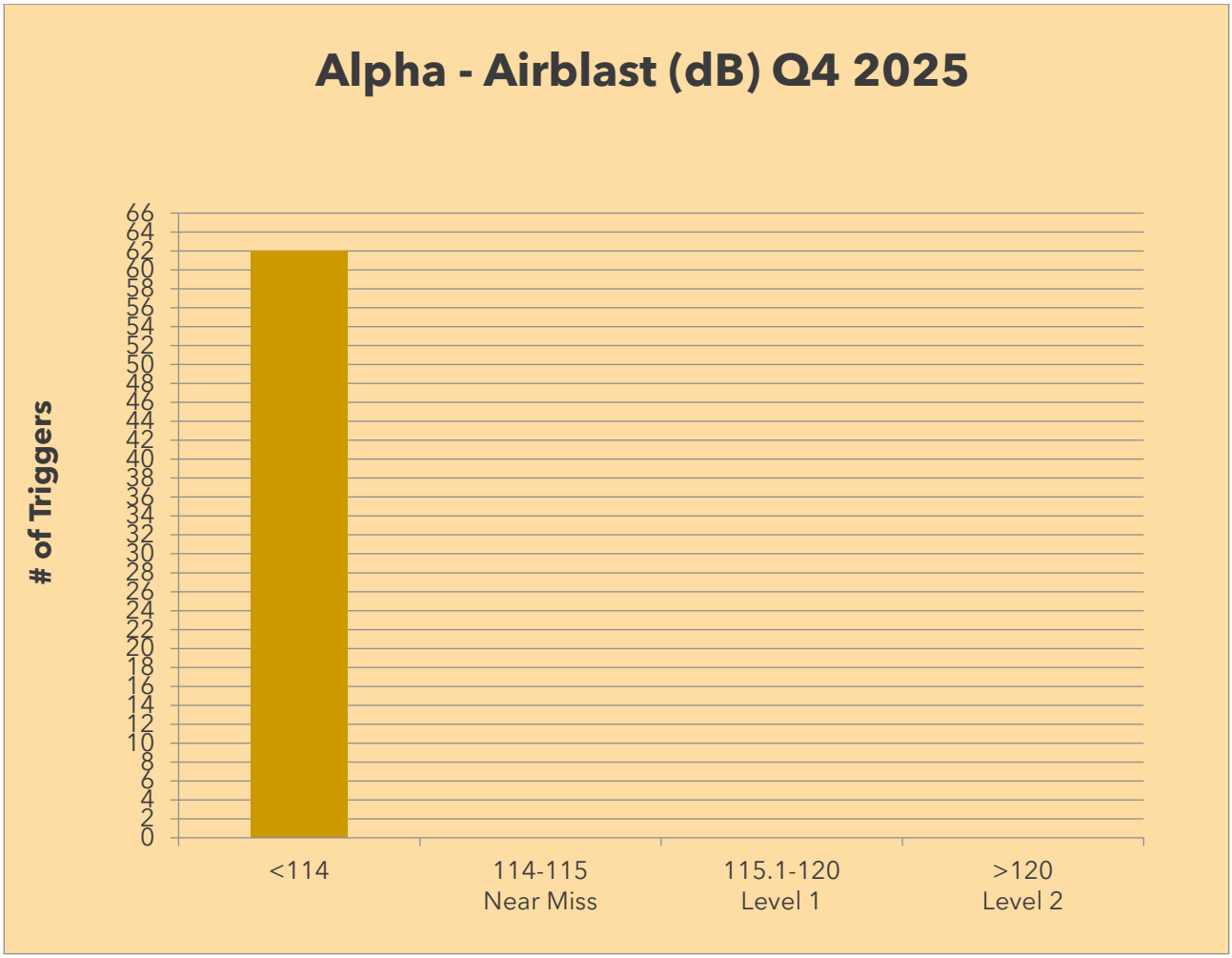
Date	Bench	Blast	Station	Time	Overpressure	PPV
06/04/2025	260	2441	FOXTROT	17:39.37	121.2	0.130
27/08/2025	580	2367	FOXTROT	17:19.1	97.3	0.54
8/09/2025	220	3921	FOXTROT	17:23.2	116.4	0.5

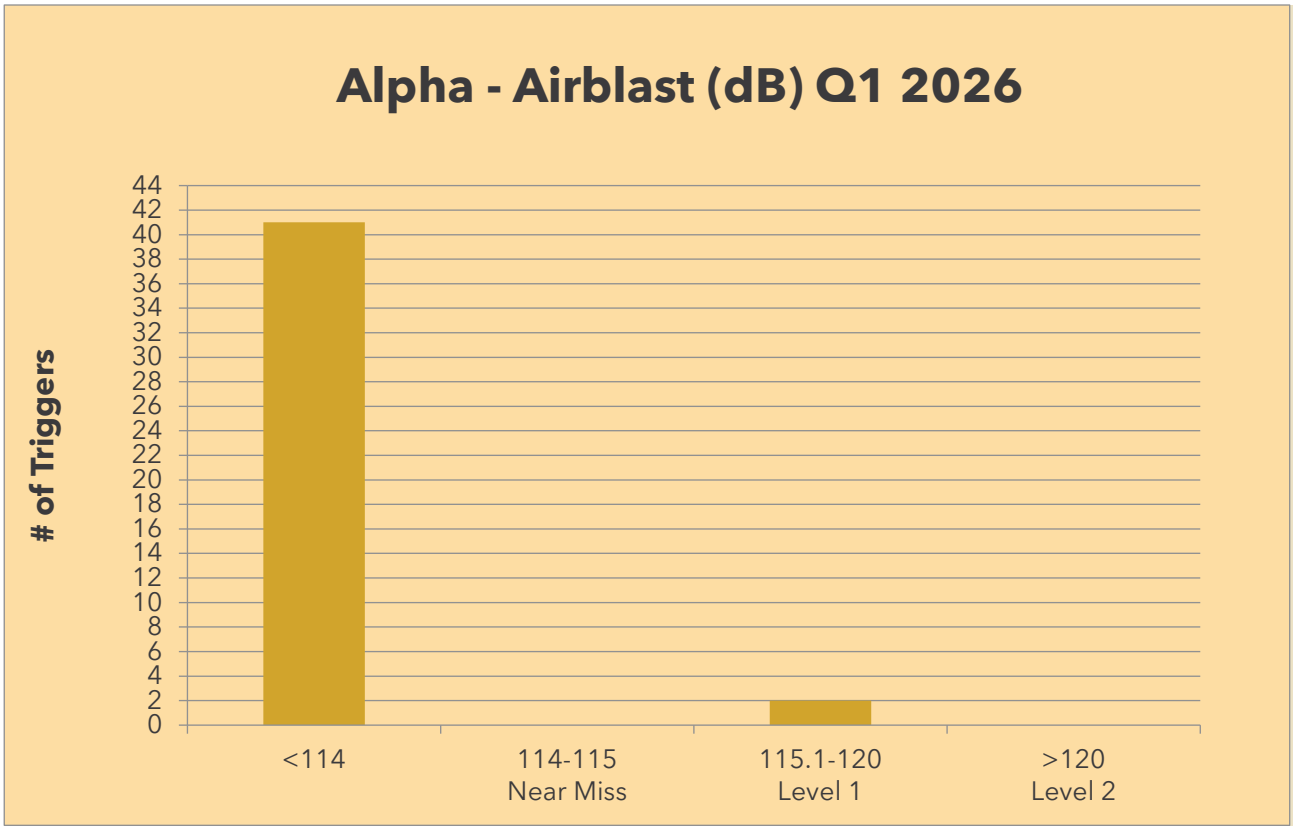
Date	Bench	Blast	Station	Time	Overpressure	PPV
17/09/2025	590	2377	FOXTROT	14:41.5	100.1	0.63
20/09/2025	210	3920	FOXTROT	13:04.4	111.5	0.61
9/11/2025	610	2371	FOXTROT	17:21.6	102.2	0.53
12/11/2025	610	2371	FOXTROT	17:16.5	99.3	0.67
3/12/2025	620	2385	FOXTROT	13:27.4	107.6	0.74
13/02/2026	230	3935	FOXTROT	17:38.2	108.2	0.58
4/03/2026	80	4224	FOXTROT	12:55.5	107.6	0.52
28/03/2026	70	4205	FOXTROT	13:57.2	112.7	0.58
7/04/2026	70	4211	FOXTROT	17:21.4	114.7	0.7
12/04/2026	90	4222	FOXTROT	17:32.4	111.3	0.53
15/04/2026	80	4207	FOXTROT	17:20.6	109.1	0.63
17/04/2026	70	4213	FOXTROT	15:48.5	111.9	2.17
19/04/2026	80	4224	FOXTROT	15:22.4	109.4	0.81
23/04/2026	70	4209	FOXTROT	09:19.6	111.5	0.82
1/05/2026	90	4222	FOXTROT	17:28.3	111.1	0.53
14/05/2026	90	4224	FOXTROT	13:03.0	112.3	0.71
15/05/2026	80	4207	FOXTROT	17:09.2	112.1	0.53
21/05/2026	80	4210	FOXTROT	12:51.6	109.9	0.54

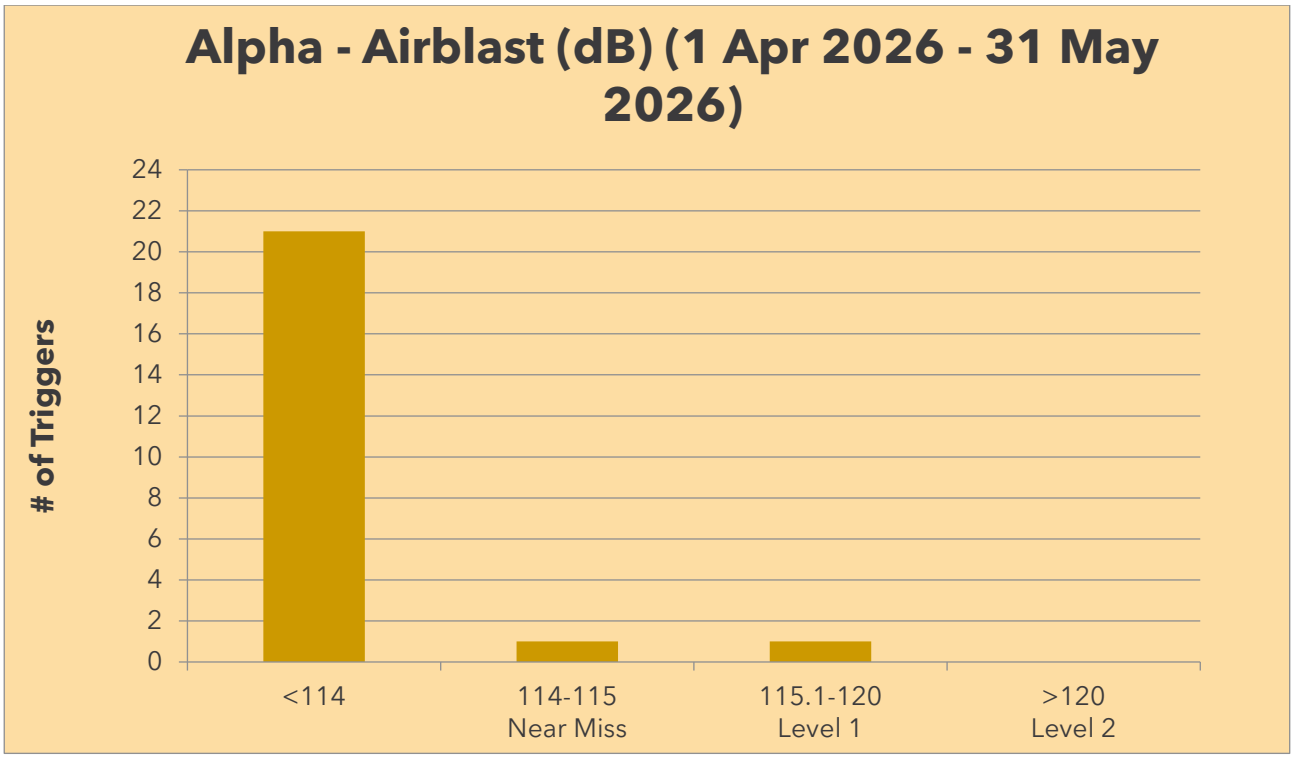
APPENDIX 3: Airblast Histograms

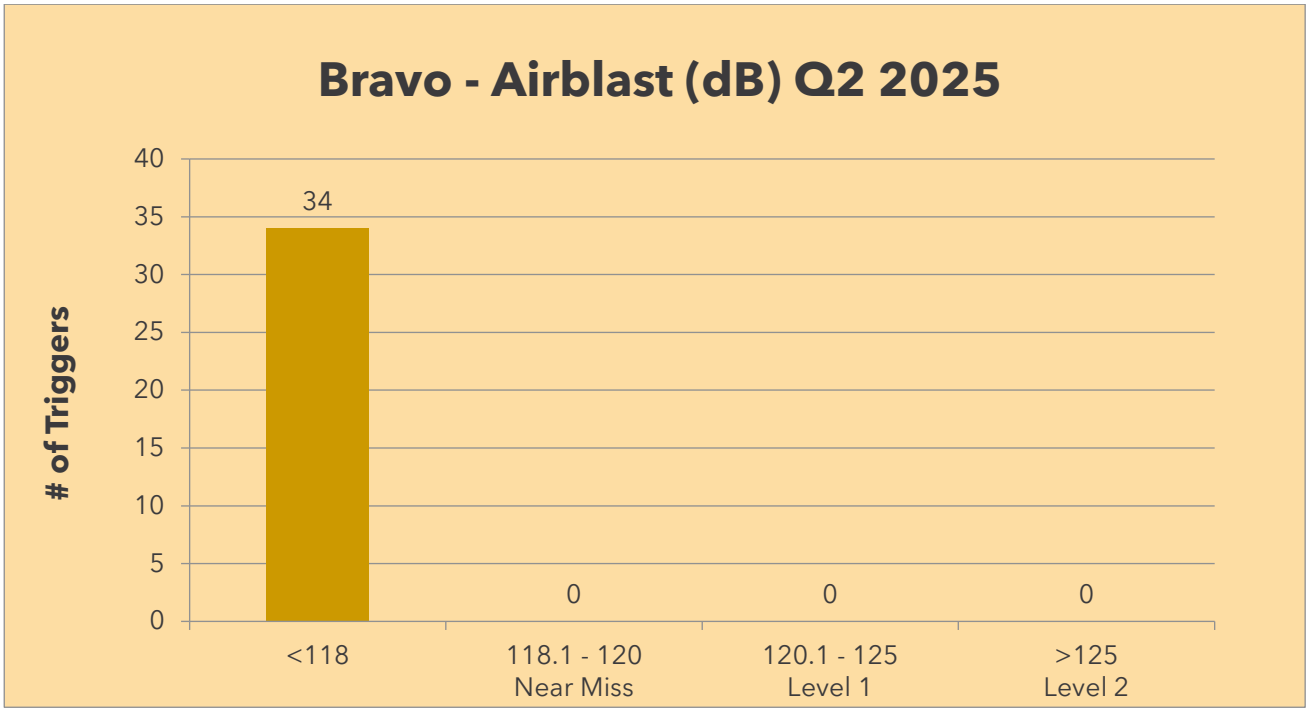

Alpha - Airblast (dB) Q2 2025
# of Triggers
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
<114
114-115
Near Miss
115.1-120
Level 1
>120
Level 2

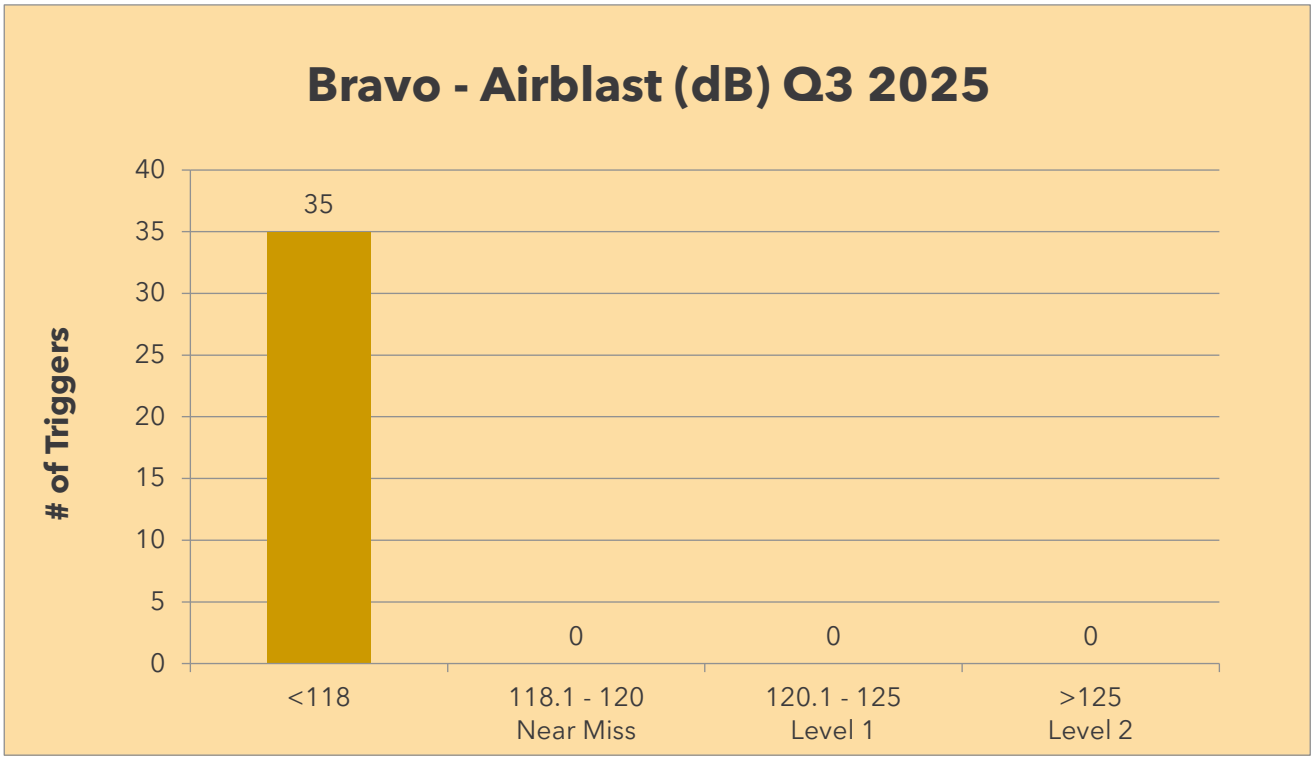

Alpha - Airblast (dB) Q3 2025
# of Triggers
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
<114
114-115
Near Miss
115.1-120
Level 1
>120
Level 2

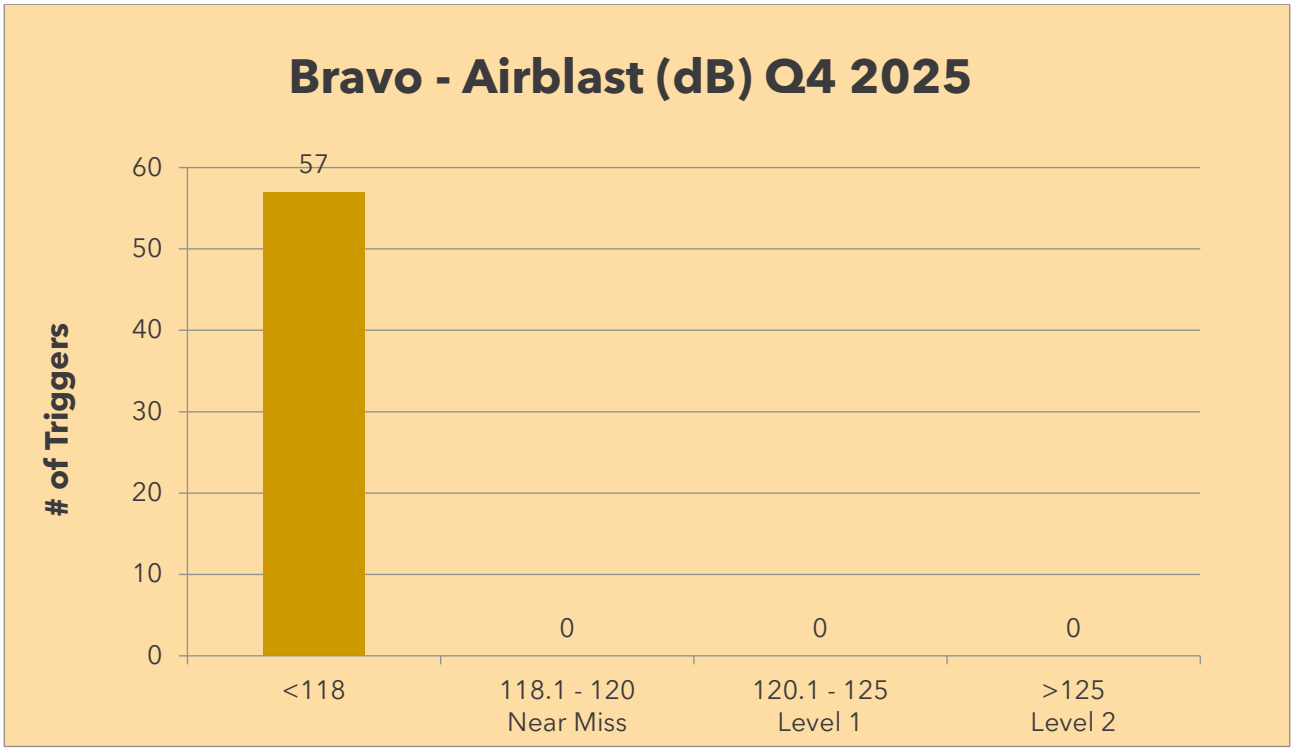

Alpha - Airblast (dB) Q4 2025
# of Triggers
66
64
62
60
58
56
54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
<114
114-115
Near Miss
115.1-120
Level 1
>120
Level 2

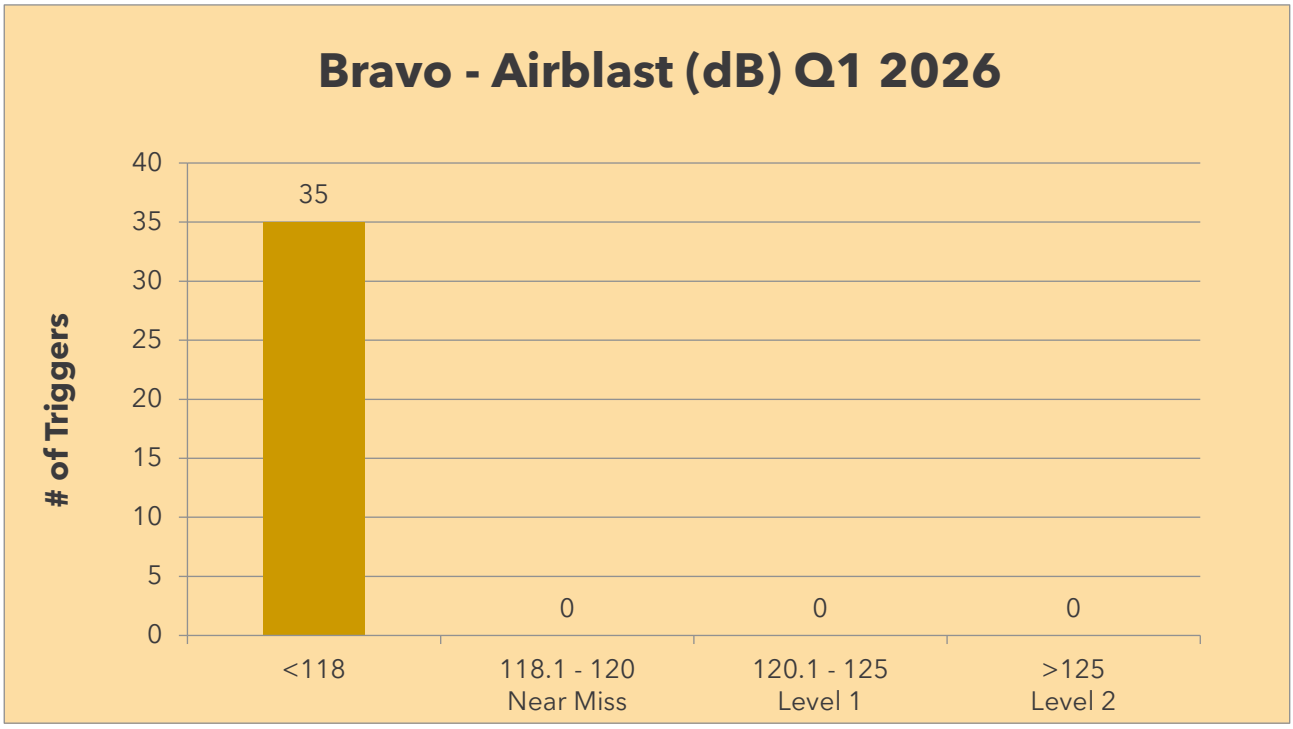

Alpha - Airblast (dB) Q1 2026
# of Triggers
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
<114
114-115
Near Miss
115.1-120
Level 1
>120
Level 2

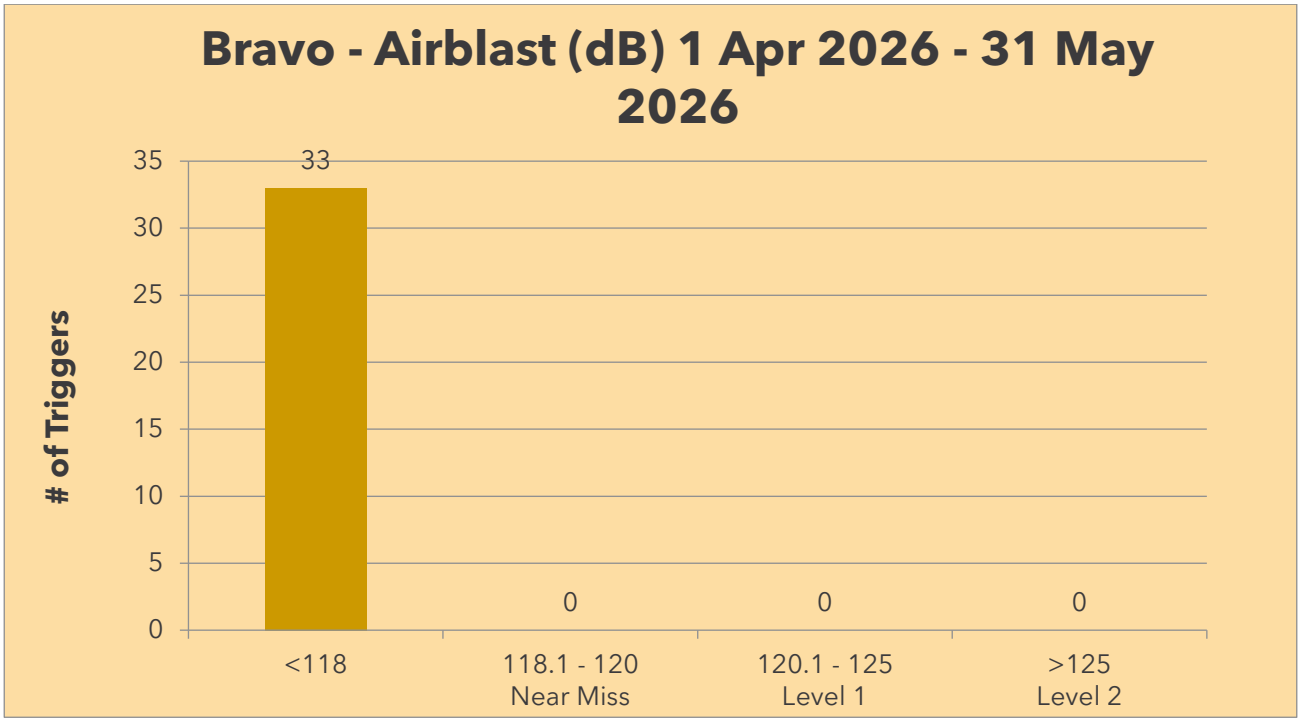

Alpha - Airblast (dB) (1 Apr 2026 - 31 May 2026)
# of Triggers
24
22
20
18
16
14
12
10
8
6
4
2
0
<114
114-115
Near Miss
115.1-120
Level 1
>120
Level 2

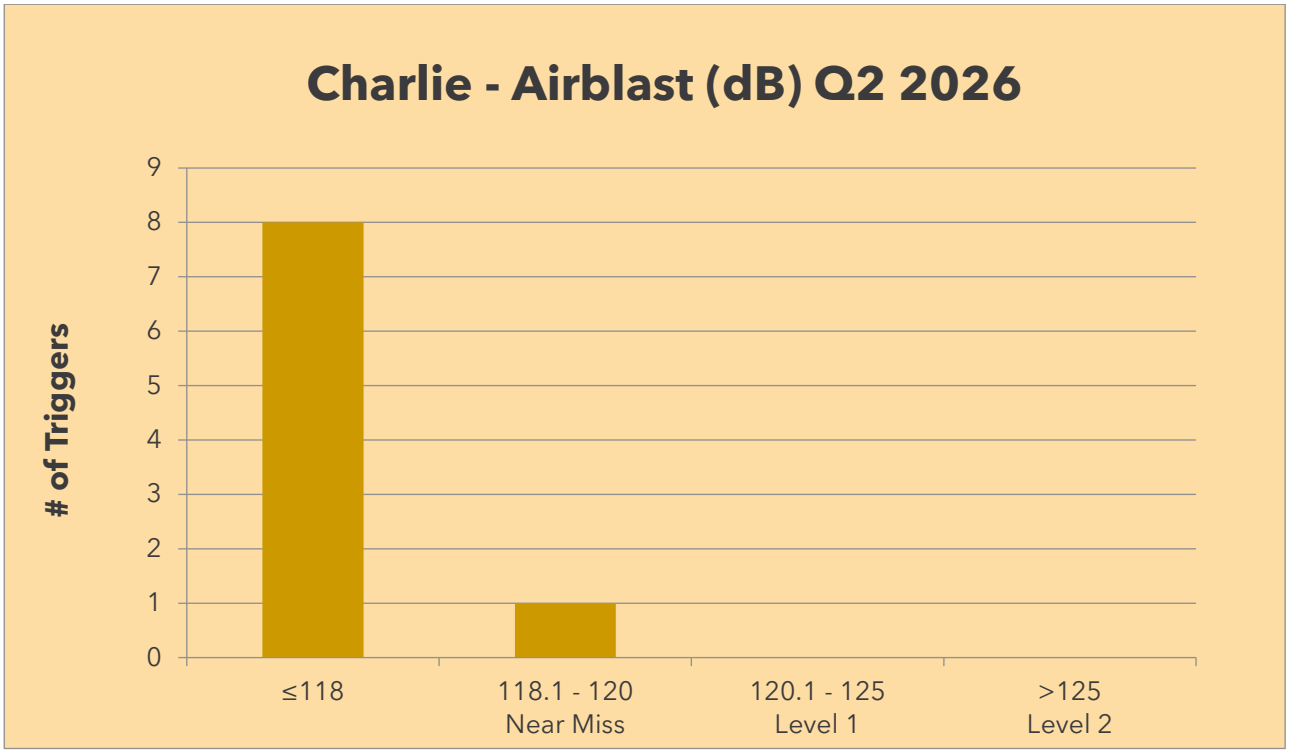

Bravo - Airblast (dB) Q2 2025
# of Triggers
40
35
30
25
20
15
10
5
0
34
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

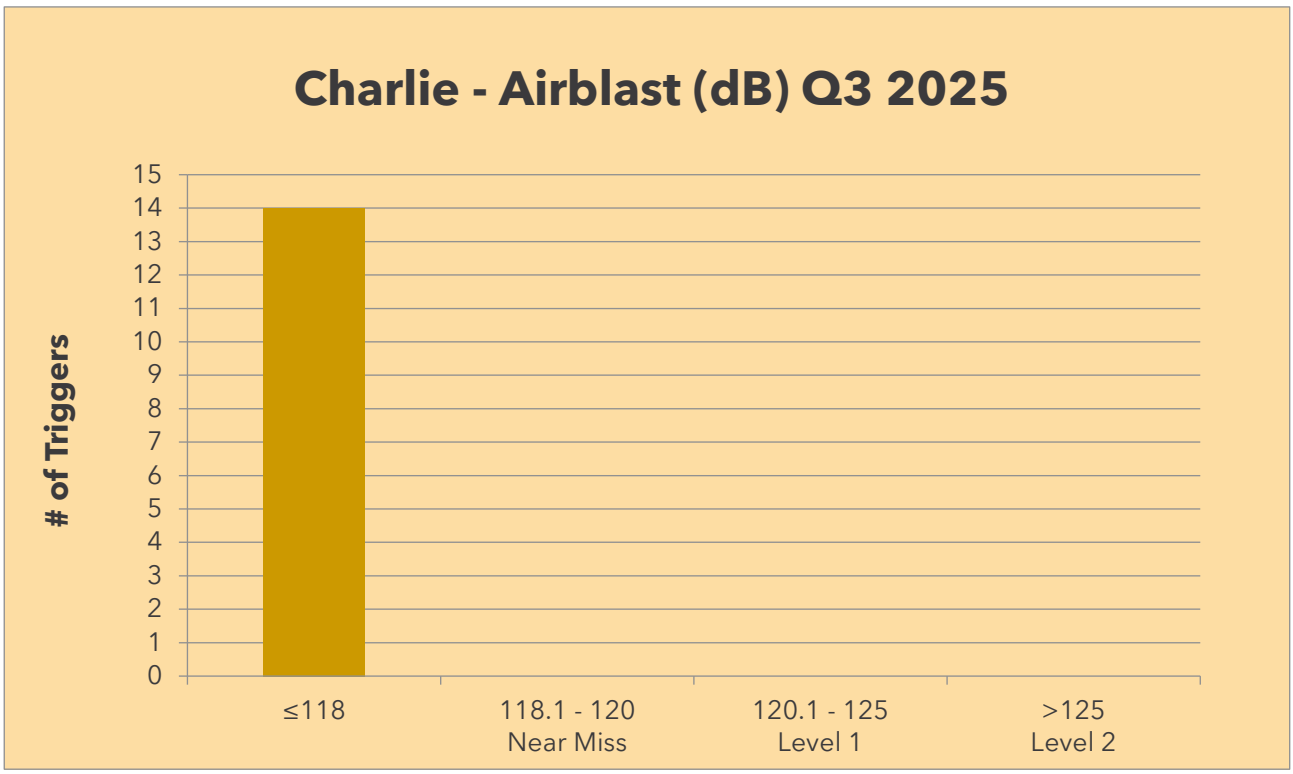

Bravo - Airblast (dB) Q3 2025
# of Triggers
40
35
30
25
20
15
10
5
0
35
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

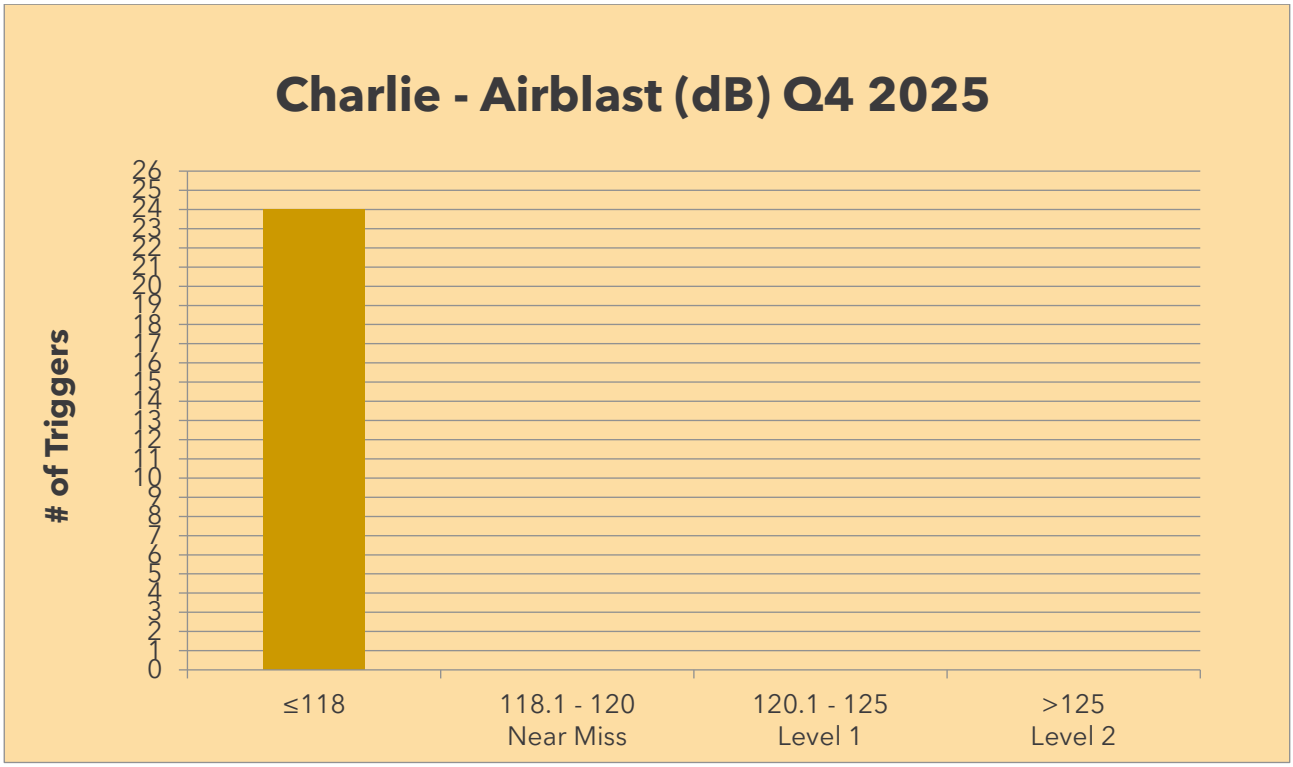

Bravo - Airblast (dB) Q4 2025
# of Triggers
60
50
40
30
20
10
0
57
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

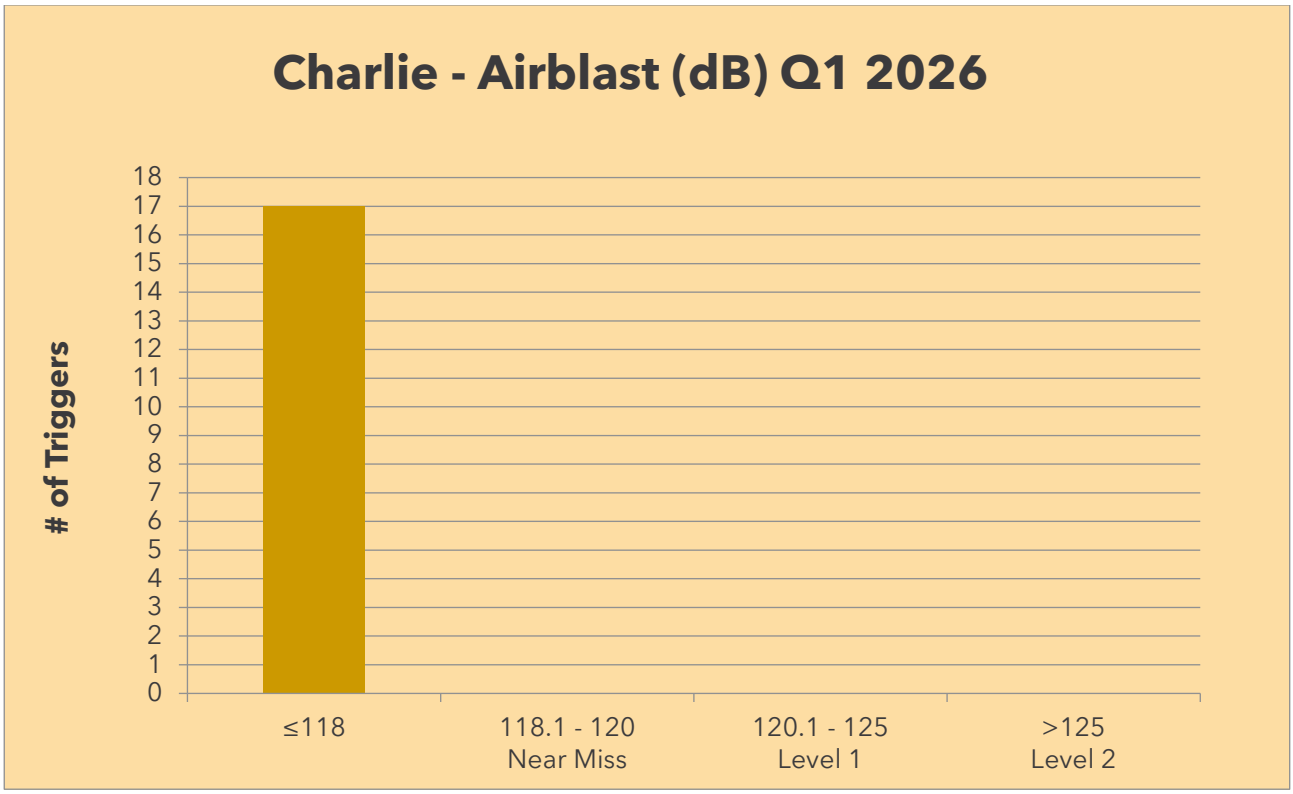

Bravo - Airblast (dB) Q1 2026
# of Triggers
40
35
30
25
20
15
10
5
0
35
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2


Bravo - Airblast (dB) 1 Apr 2026 - 31 May 2026
# of Triggers
35
30
25
20
15
10
5
0
33
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

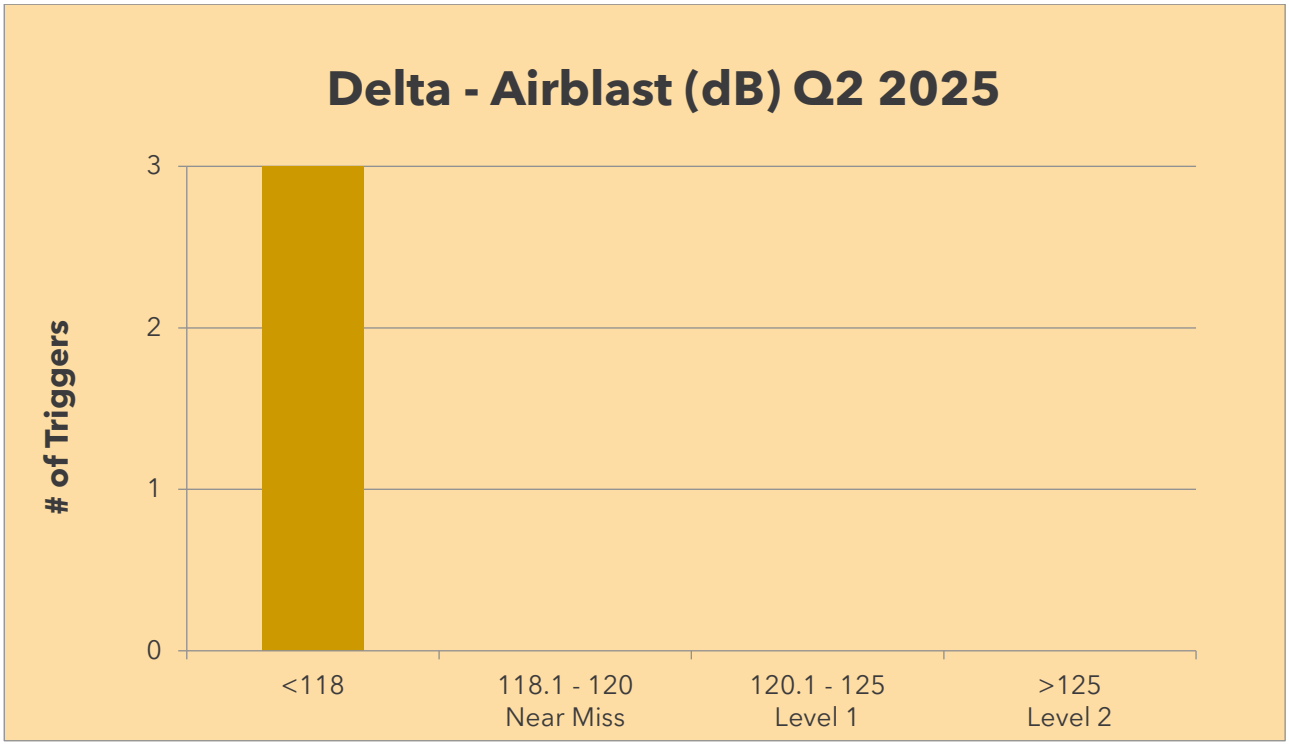

Charlie - Airblast (dB) Q2 2026
# of Triggers
9
8
7
6
5
4
3
2
1
0
≤118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

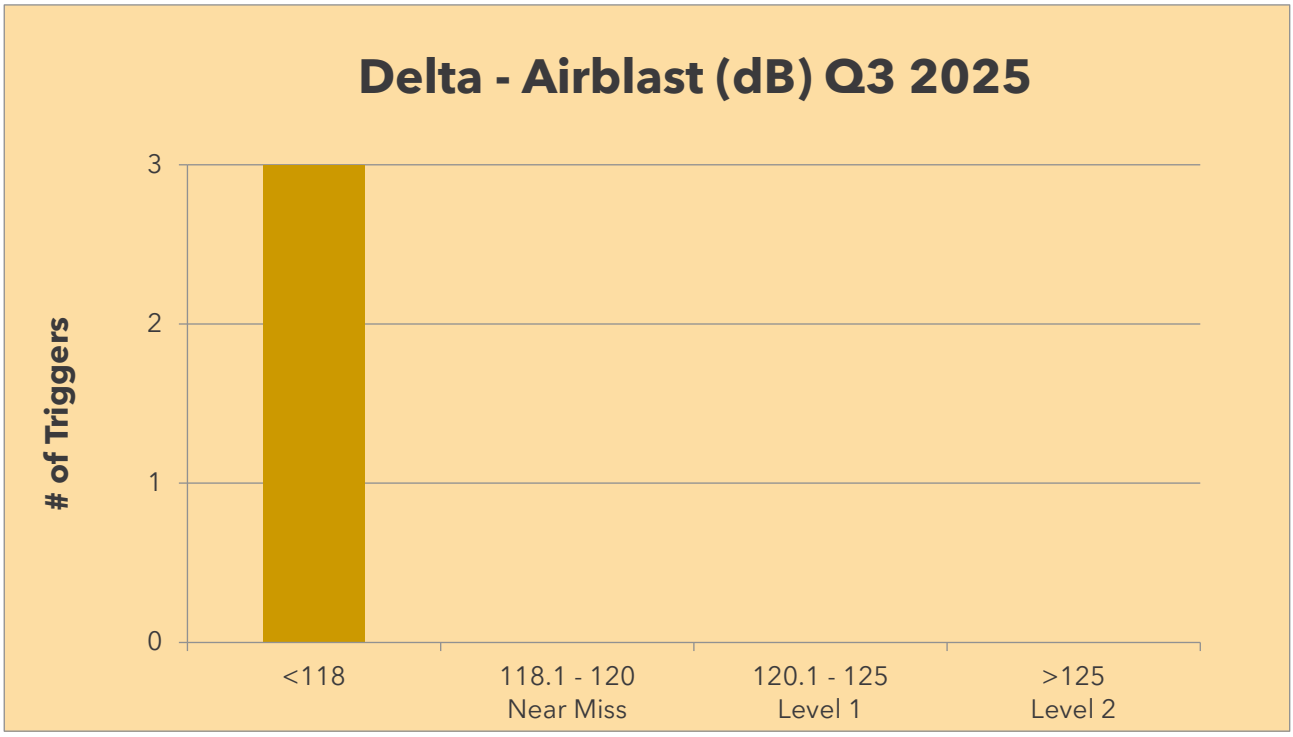

Charlie - Airblast (dB) Q3 2025
# of Triggers
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
≤118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

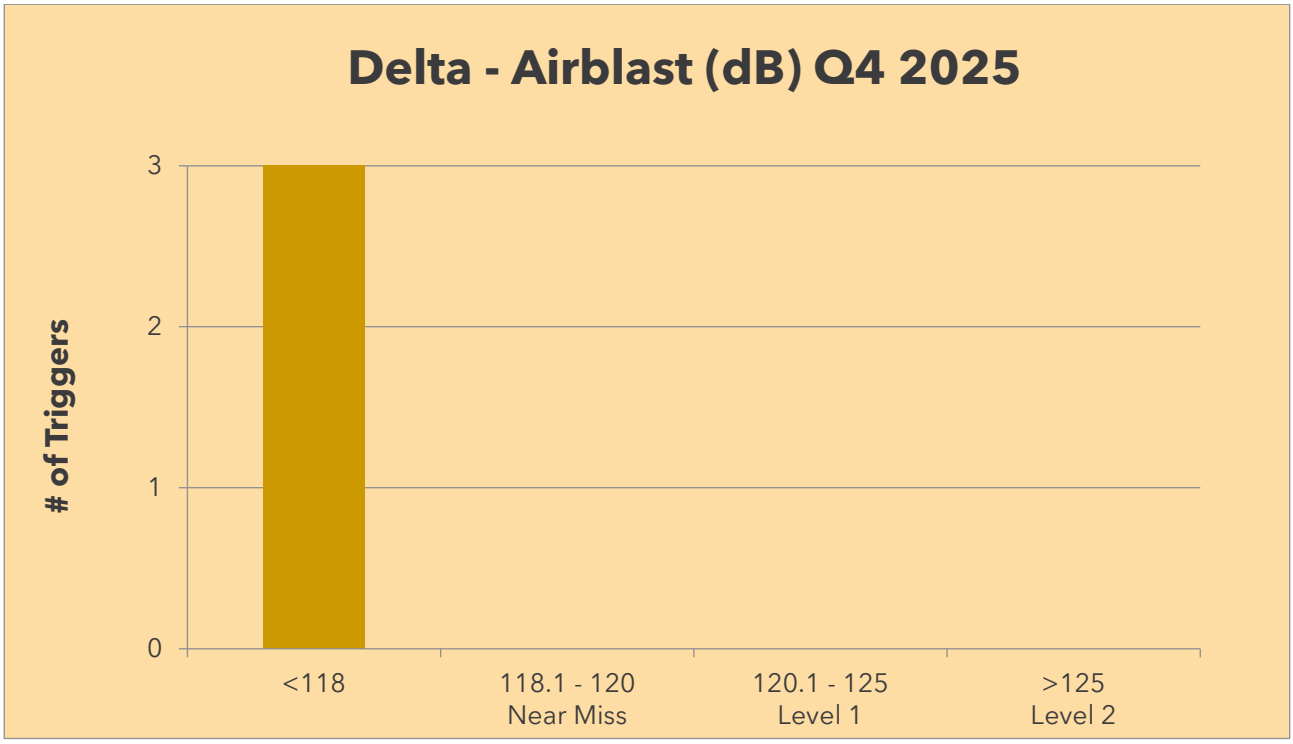

Charlie - Airblast (dB) Q4 2025
# of Triggers
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
≤118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

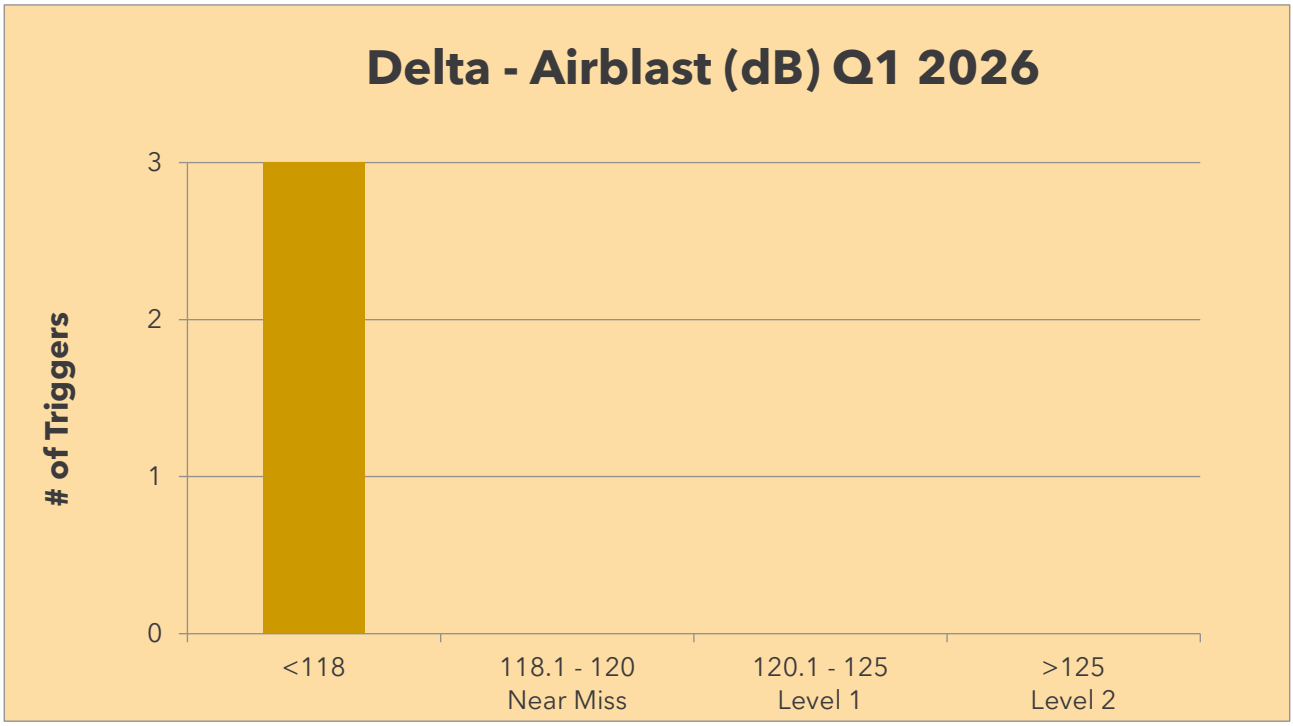

Charlie - Airblast (dB) Q1 2026
# of Triggers
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
≤118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

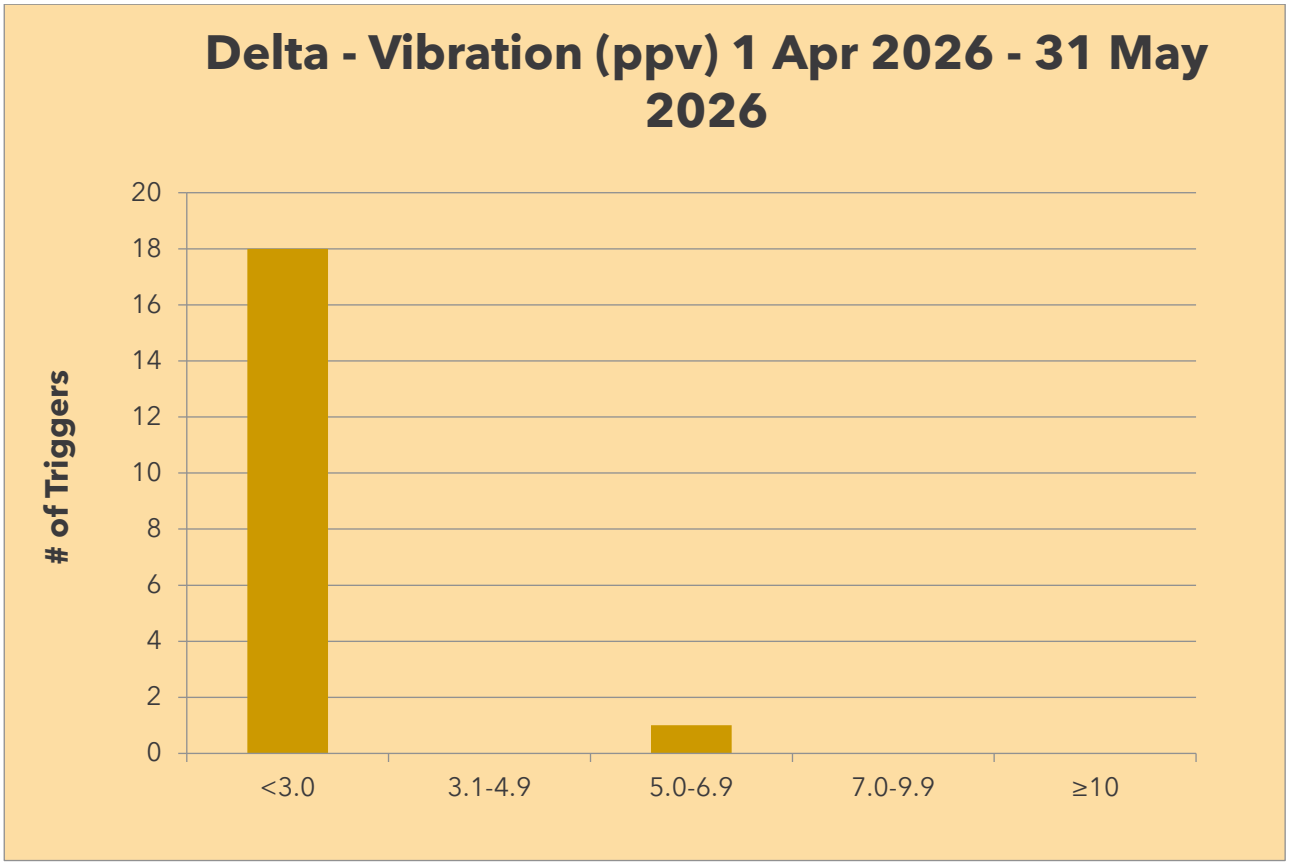

Charlie - Airblast (dB) 1 Apr 2026 - 31 May 2026
# of Triggers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
≤118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

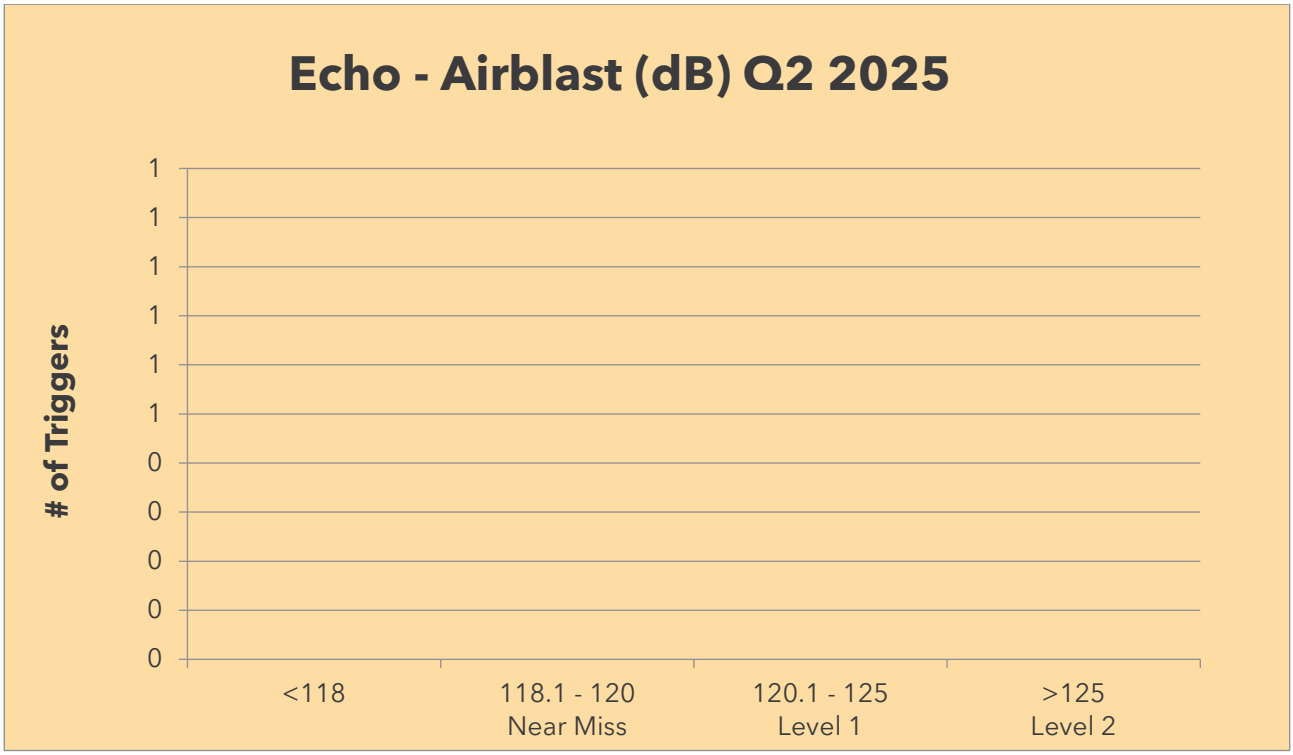

Delta - Airblast (dB) Q2 2025
# of Triggers
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

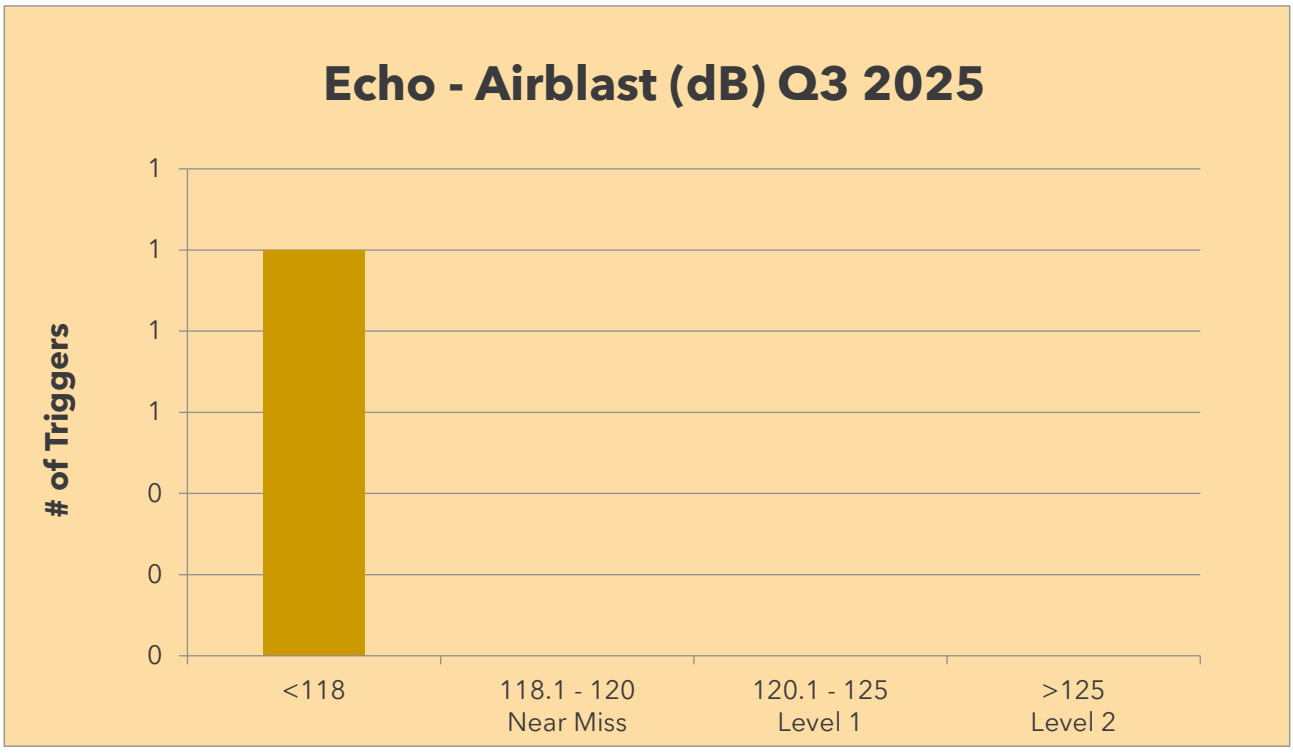

Delta - Airblast (dB) Q3 2025
# of Triggers
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

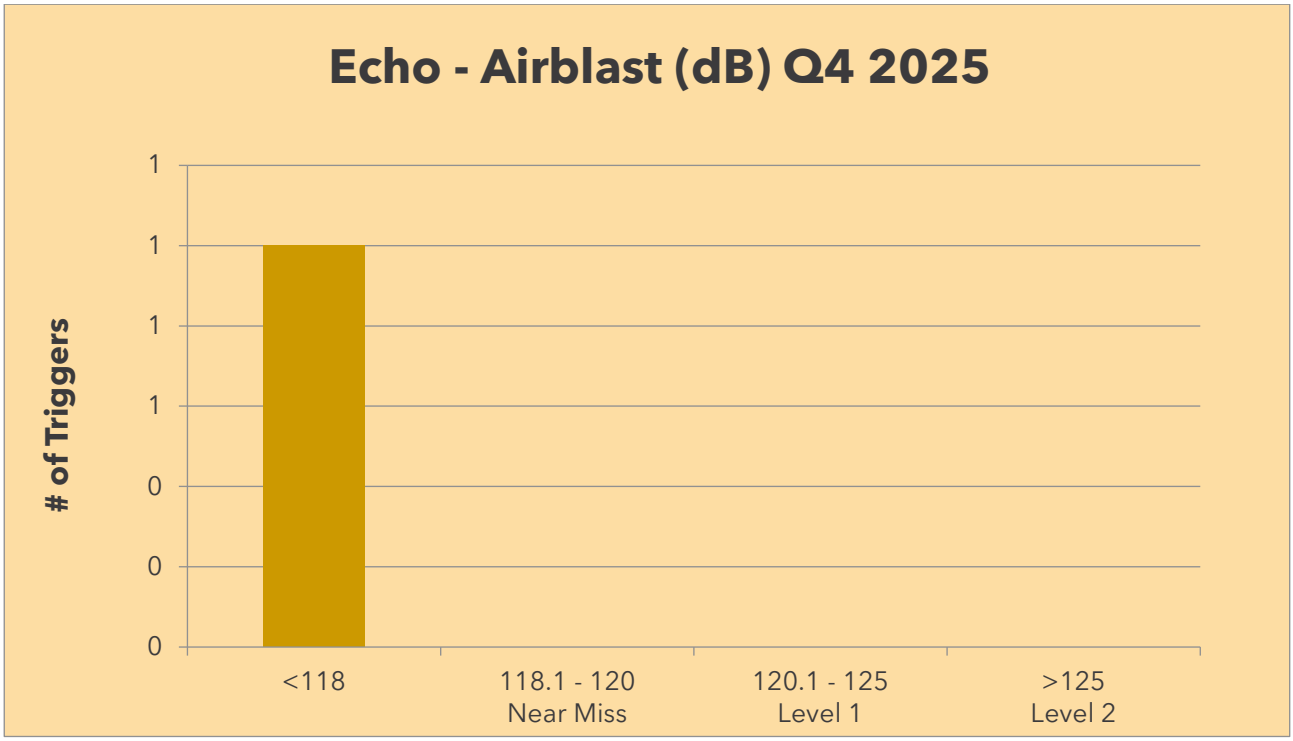

Delta - Airblast (dB) Q4 2025
# of Triggers
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

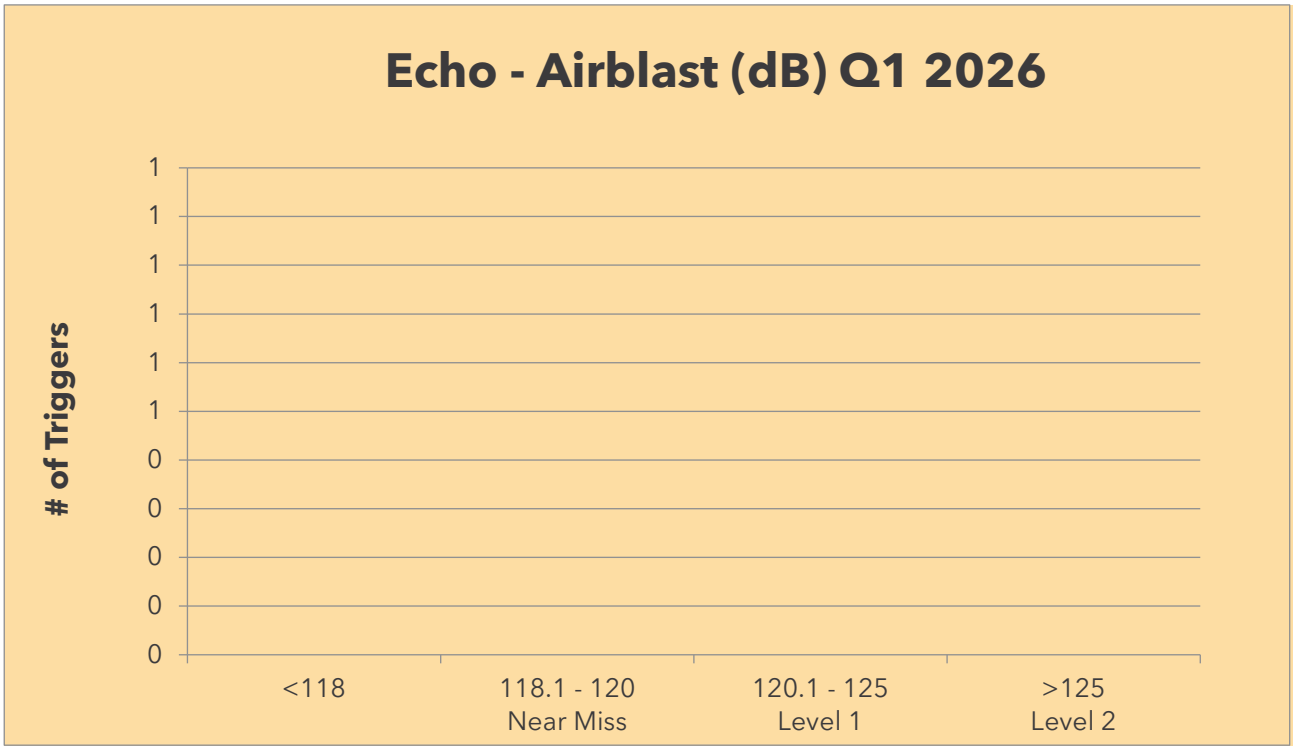

Delta - Airblast (dB) Q1 2026
# of Triggers
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

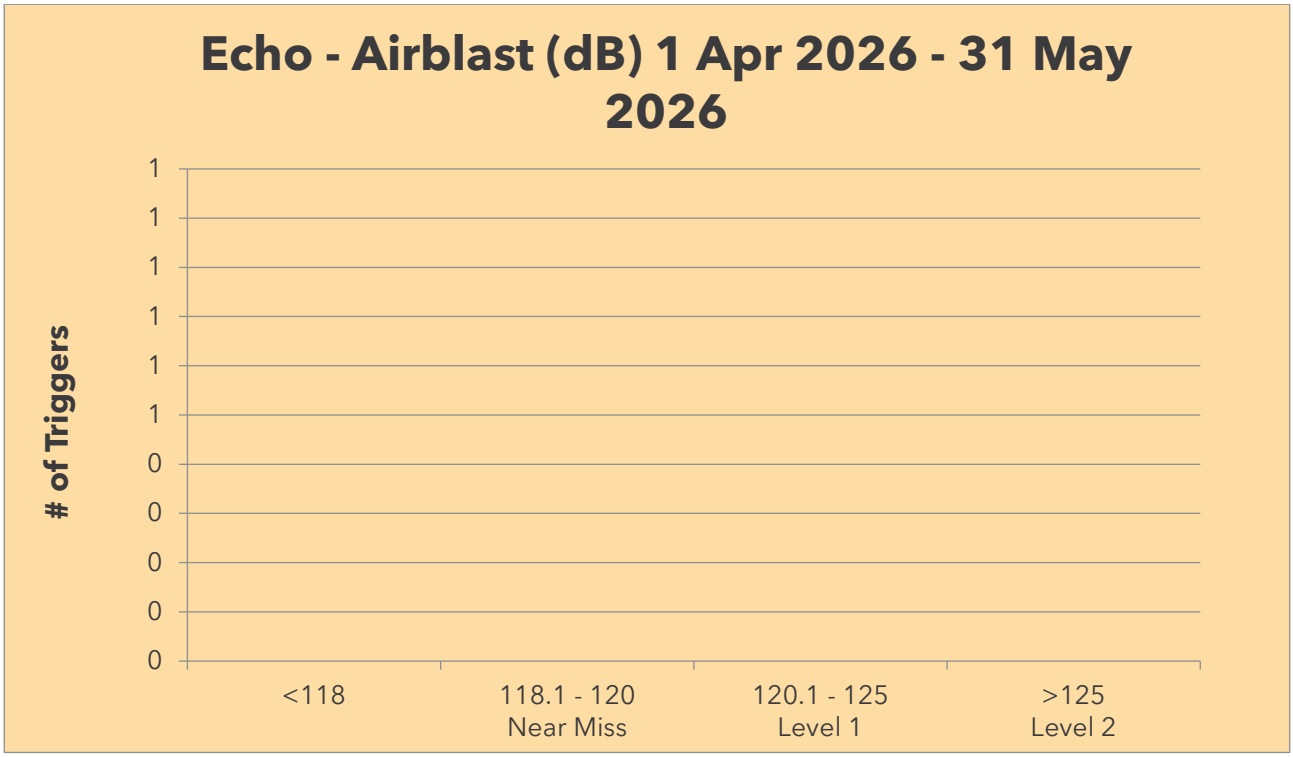

Delta - Vibration (ppv) 1 Apr 2026 - 31 May 2026
# of Triggers
20
18
16
14
12
10
8
6
4
2
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

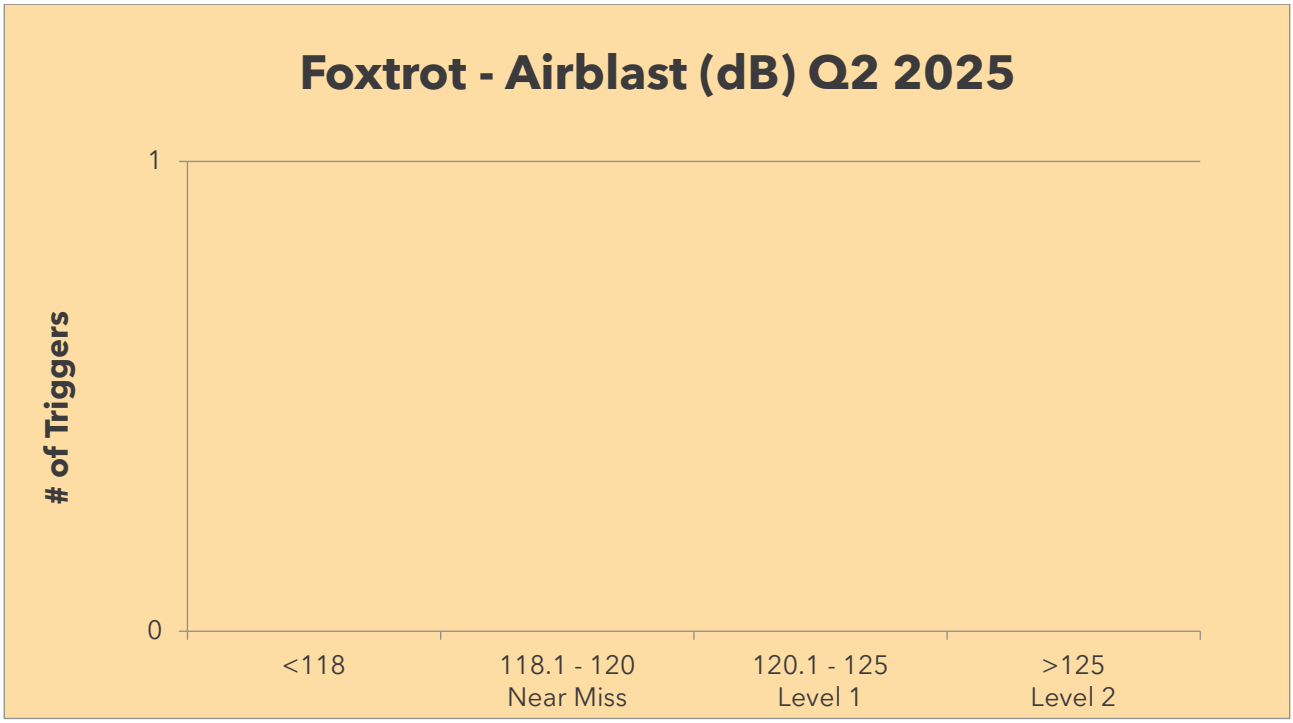

Echo - Airblast (dB) Q2 2025
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

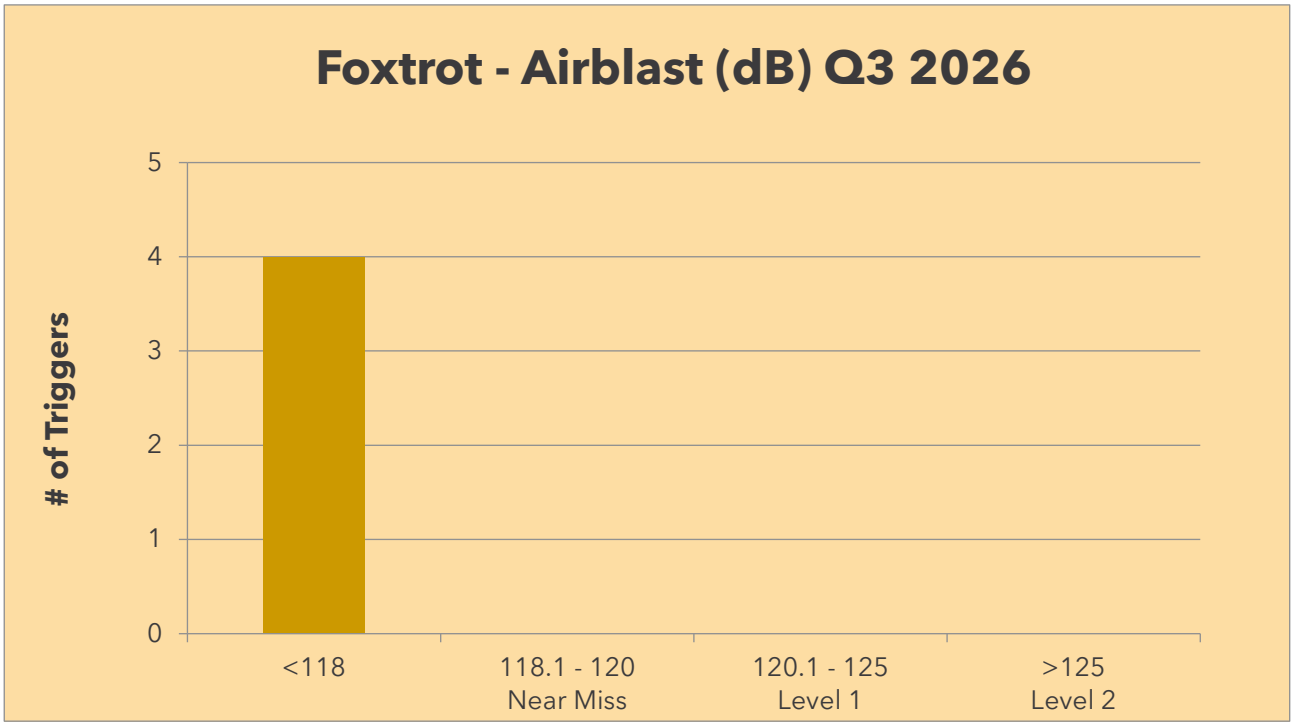

Echo - Airblast (dB) Q3 2025
# of Triggers
1
1
1
1
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

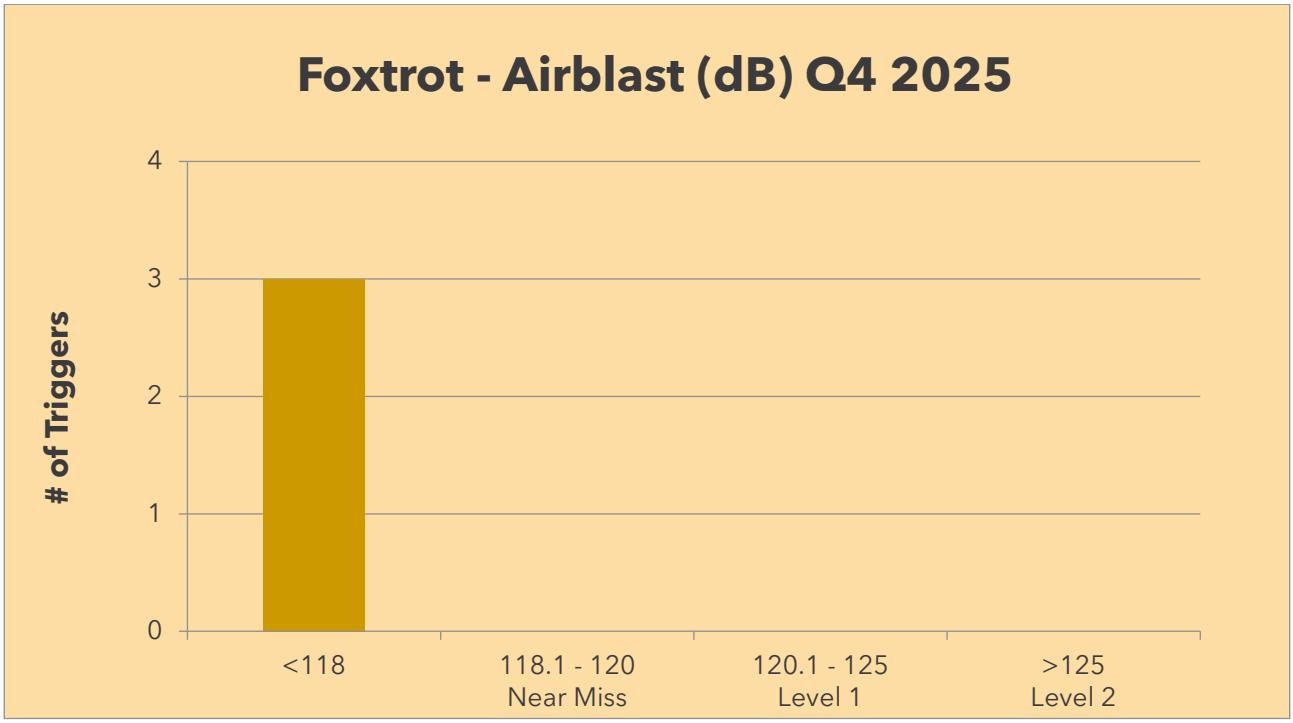

Echo - Airblast (dB) Q4 2025
# of Triggers
1
1
1
1
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

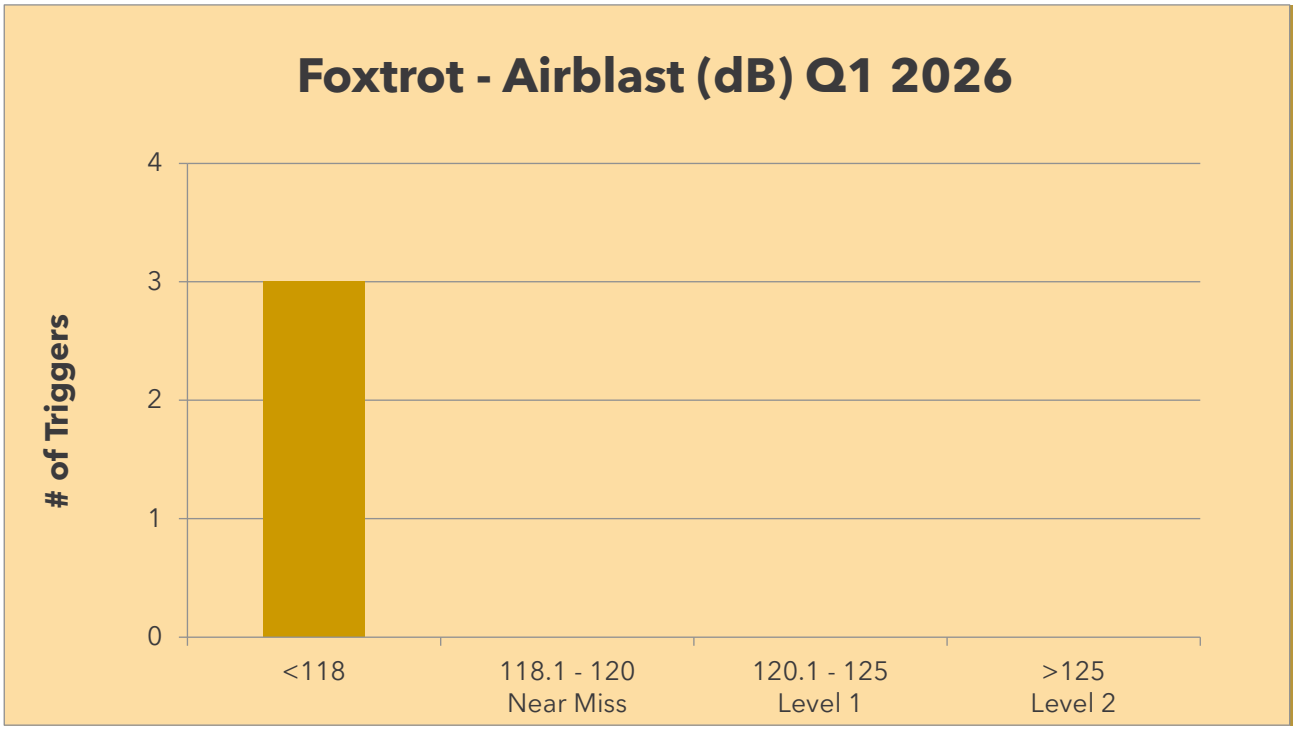

Echo - Airblast (dB) Q1 2026
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

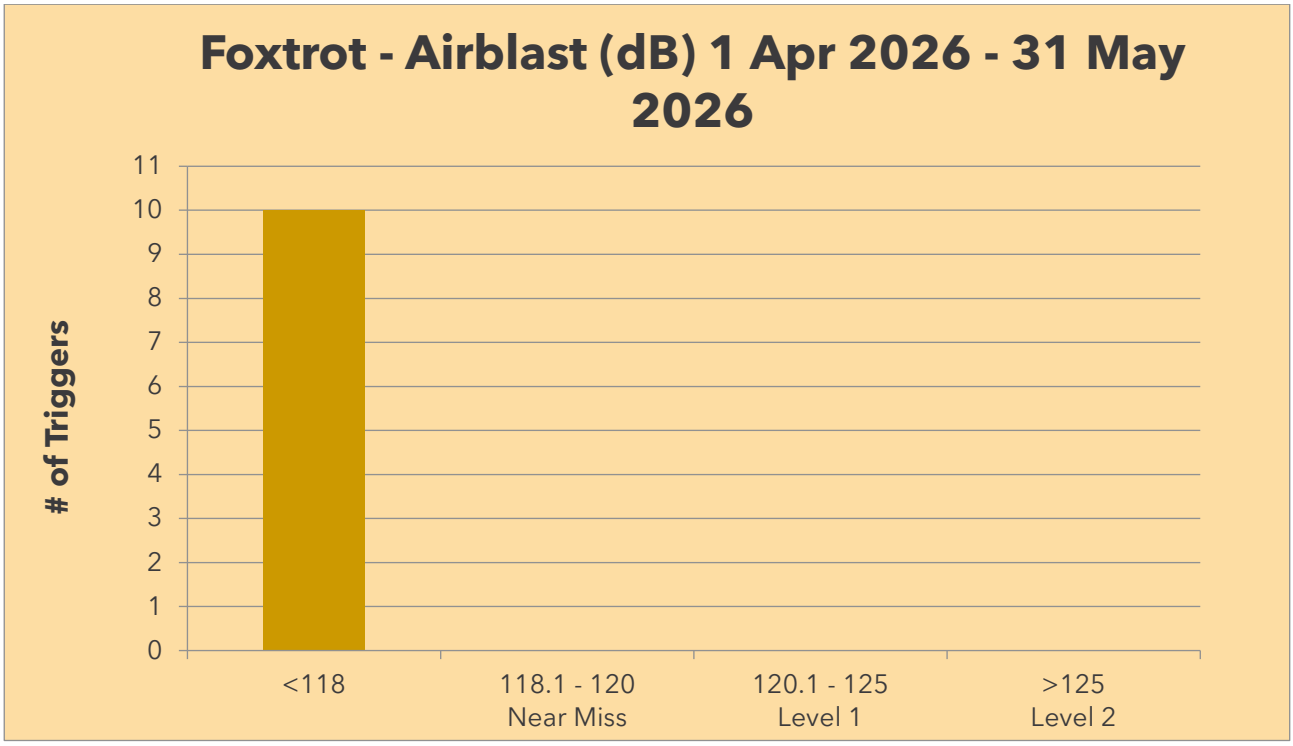

Echo - Airblast (dB) 1 Apr 2026 - 31 May 2026
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2


Foxtrot - Airblast (dB) Q2 2025
# of Triggers
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

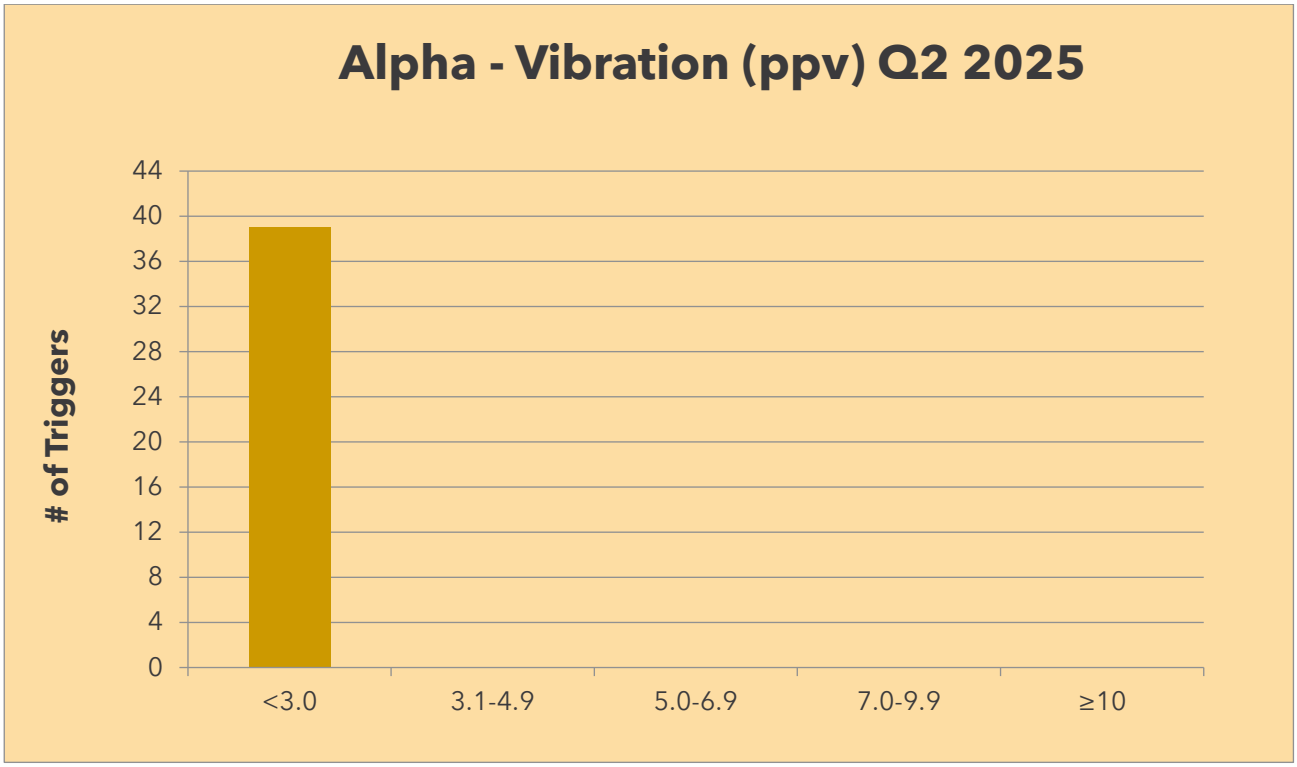

Foxtrot - Airblast (dB) Q3 2026
# of Triggers
5
4
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

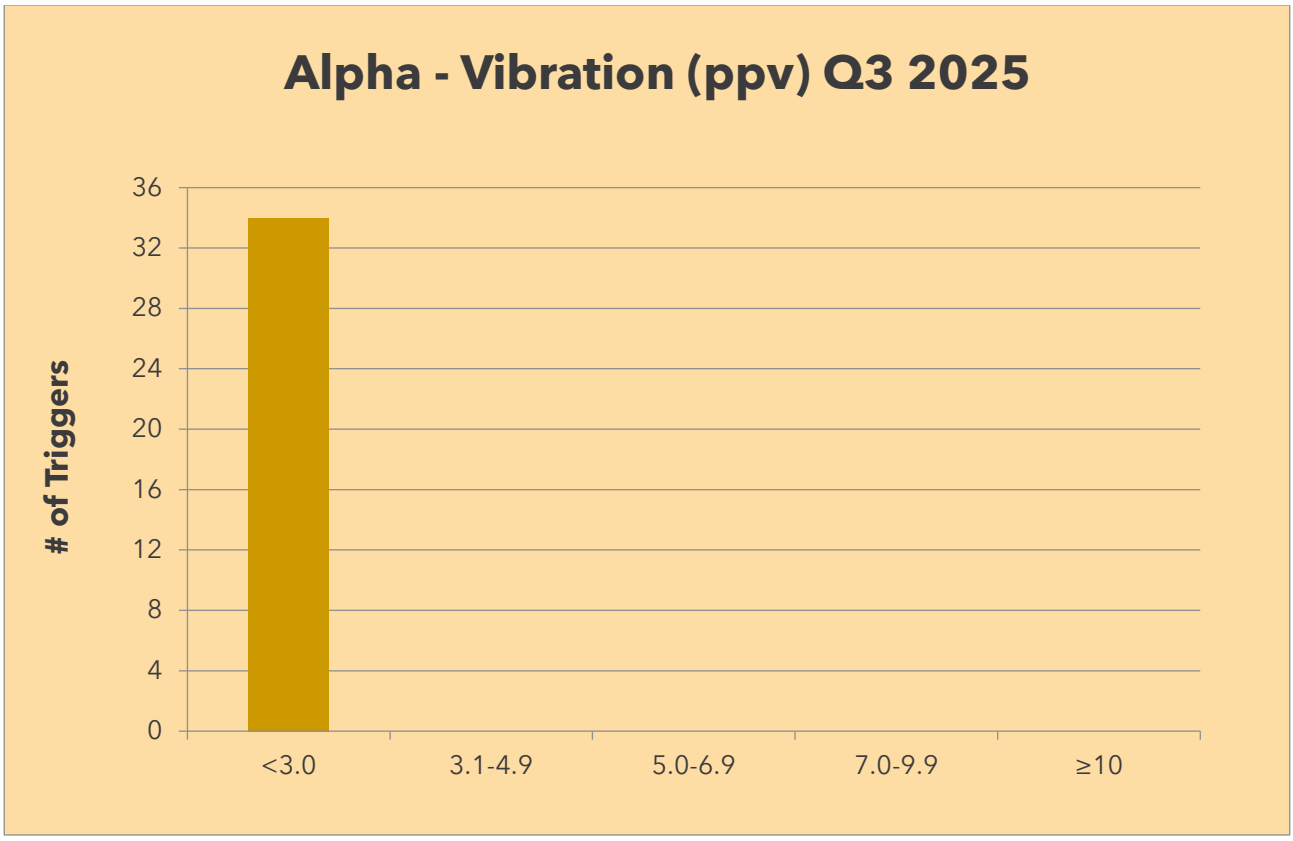

Foxtrot - Airblast (dB) Q4 2025
# of Triggers
4
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

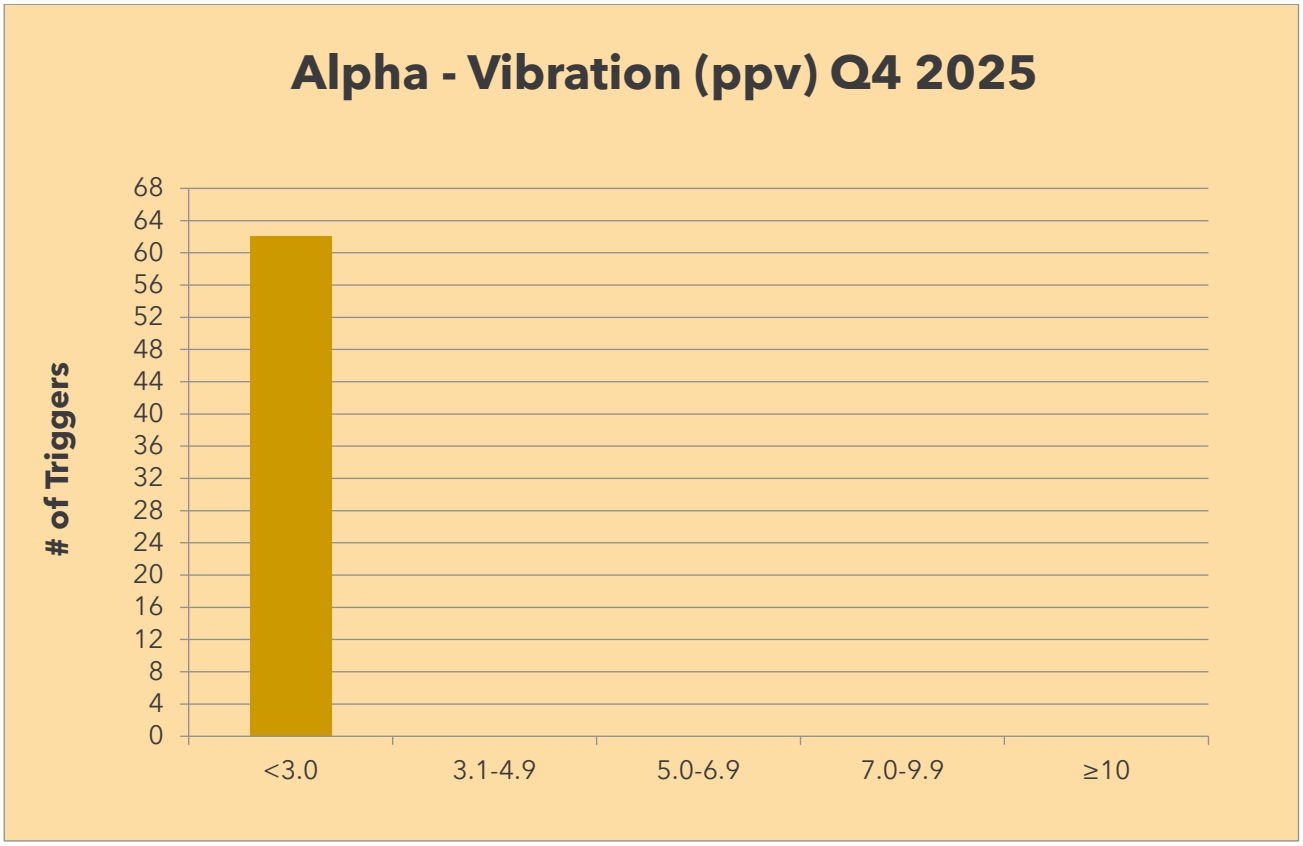

Foxtrot - Airblast (dB) Q1 2026
# of Triggers
4
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

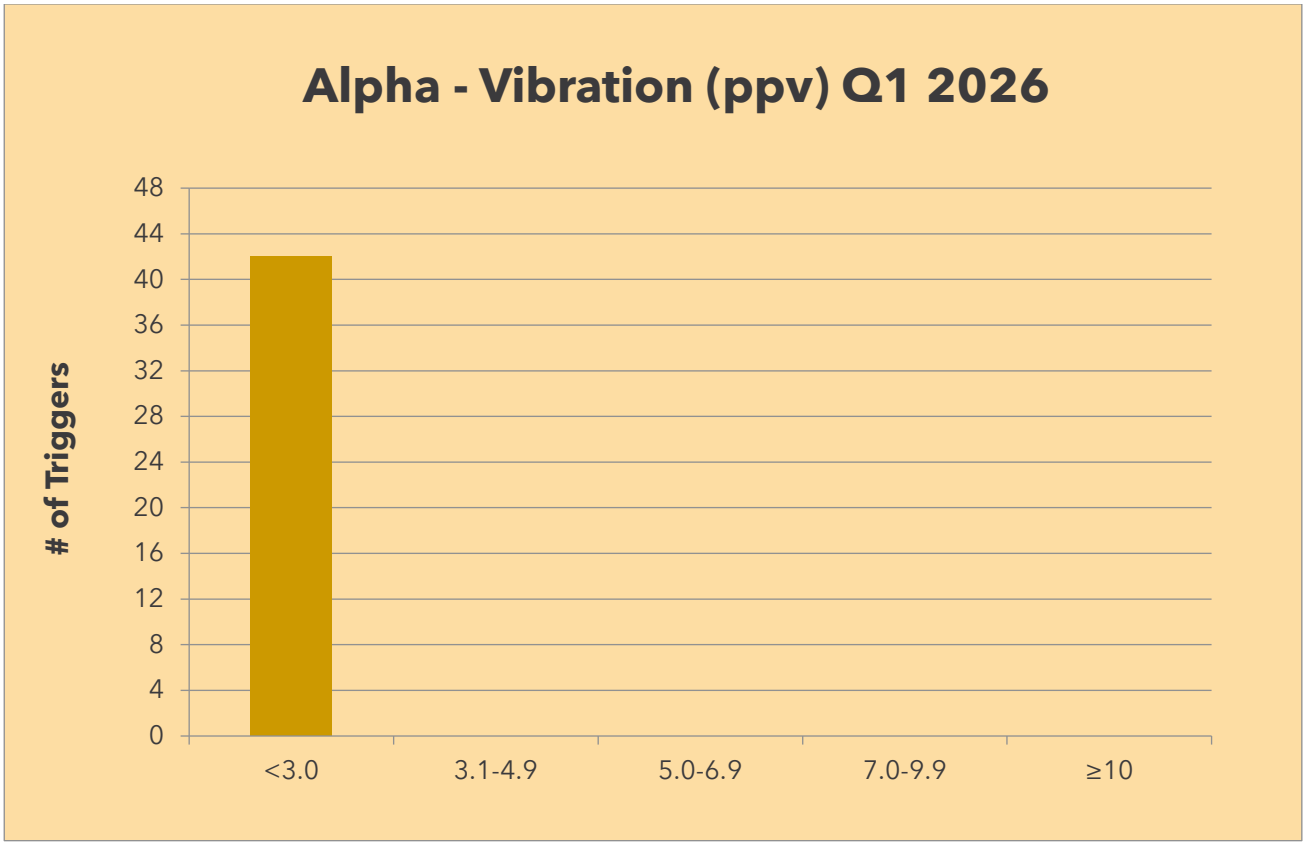

Foxtrot - Airblast (dB) 1 Apr 2026 - 31 May 2026
# of Triggers
11
10
9
8
7
6
5
4
3
2
1
0
<118
118.1 - 120
Near Miss
120.1 - 125
Level 1
>125
Level 2

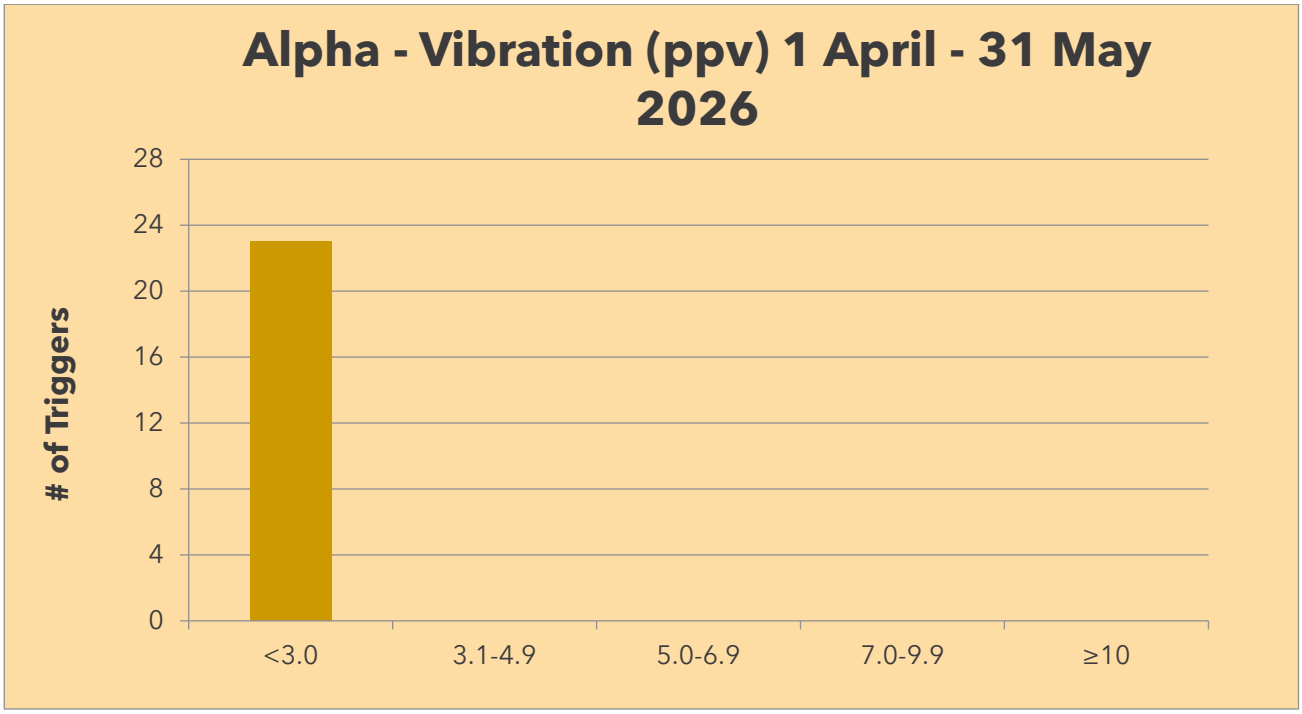
APPENDIX 4: Vibration Histograms

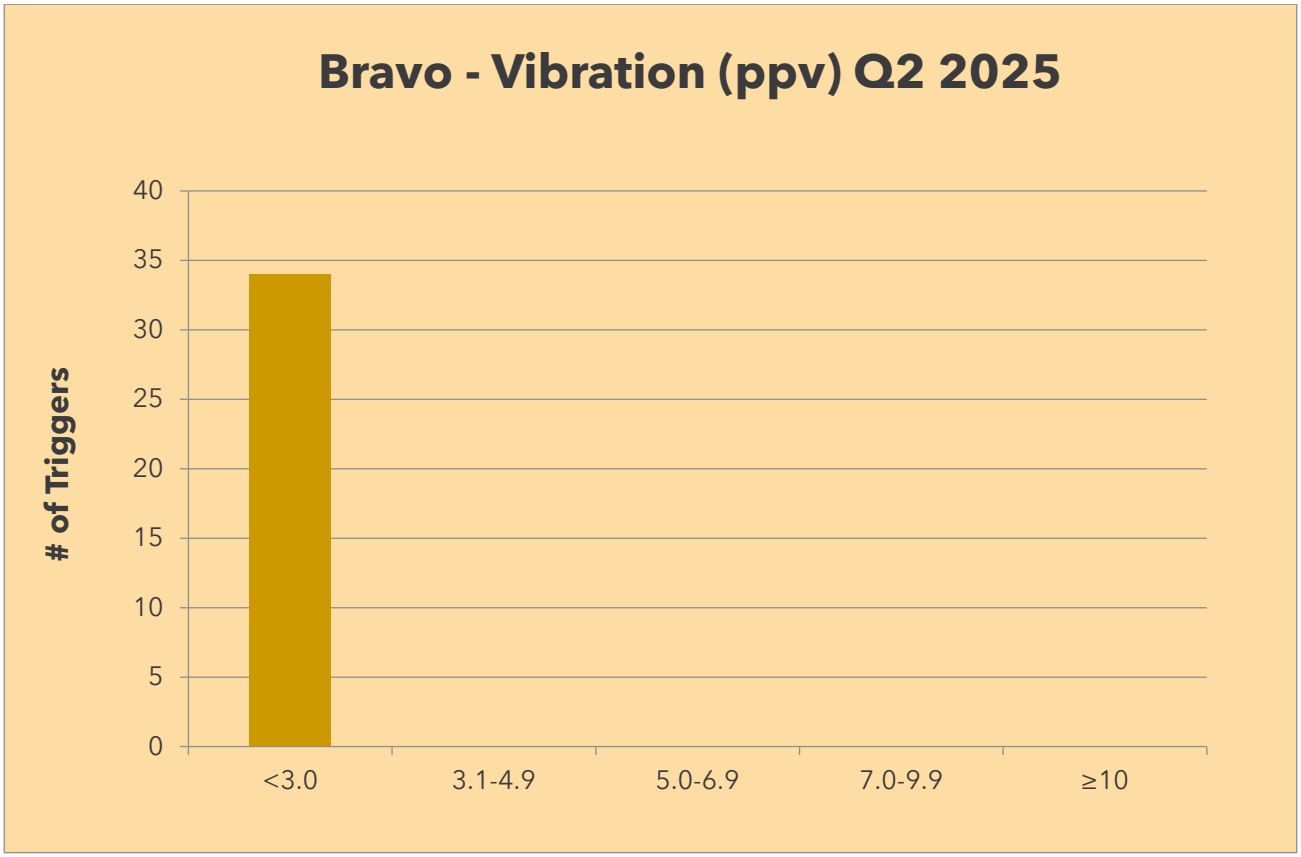

Alpha - Vibration (ppv) Q2 2025
# of Triggers
44
40
36
32
28
24
20
16
12
8
4
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

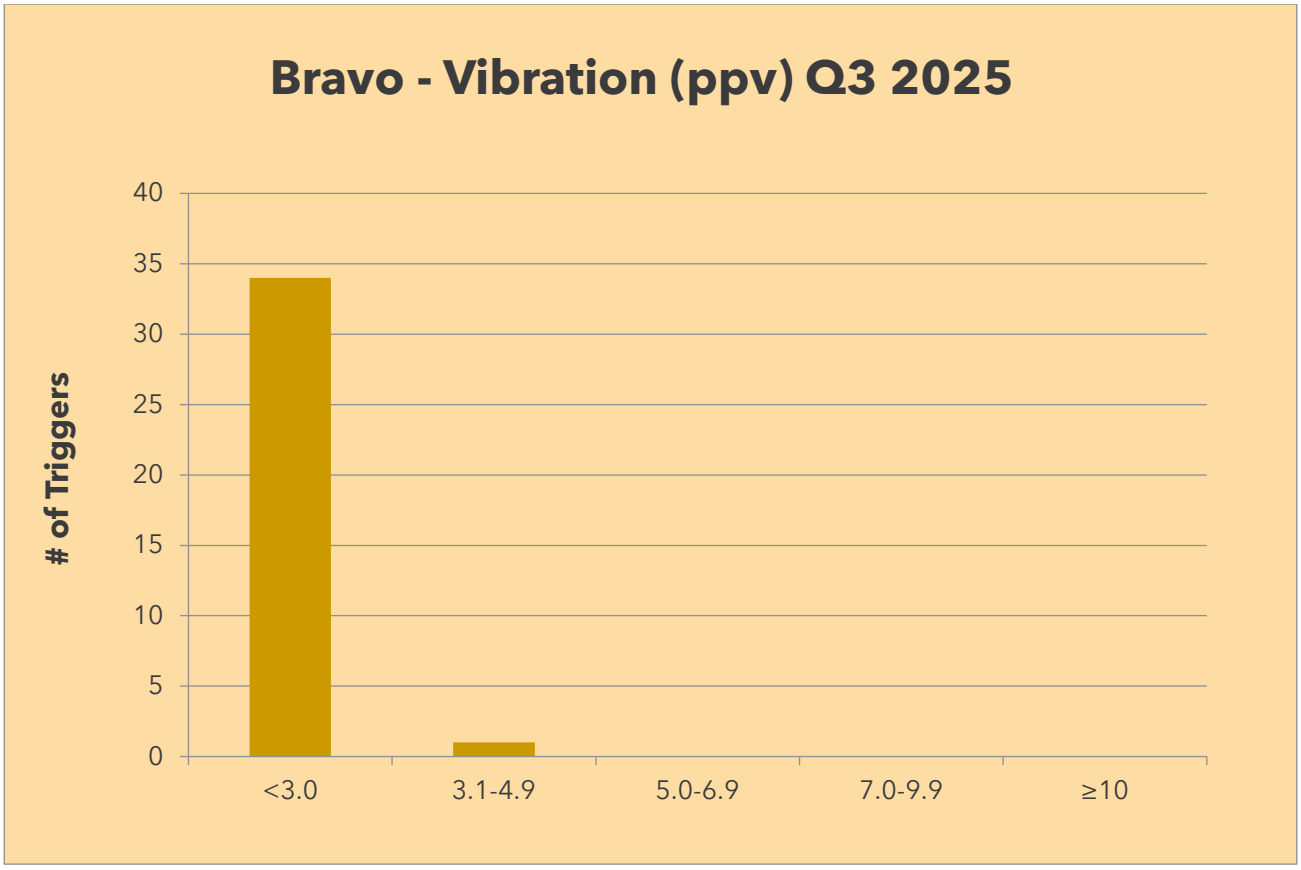

Alpha - Vibration (ppv) Q3 2025
# of Triggers
36
32
28
24
20
16
12
8
4
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

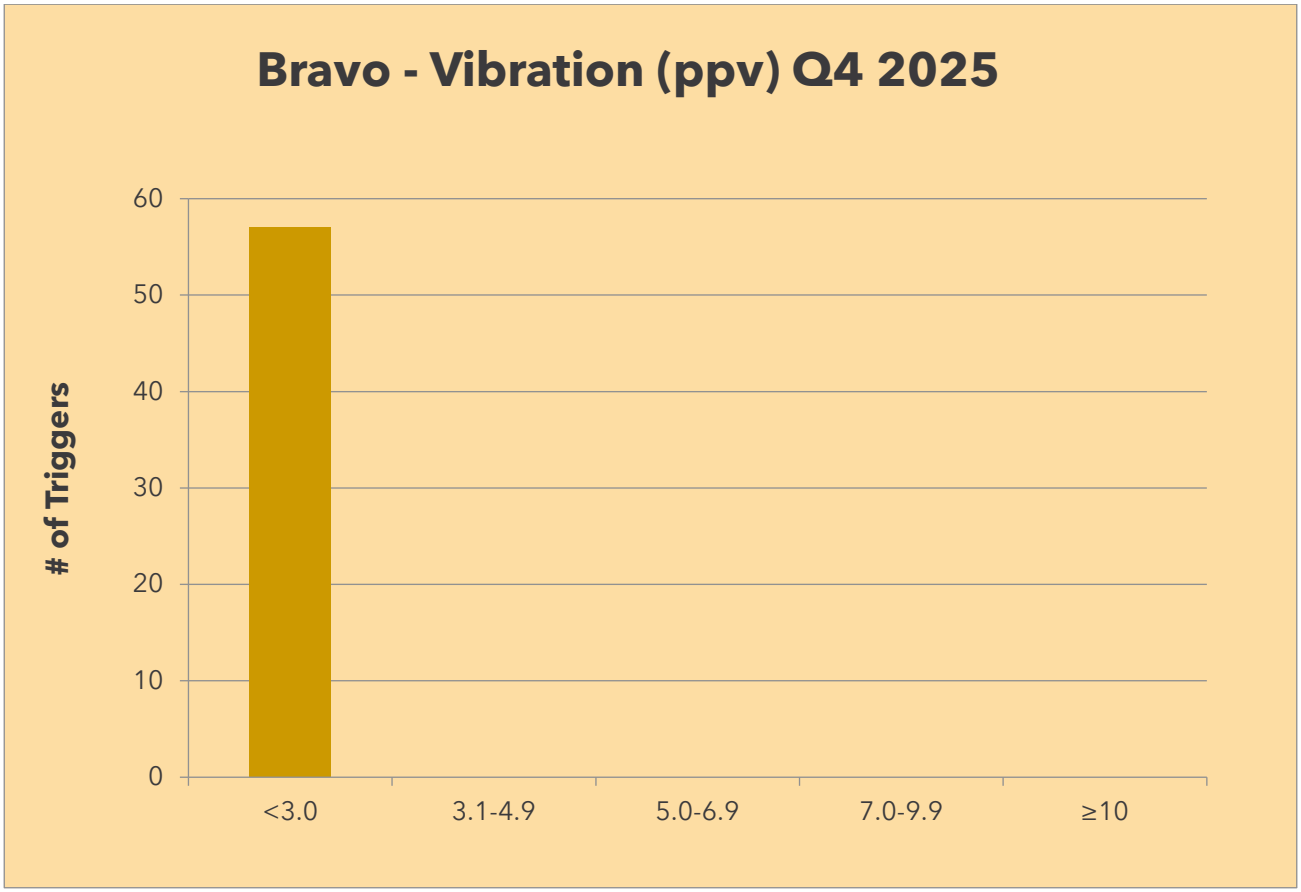

Alpha - Vibration (ppv) Q4 2025
# of Triggers
68
64
60
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

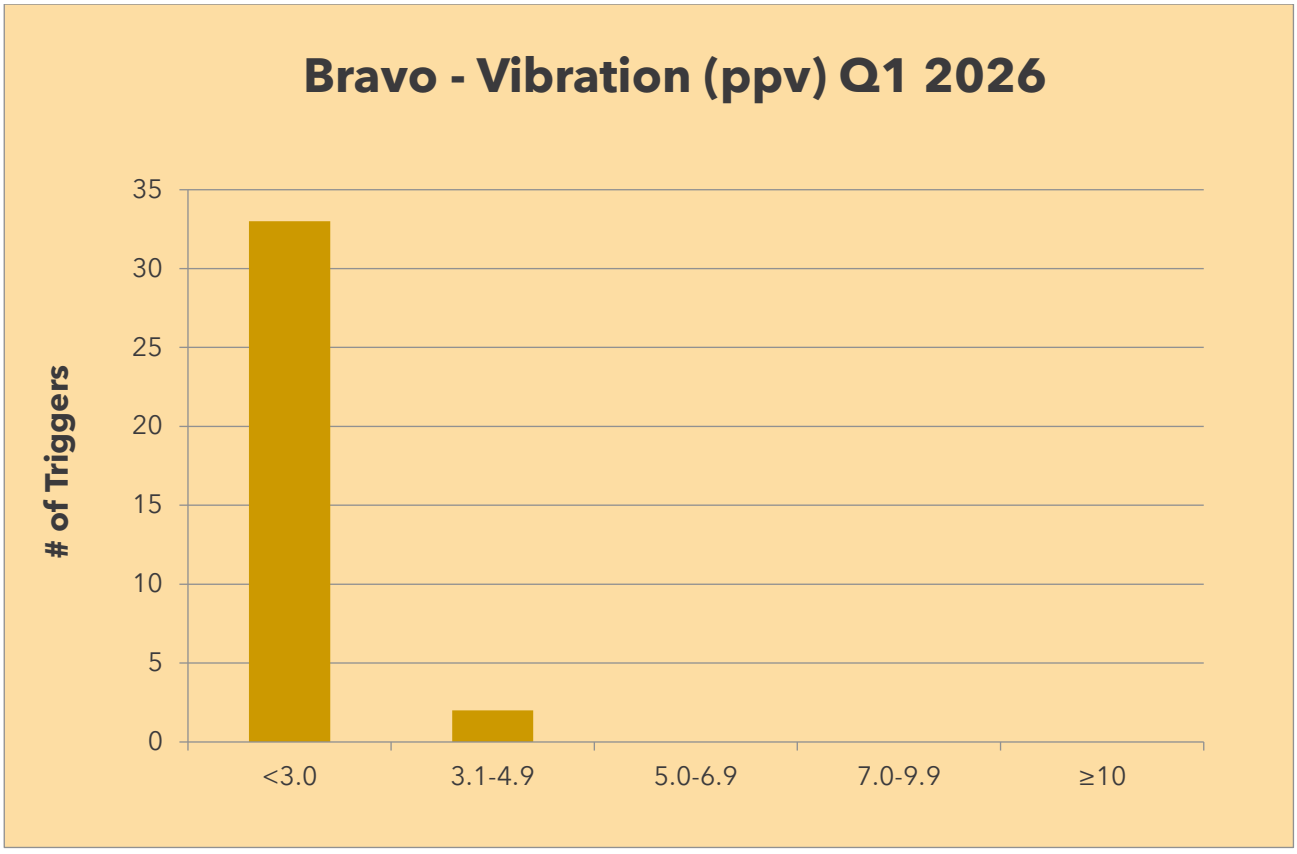

Alpha - Vibration (ppv) Q1 2026
# of Triggers
48
44
40
36
32
28
24
20
16
12
8
4
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

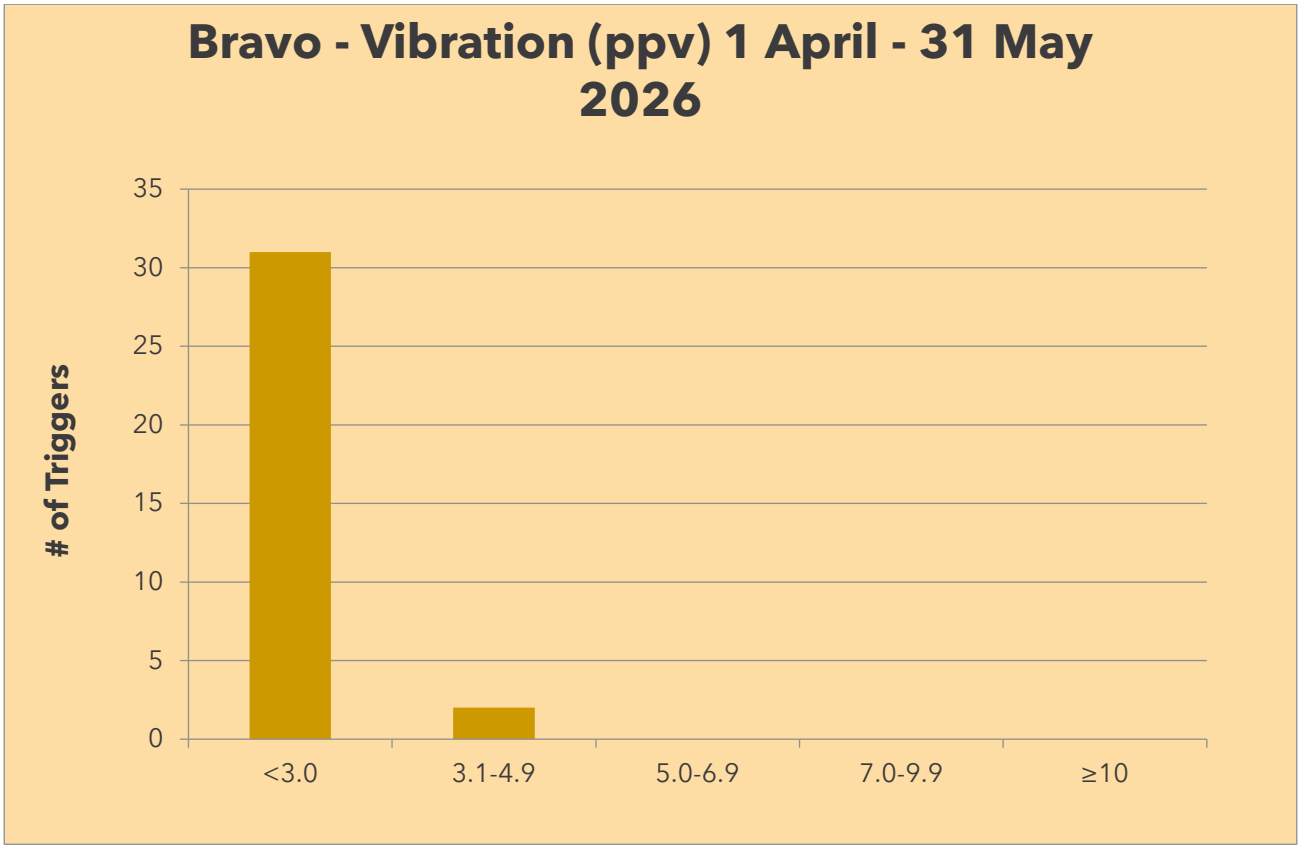

Alpha - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
28
24
20
16
12
8
4
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

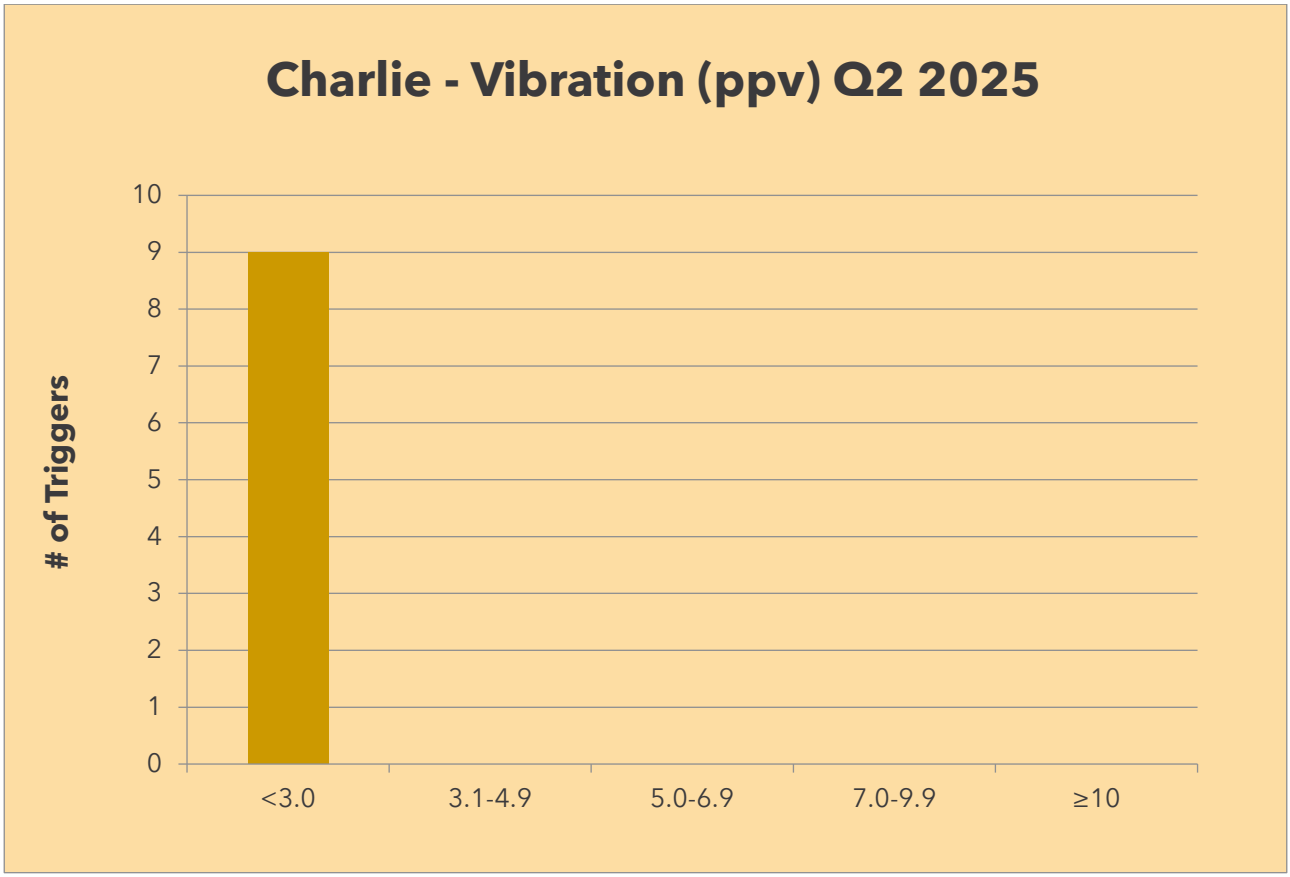

Bravo - Vibration (ppv) Q2 2025
# of Triggers
40
35
30
25
20
15
10
5
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

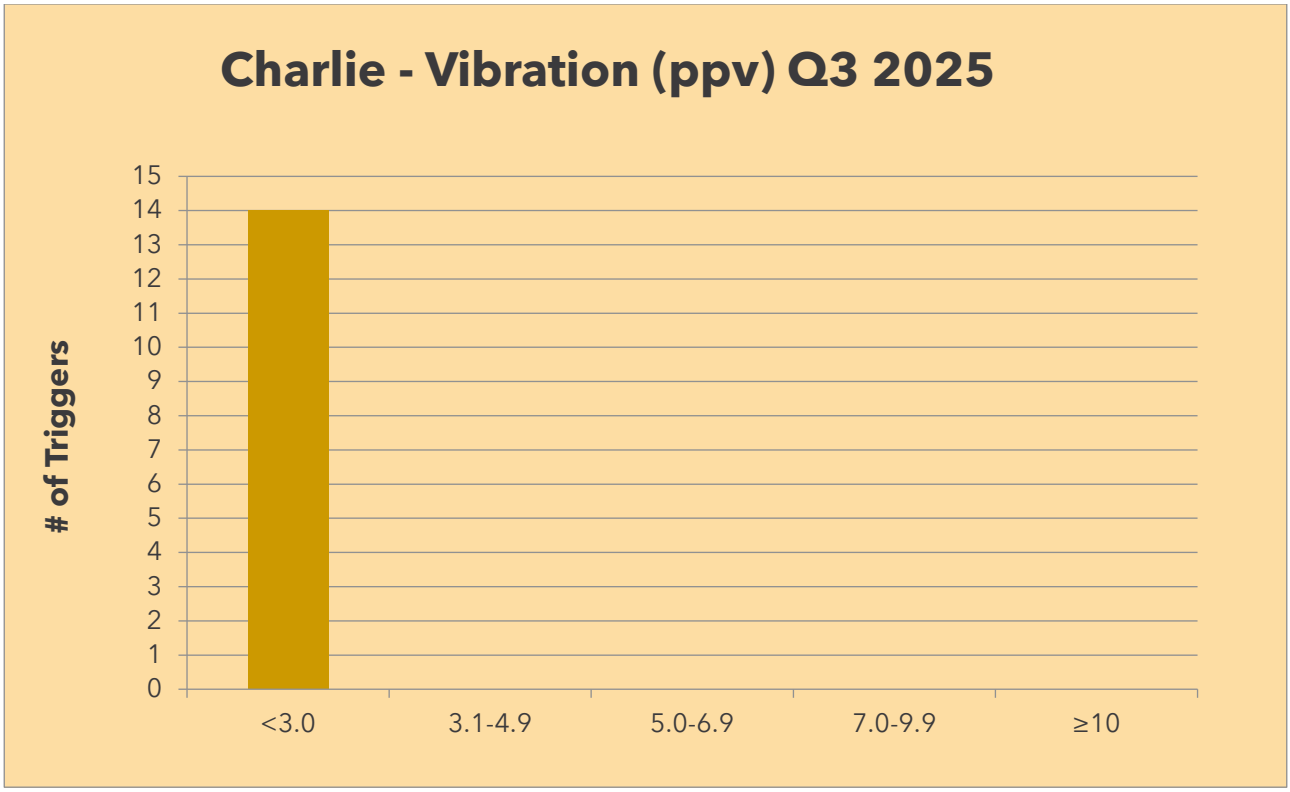

Bravo - Vibration (ppv) Q3 2025
# of Triggers
40
35
30
25
20
15
10
5
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

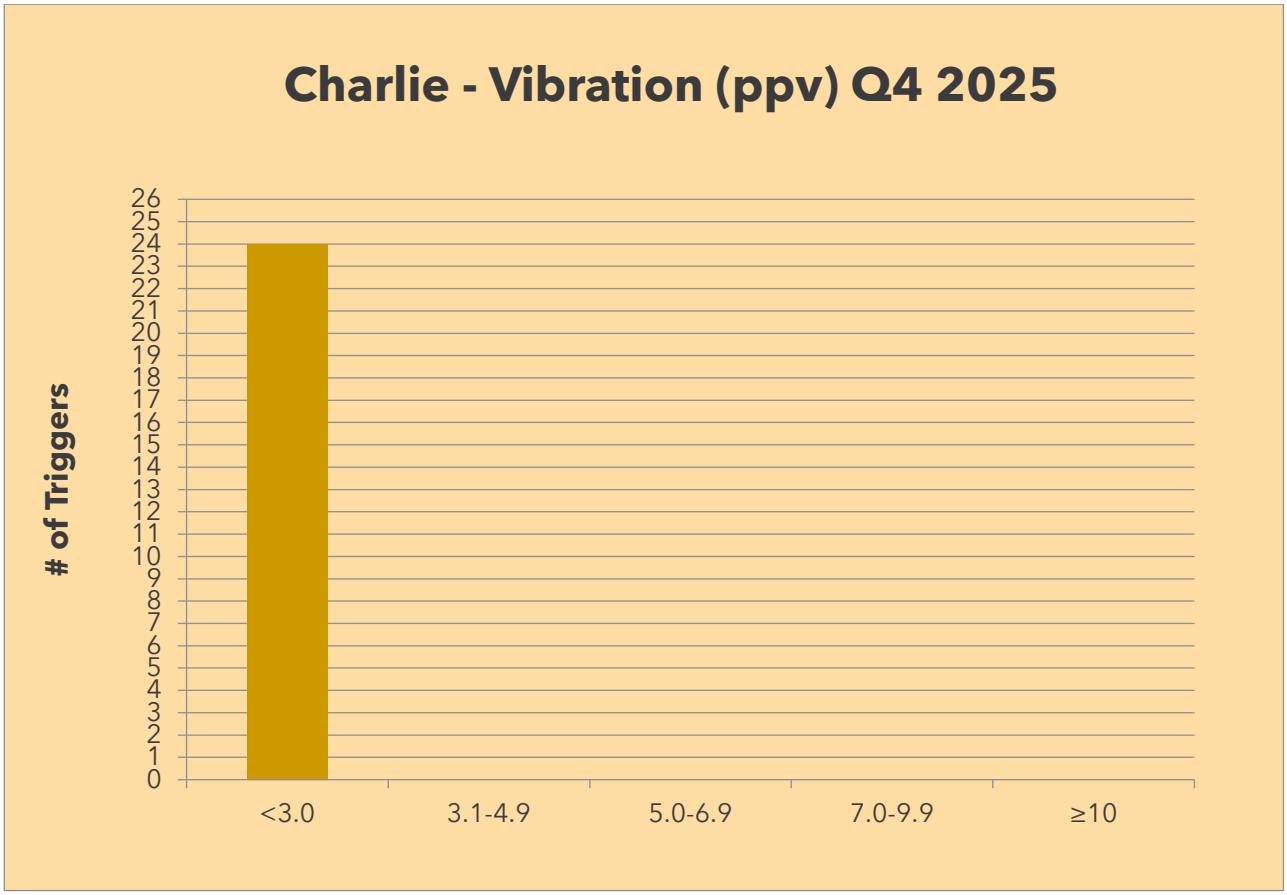

Bravo - Vibration (ppv) Q4 2025
# of Triggers
60
50
40
30
20
10
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

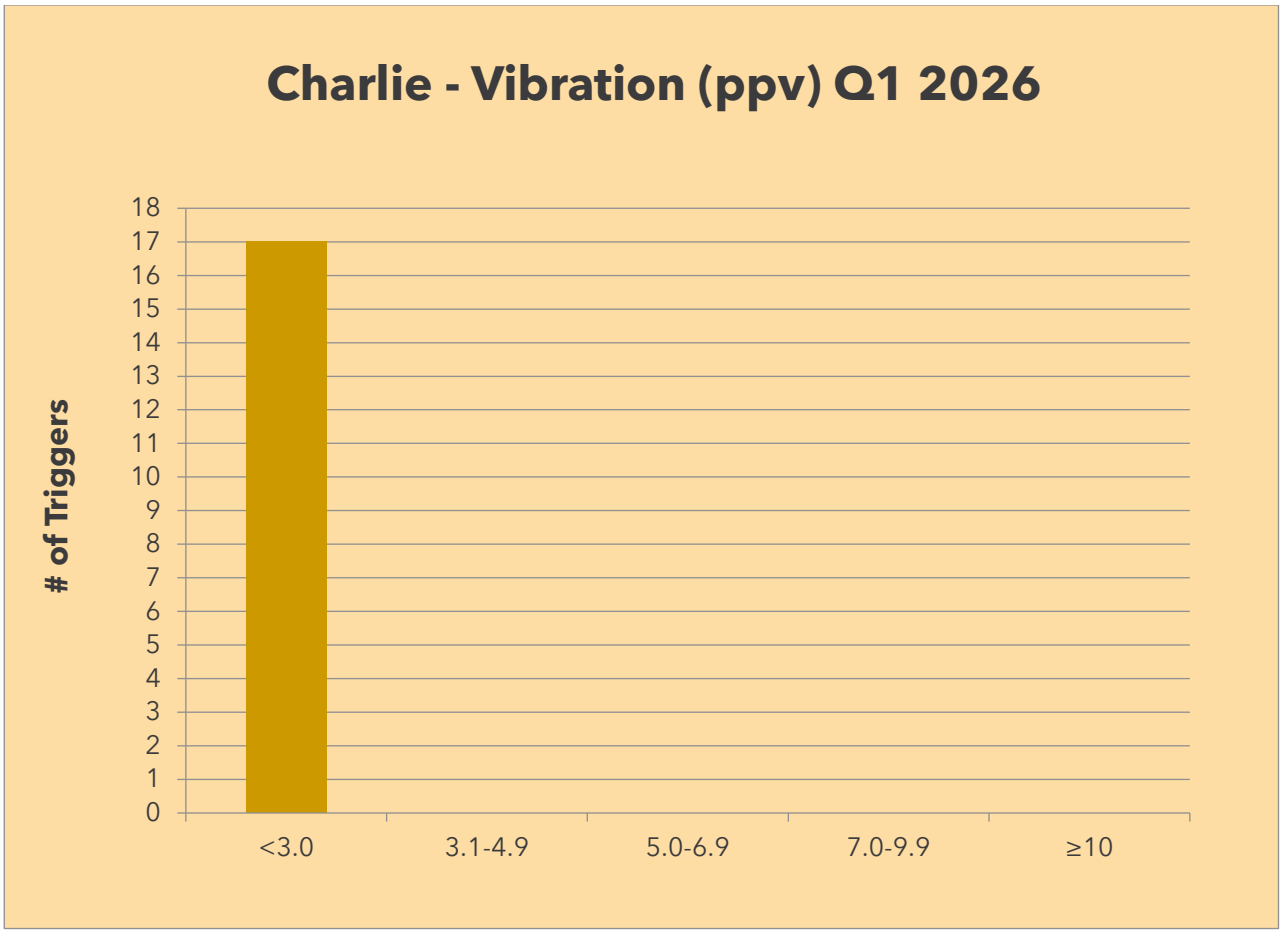

Bravo - Vibration (ppv) Q1 2026
# of Triggers
35
30
25
20
15
10
5
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

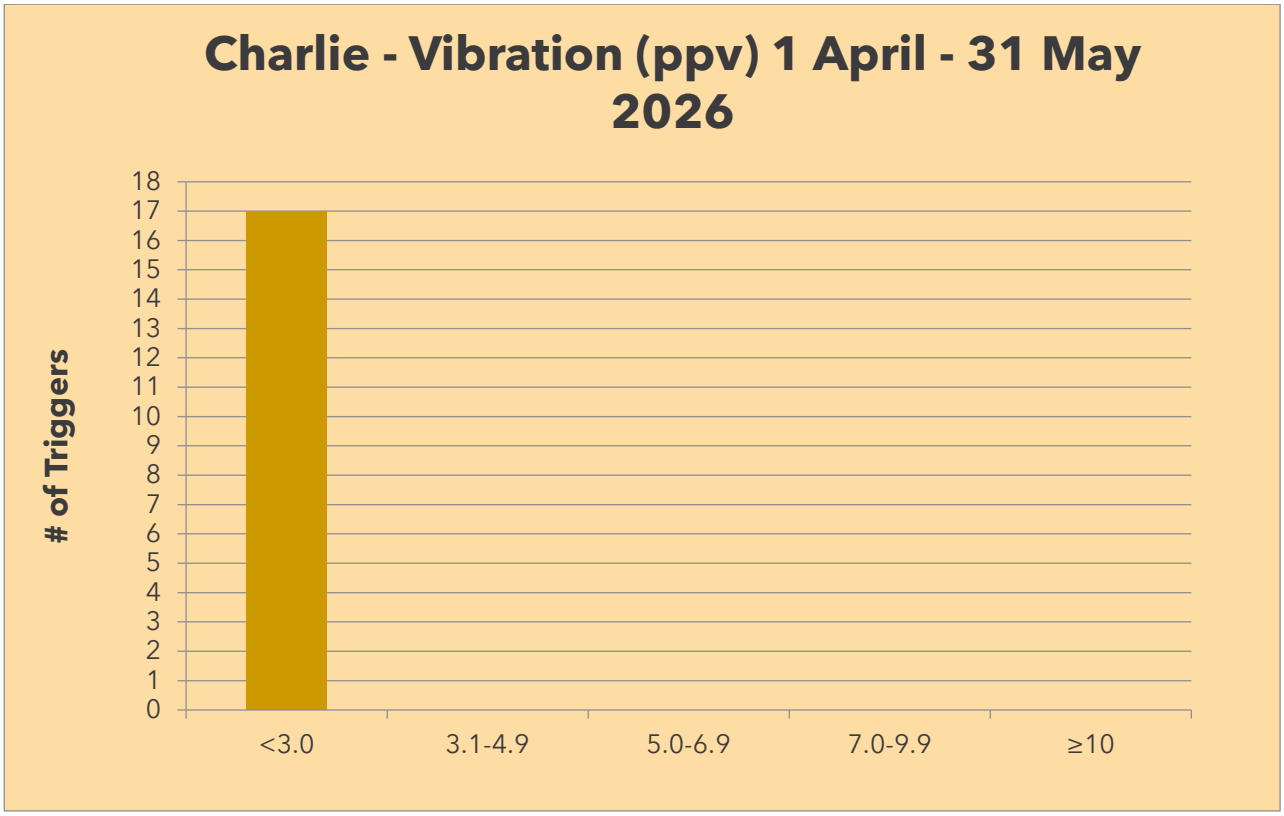

Bravo - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
35
30
25
20
15
10
5
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

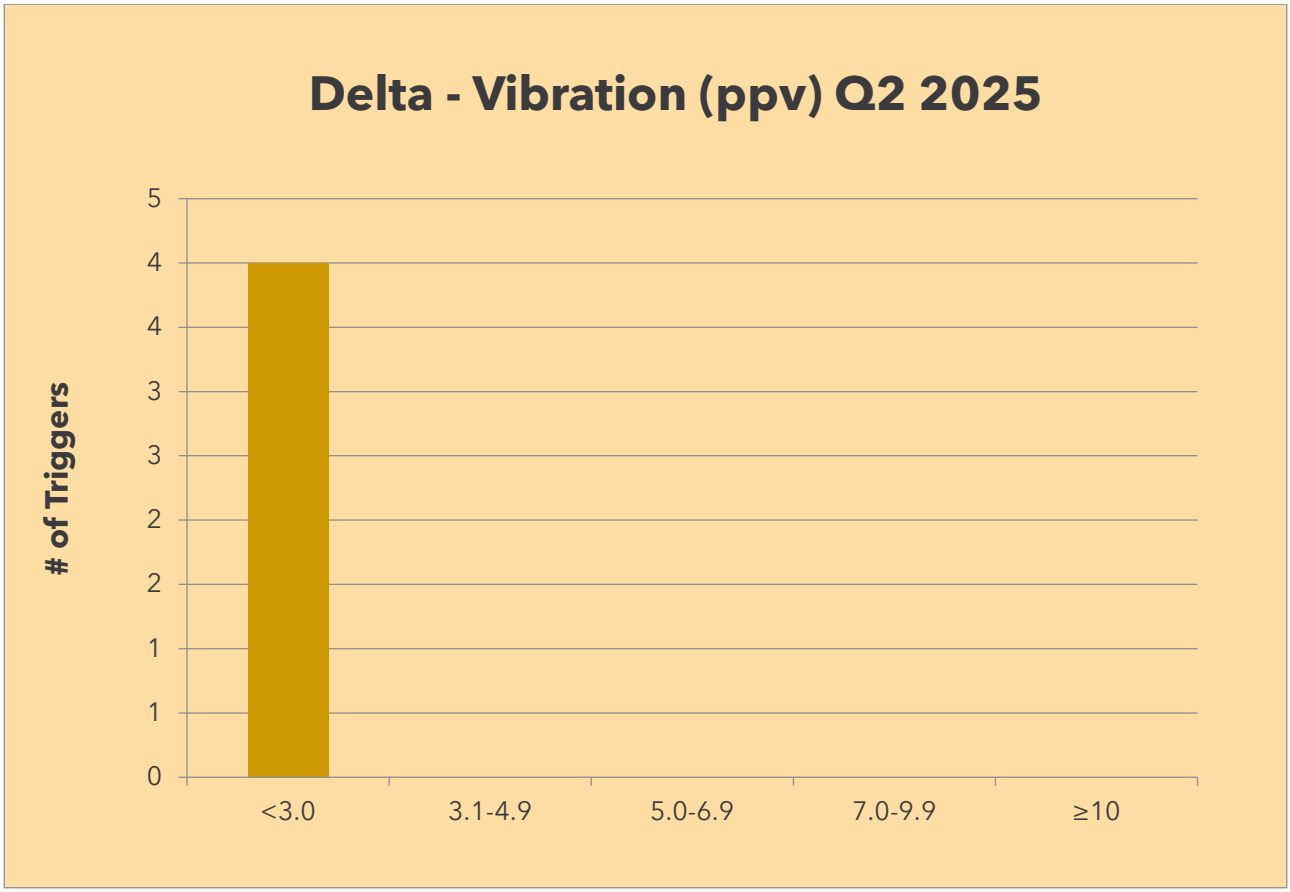

Charlie - Vibration (ppv) Q2 2025
# of Triggers
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

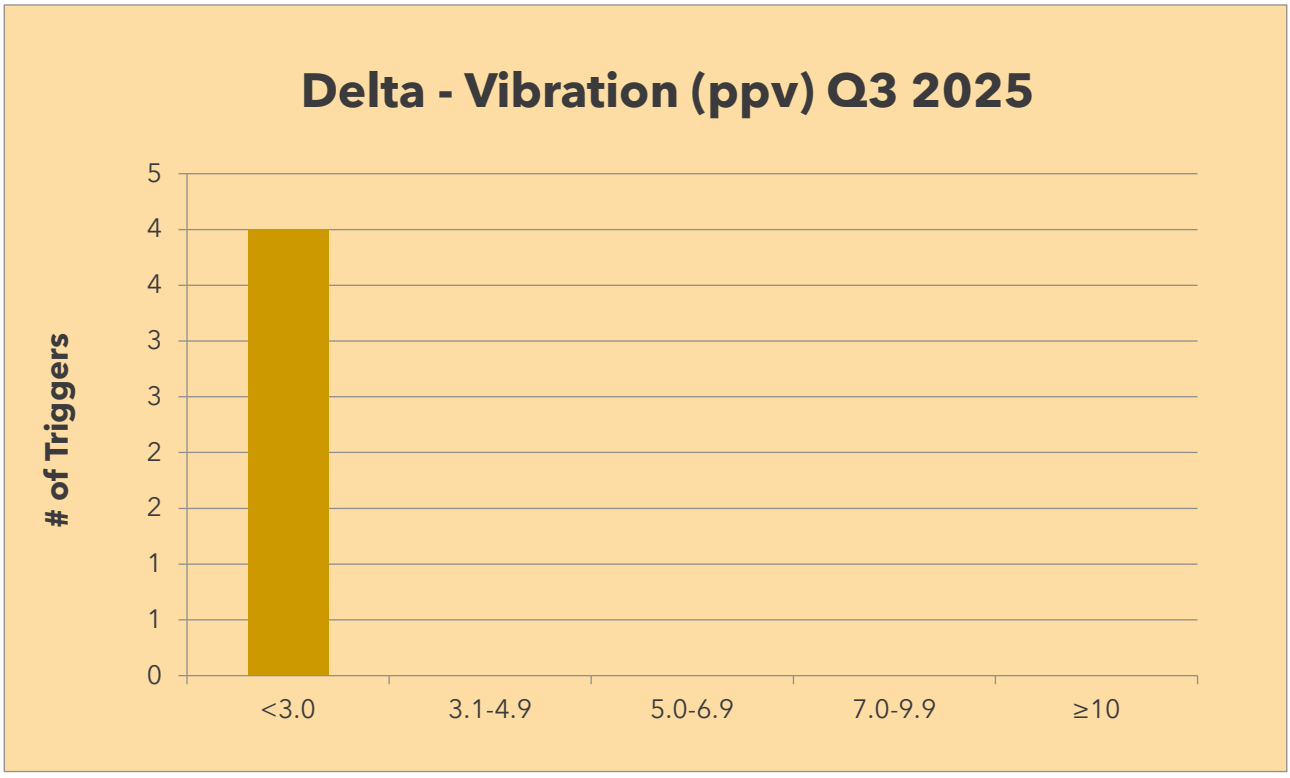

Charlie - Vibration (ppv) Q3 2025
# of Triggers
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

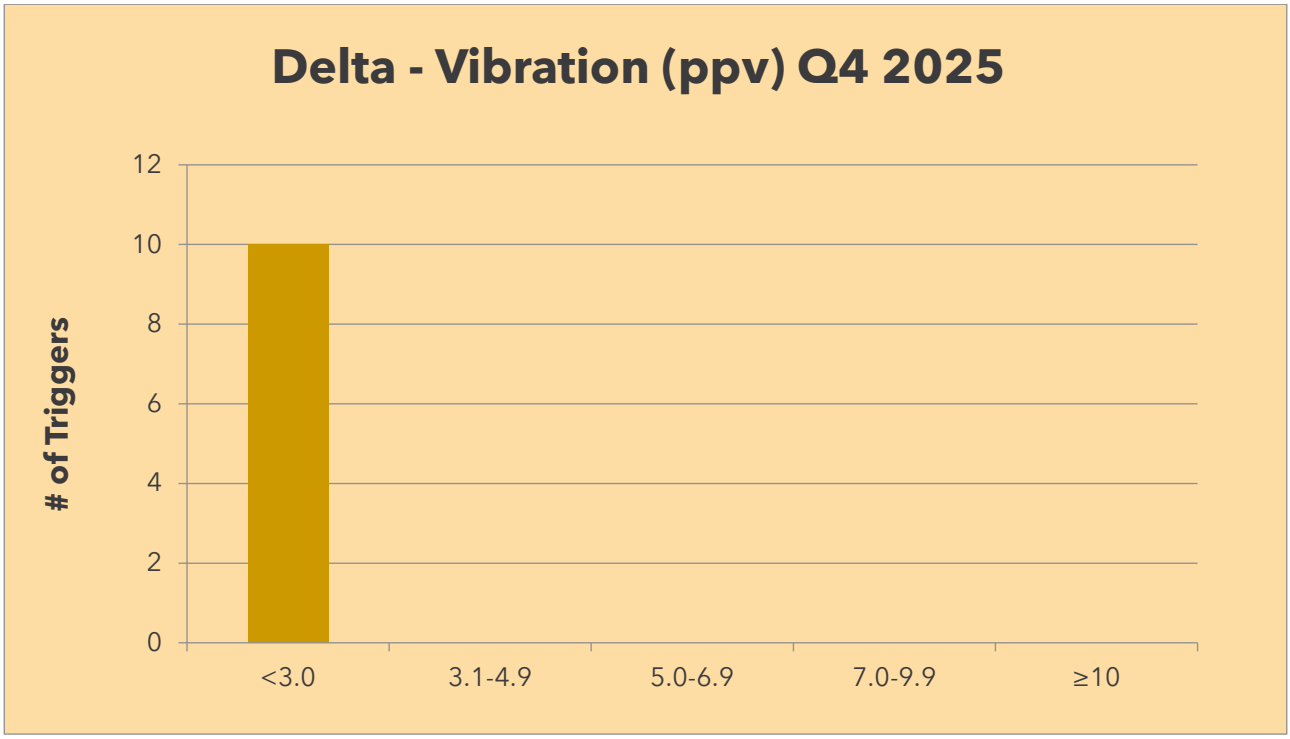

Charlie - Vibration (ppv) Q4 2025
# of Triggers
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

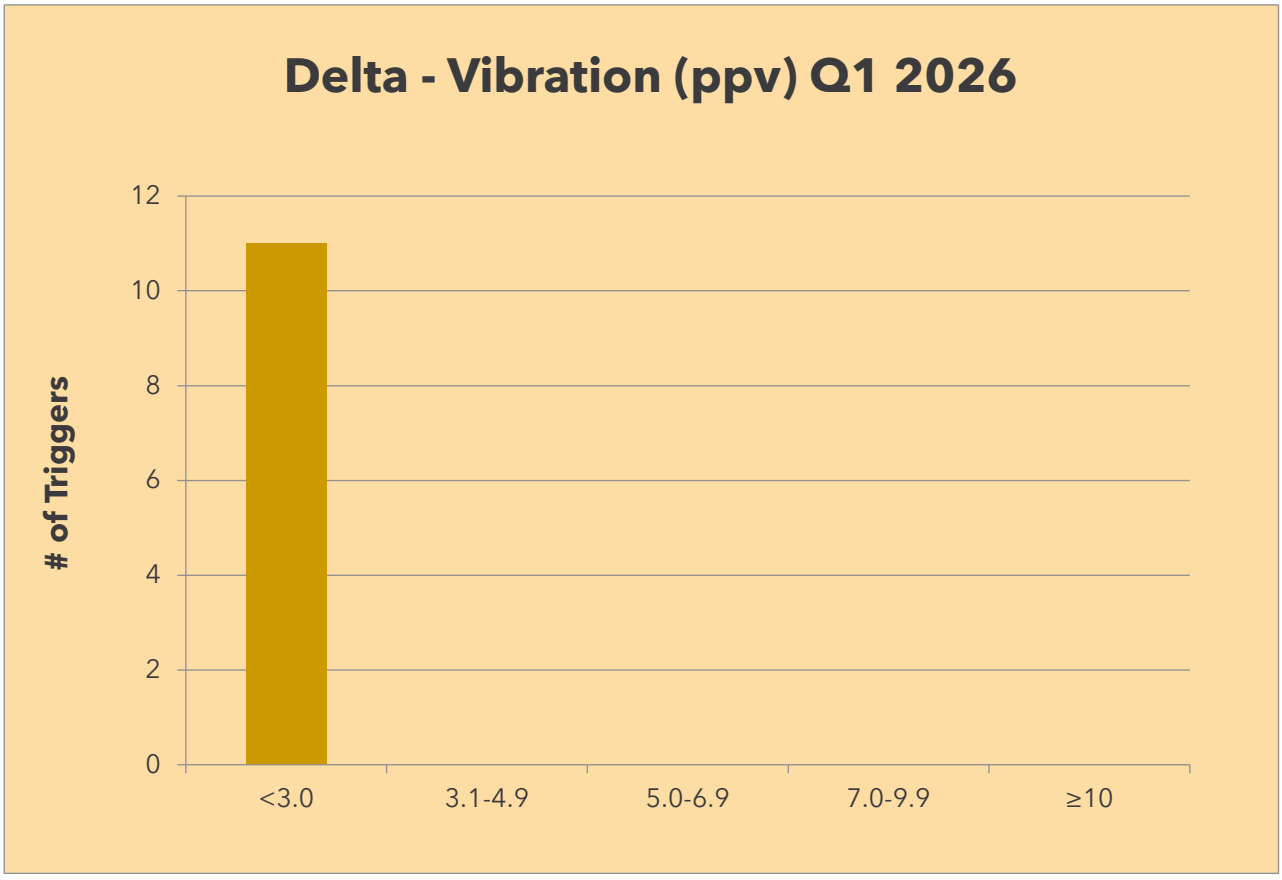

Charlie - Vibration (ppv) Q1 2026
# of Triggers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

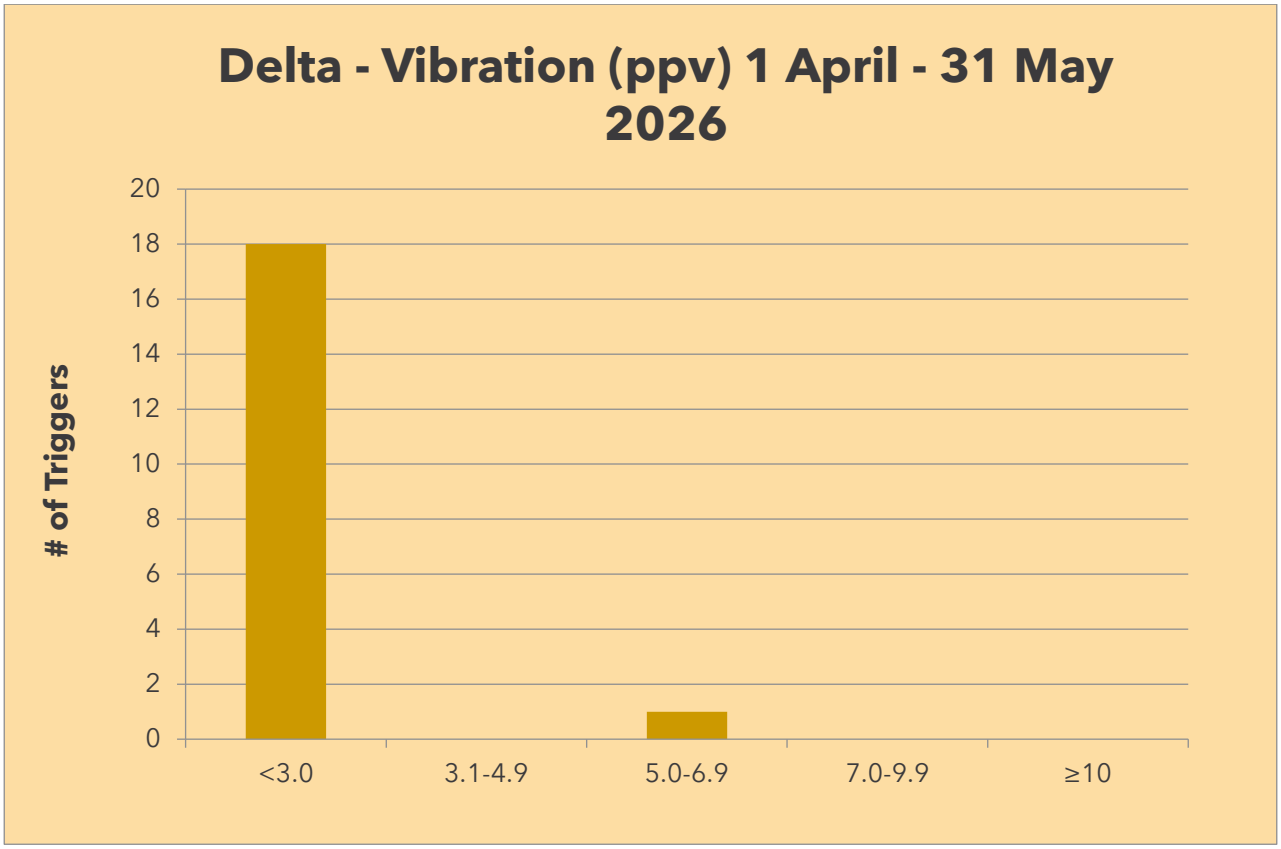

Charlie - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

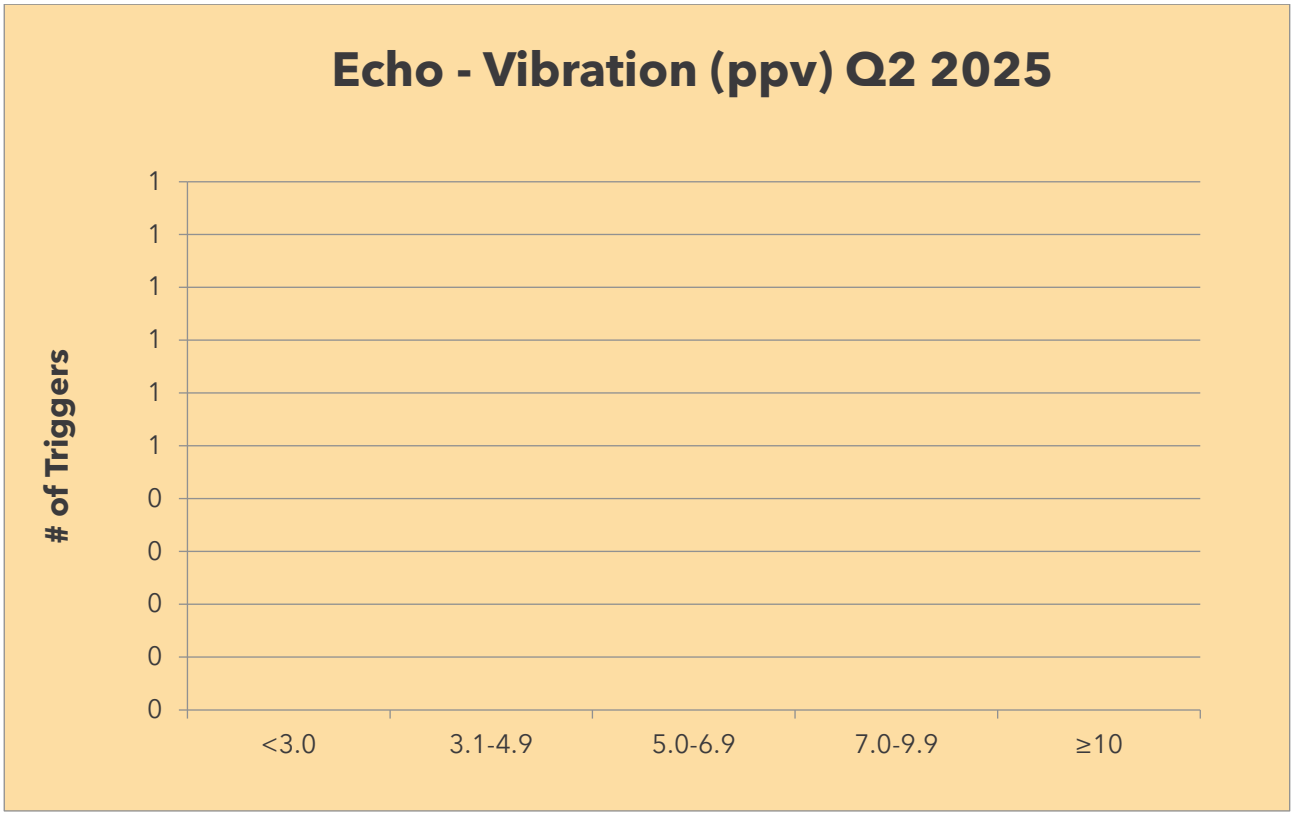

Delta - Vibration (ppv) Q2 2025
# of Triggers
5
4
4
3
3
2
2
1
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

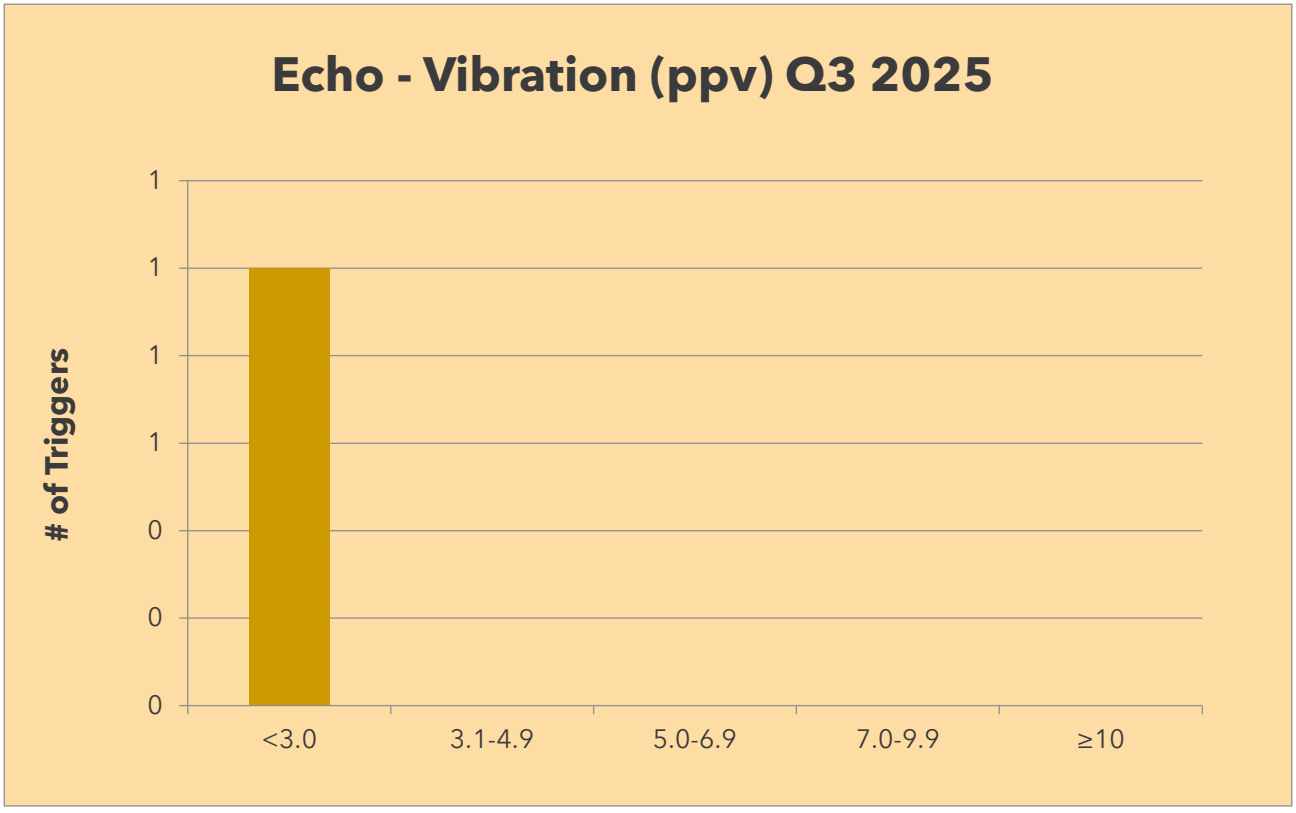

Delta - Vibration (ppv) Q3 2025
# of Triggers
5
4
4
3
3
2
2
1
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

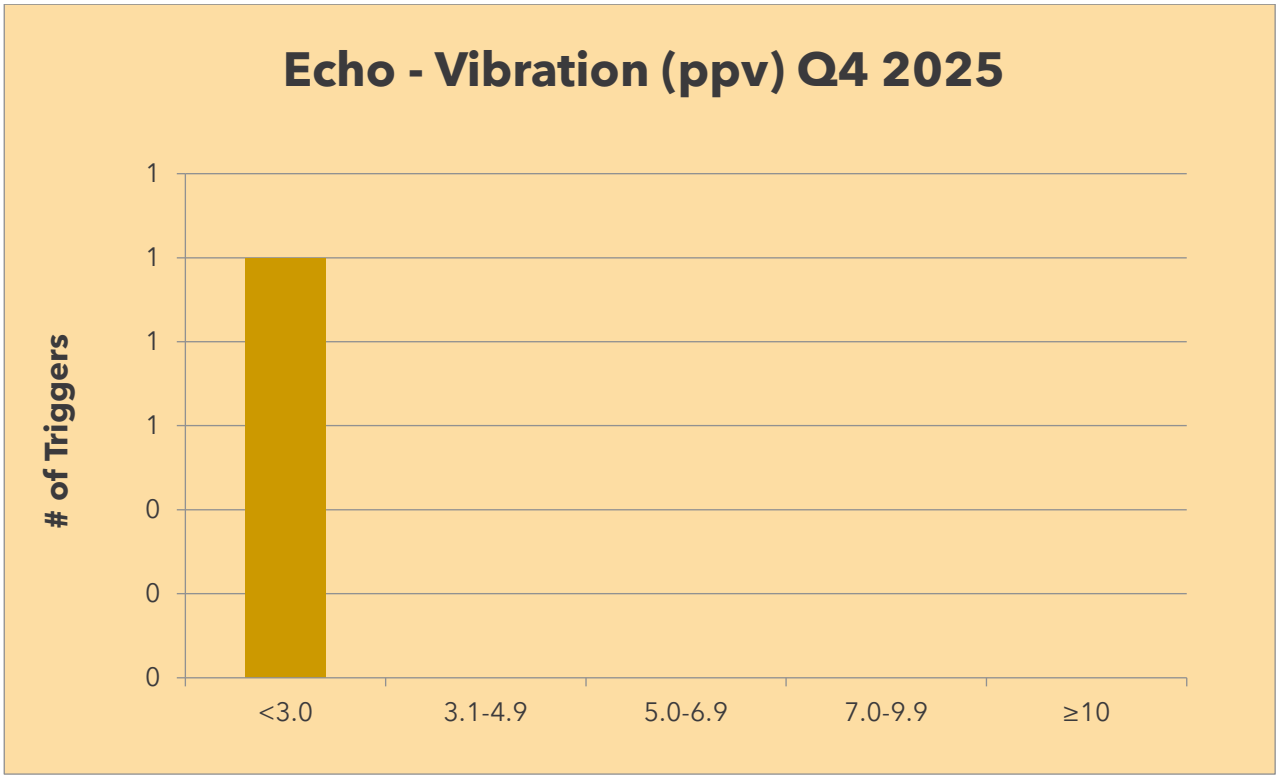

Delta - Vibration (ppv) Q4 2025
# of Triggers
12
10
8
6
4
2
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

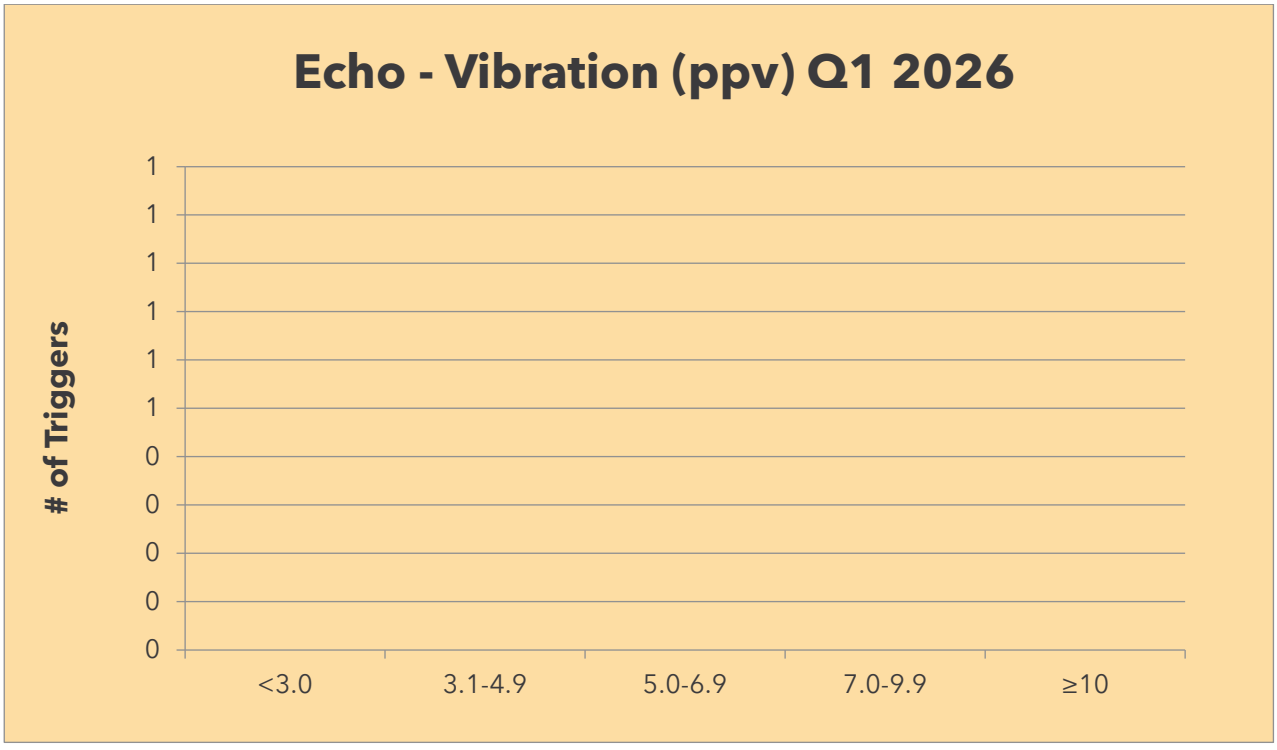

Delta - Vibration (ppv) Q1 2026
# of Triggers
12
10
8
6
4
2
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

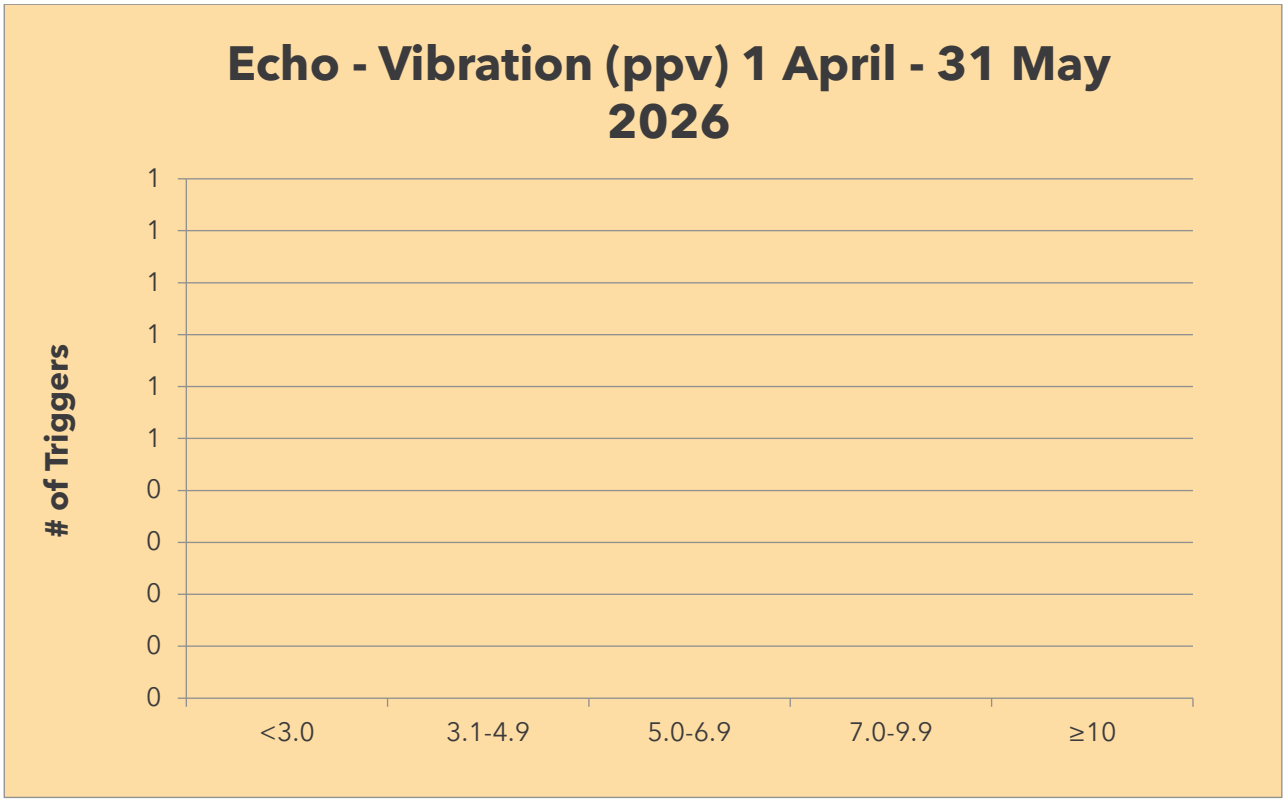

Delta - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
20
18
16
14
12
10
8
6
4
2
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

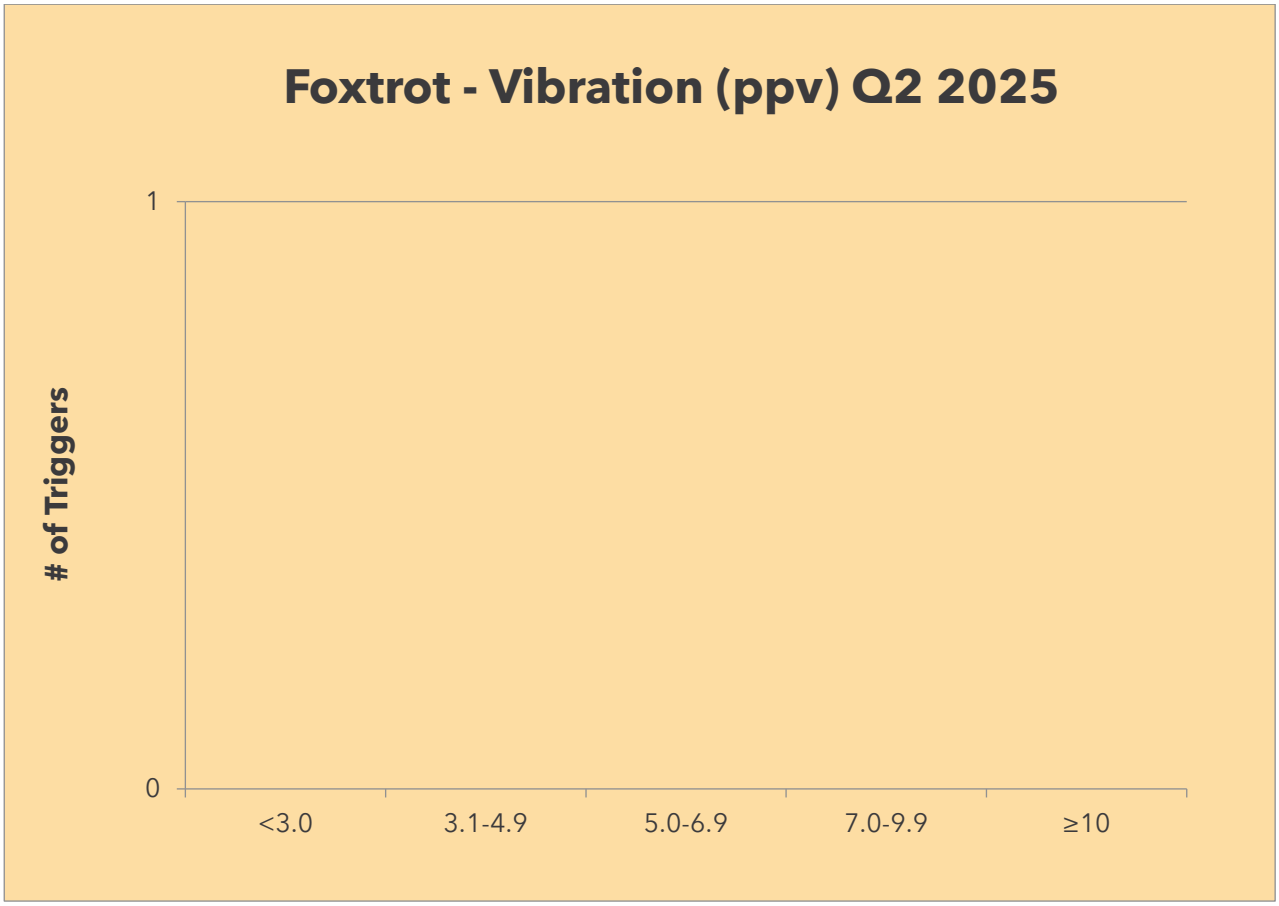

Echo - Vibration (ppv) Q2 2025
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

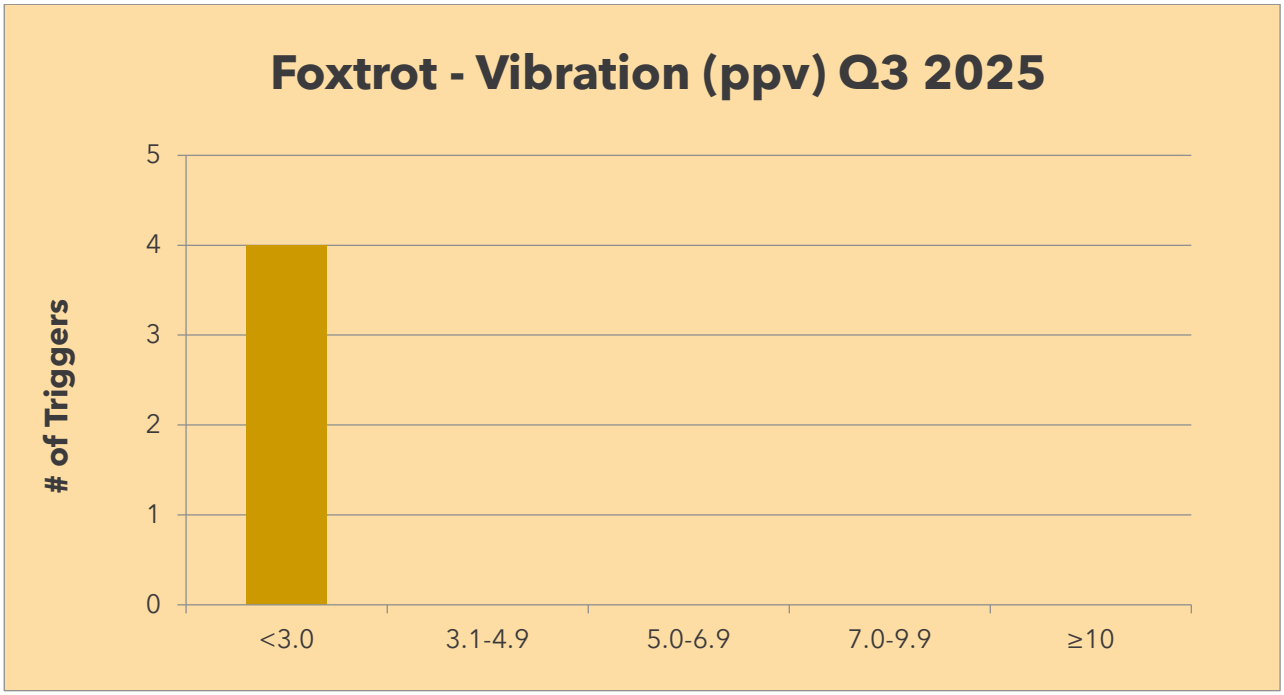

Echo - Vibration (ppv) Q3 2025
# of Triggers
1
1
1
1
0
0
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

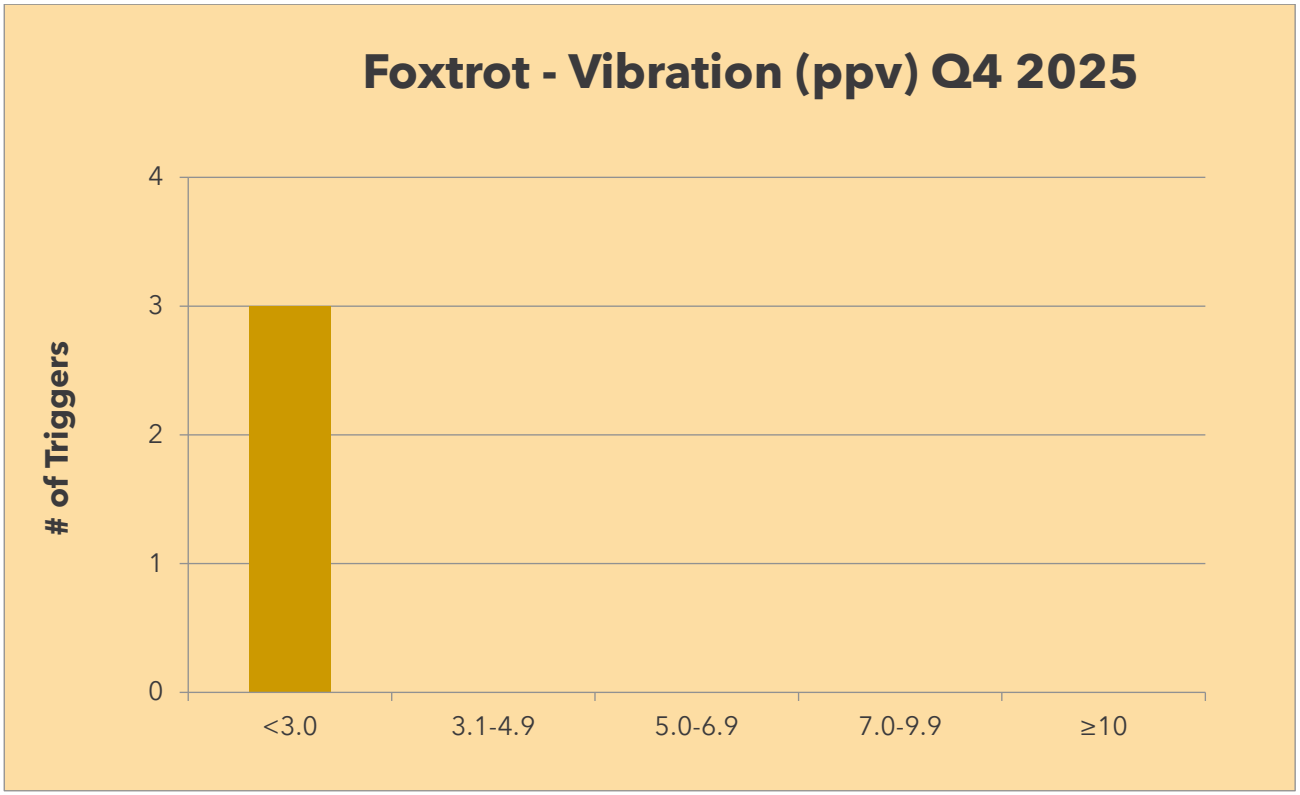

Echo - Vibration (ppv) Q4 2025
# of Triggers
1
1
1
1
0
0
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

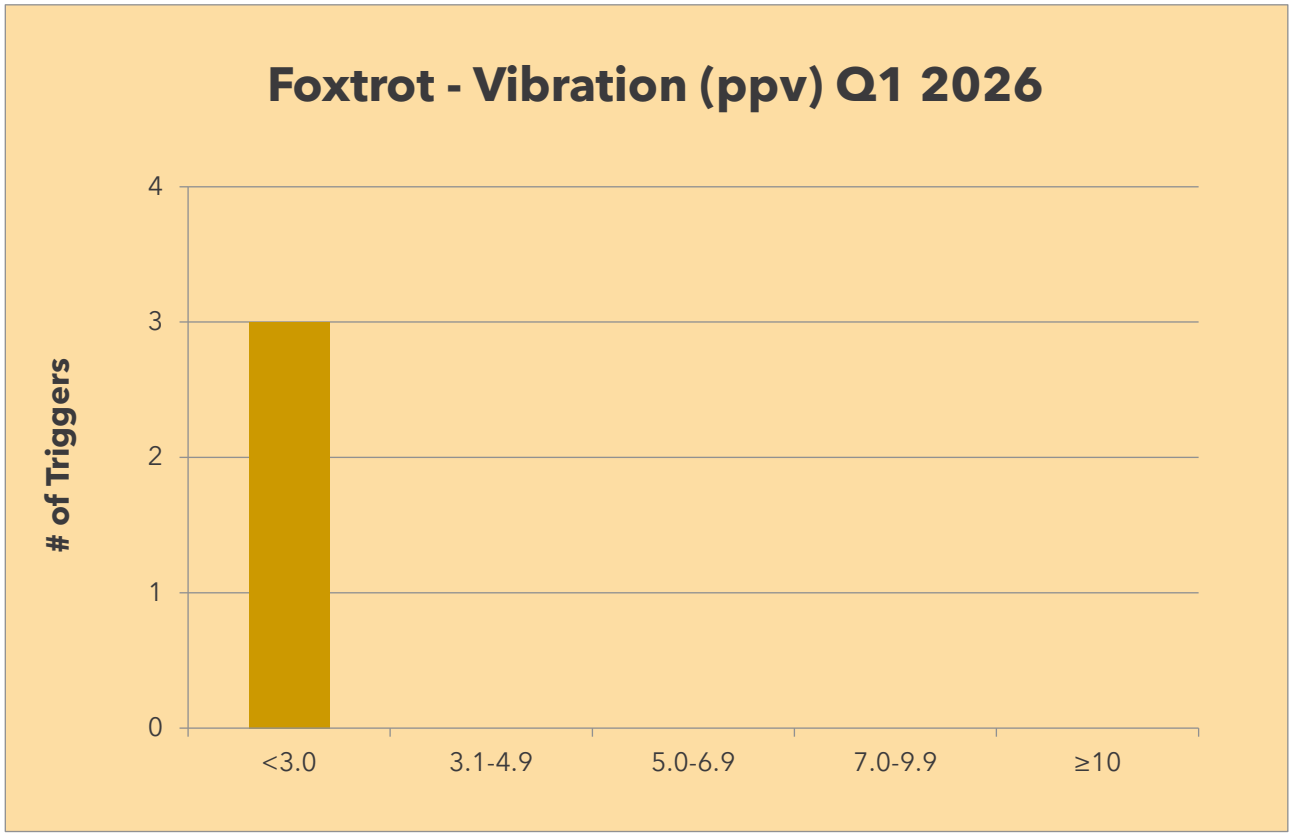

Echo - Vibration (ppv) Q1 2026
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

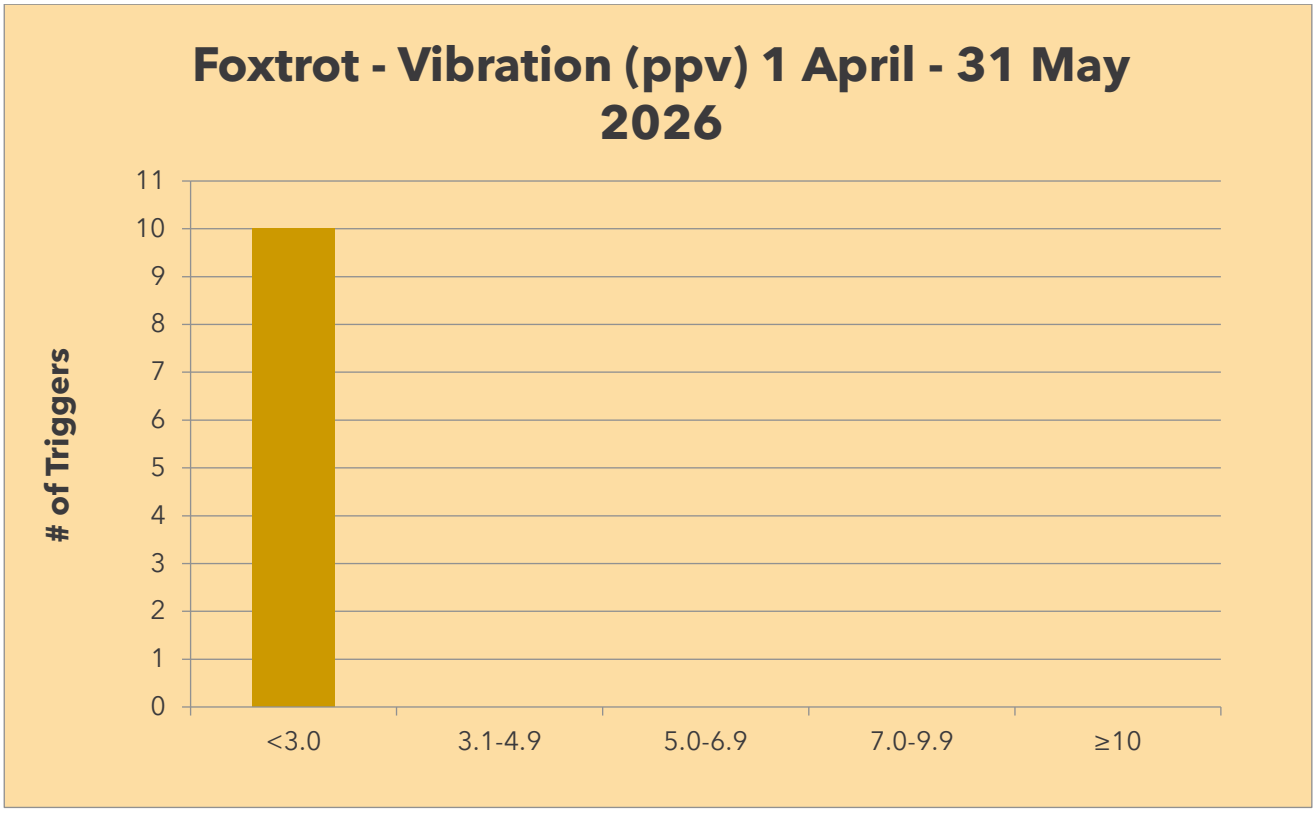

Echo - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
1
1
1
1
1
1
0
0
0
0
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10


Foxtrot - Vibration (ppv) Q2 2025
# of Triggers
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10


Foxtrot - Vibration (ppv) Q3 2025
# of Triggers
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10


Foxtrot - Vibration (ppv) Q4 2025
# of Triggers
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10


Foxtrot - Vibration (ppv) Q1 2026
# of Triggers
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10


Foxtrot - Vibration (ppv) 1 April - 31 May 2026
# of Triggers
11
10
9
8
7
6
5
4
3
2
1
0
<3.0
3.1-4.9
5.0-6.9
7.0-9.9
≥10

APPENDIX 5: Noise Logger Calibration Certificates

Certificate of Calibration – Sound Level Meter

Report Reference:	SLM/25/11/002	**Date of calibration:**	04/11/2025

Client: Northern Star Resources Ltd
Address: Black Street, Kalgoorlie, WA, 6430

Sound Level Meter:	Brüel & Kjær 2250	**Microphone:**	Brüel & Kjær 4189
Meter Serial No:	3000415	**Microphone Serial No:**	2933704
Meter Class:	1	**Preamplifier:**	Brüel & Kjær ZC-0032
Hardware Version:	3.0	**Preamplifier Serial No:**	14894
Software Version:	4.7.5	**Filters:**	Integral Octave & 1/3 Octave Band
Channel/s tested:	N/A		

Procedures from AS/NZS IEC 61672.3:2019 were used to perform periodic tests.

Clause 10	Indication at the calibration check frequency	**Complied**
Clause 11	Self-generated noise	**Checked**
Clause 12	Acoustical tests of frequency weighting	**Complied**
Clause 13	Electrical tests of frequency weightings	**Complied**
Clause 14	Frequency and time weighting at 1kHz	**Complied**
Clause 15	Long-Term stability	**Complied**
Clause 16	Level linearity on the reference level range	**Complied**
Clause 17	Level linearity including level range control	**N/A**
Clause 18	Toneburst response	**Complied**
Clause 19	Peak C sound level	**Complied**
Clause 20	Overload indication	**Complied**
Clause 21	High-Level Stablilty	**Complied**

Where the instrument includes an Octave Band or 1/3 Octave Band Filter Set, performance characteristics were checked against the requirements of the following clauses of AS/NZS4476:1997:

Clause 4.4, 5.3	Relative Attenuation	**Complied**

Primary test equipment:
Bruel & Kjaer type 4226 multifunction calibrator S/N 3412384
Agilent Technologies HP33120A Waveform generator S/N US36006913

Environmental conditions – start of test: 23.1 deg C, 100.2 kPa, 44.2 %RH
Environmental conditions – end of test: 23 deg C, 100.3 kPa, 43.7 %RH

The sound level meter submitted for testing has successfully completed the Class 1 periodic tests of AS/NZS IEC 61672.3:2019, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with AS/NZS IEC 61672.2:2019, to demonstrate that the model of sound level meter fully conformed to the requirements in AS/NZS IEC 61672.1:2019, the sound level meter submitted for testing conforms to the Class 1 requirements of AS/NZS IEC 61672.1:2019.

The results of the tests, calibrations and/or measurements included in this document are traceable to the International System of Units (SI). References are traceable to National Measurement Institutes or laboratories accredited to ISO/IEC 17025 by a signatory to the ILAC MRA.

The calibration procedures followed are in accordance with the terms of the NATA accreditation of this laboratory.

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Calibration.

Accreditation No. 12604

Authorised Signatory

04 · 11 · 25
Date of Issue

Noise & Vibration Measurement Systems Pty Ltd
112 Cambridge Street, West Leederville, WA 6007, Australia
PO Box 514, Wembley, WA 6913

Phone: (08) 9380 6933
e-mail: sales@nvms.com.au

Certificate of Calibration – Sound Level Meter

Report Reference:	SLM/25/09/005	**Date of calibration:**	15/09/2025

Client: Northern Star Resources Ltd
Address: Black Street, Kalgoorlie, WA, 6430

Sound Level Meter:	Brüel & Kjær 2250	**Microphone:**	Brüel & Kjær 4189
Meter Serial No:	3000412	**Microphone Serial No:**	2523581
Meter Class:	1	**Preamplifier:**	Brüel & Kjær ZC-0032
Hardware Version:	4.0	**Preamplifier Serial No:**	4118
Software Version:	4.7.5	**Filters:**	Integral Octave & 1/3 Octave Band
Channel/s tested:	N/A		

Procedures from AS/NZS IEC 61672.3:2019 were used to perform periodic tests.

Clause 10	Indication at the calibration check frequency	**Complied**
Clause 11	Self-generated noise	**Checked**
Clause 12	Acoustical tests of frequency weighting	**Complied**
Clause 13	Electrical tests of frequency weightings	**Complied**
Clause 14	Frequency and time weighting at 1kHz	**Complied**
Clause 15	Long-Term stability	**Complied**
Clause 16	Level linearity on the reference level range	**Complied**
Clause 17	Level linearity including level range control	**N/A**
Clause 18	Toneburst response	**Complied**
Clause 19	Peak C sound level	**Complied**
Clause 20	Overload indication	**Complied**
Clause 21	High-Level Stablilty	**Complied**

Where the instrument includes an Octave Band or 1/3 Octave Band Filter Set, performance characteristics were checked against the requirements of the following clauses of AS/NZS4476:1997:

Clause 4.4, 5.3	Relative Attenuation	**Complied**

Primary test equipment:
Bruel & Kjaer type 4226 multifunction calibrator S/N 3412384
Agilent Technologies HP33120A Waveform generator S/N US36006913

Environmental conditions – start of test: 24 deg C, 101.3 kPa, 46 %RH
Environmental conditions – end of test: 23.8 deg C, 101.6 kPa, 42.6 %RH

The sound level meter submitted for testing has successfully completed the Class 1 periodic tests of AS/NZS IEC 61672.3:2019, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with AS/NZS IEC 61672.2:2019, to demonstrate that the model of sound level meter fully conformed to the requirements in AS/NZS IEC 61672.1:2019, the sound level meter submitted for testing conforms to the Class 1 requirements of AS/NZS IEC 61672.1:2019.

The results of the tests, calibrations and/or measurements included in this document are traceable to the International System of Units (SI). References are traceable to National Measurement Institutes or laboratories accredited to ISO/IEC 17025 by a signatory to the ILAC MRA.

The calibration procedures followed are in accordance with the terms of the NATA accreditation of this laboratory.

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Calibration.

Accreditation No. 12604

Authorised Signatory

16 · 09 · 25
Date of Issue

Noise & Vibration Measurement Systems Pty Ltd
112 Cambridge Street, West Leederville, WA 6007, Australia
PO Box 514, Wembley, WA 6913

Phone: (08) 9380 6933
e-mail: sales@nvms.com.au

NVMS

Certificate of Calibration

Certificate No:	CAL/25/08/028	**Calibration Date:**	22/08/2025

Client: Northern Star Resources Ltd
Address: Main Warehouse KCGM, Black Street, Kalgoorlie, WA, 6430

Description:	Acoustic Calibrator	**Specified Sound**	
Manufacturer:	Brüel & Kjær	**Pressure Levels:**	94, 114 dB
Model:	4231		
Serial:	3000364	**Specified Frequencies:**	1000 Hz
Adaptors:	½ inch		

Tests performed The sound pressure level(s), frequency(ies) and total distortion of the calibrator have been checked against the requirements of AS IEC 60942 - 2004 Annex B

Test Results

Parameter	**Measured Value**	**Expanded Measurement Uncertainty** †	
Sound Pressure Level 1	**94.01**	0.14 dB	**Complied Class 1**
Sound Pressure Level 2	**114.01**	0.14 dB	**Complied Class 1**
Frequency	**1000.0**	0.015 Hz	**Complied Class 1**
THD + N @ SPL 1	**0.3**	0.07 %	**Complied Class 1**
THD + N @ SPL 2	**0.3**	0.07 %	**Complied Class 1**

(Sound Pressure Levels are referred to a pressure of 20 micro-pascals)

† Measurement uncertainties are stated at the 95% confidence level, and have been calculated in accordance with the principles in the ISO Guide to the Expression of Uncertainty in Measurement. A coverage factor of 2 applies.

The results of the tests, calibrations and/or measurements included in this document are traceable to the International System of Units (SI). References are traceable to National Measurement Institutes or laboratories accredited to ISO/IEC 17025 by a signatory to the ILAC MRA.

Ambient Conditions

Temperature:	23 °C
Relative Humidity:	51%
Atmospheric Pressure:	1016 hPa

Authorised Signatory

Checked By

22/08/25
Date of issue

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Calibration.

Accreditation No. 12604.

Noise & Vibration Measurement Systems Pty Ltd ABN 14 009 390 158
112 Cambridge Street, West Leederville, WA 6007, Australia
PO Box 514, Wembley, WA 6913
Phone: (08) 9380 6933
e-mail: sales@nvms.com.au

APPENDIX 6: Blast Monitor Calibration Certificates

ETM CALIBRATION CERTIFICATE #718620250716

DATE: **16/07/2025**
SERIAL NUMBER: **7186**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #718720250716

DATE: **16/07/2025**
SERIAL NUMBER: **7187**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #718920250716

DATE: **16/07/2025**
SERIAL NUMBER: **7189**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #719120250716

DATE: **16/07/2025**
SERIAL NUMBER: **7191**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**30 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #719220250716

DATE: **16/07/2025**
SERIAL NUMBER: **7192**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**26 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #719320250715

DATE: **15/07/2025**
SERIAL NUMBER: **7193**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**27 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**8.7mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #719720250714

DATE: **14/07/2025**
SERIAL NUMBER: **7197**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**29 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #719820250714

DATE: **14/07/2025**
SERIAL NUMBER: **7198**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**10.0mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #720020250714

DATE: **14/07/2025**
SERIAL NUMBER: **7200**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**9.2mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #720120250715

DATE: **15/07/2025**
SERIAL NUMBER: **7201**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**29 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**10.4mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #724820250716

DATE: **16/07/2025**
SERIAL NUMBER: **7248**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #738420250715

DATE: **15/07/2025**
SERIAL NUMBER: **7384**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**9.4mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #784420250715

DATE: **15/07/2025**
SERIAL NUMBER: **7844**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**6.5mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)

ETM CALIBRATION CERTIFICATE #784520250714

DATE: **14/07/2025**
SERIAL NUMBER: **7845**

SERVICE NOTES:

As part of this Calibration service, the monitor, sensors and accessories were tested, and found to be functioning correctly.

CERTIFIED QUANTITIES:

Monitor electronics passed all calibration tests to within **± 2·0%**.

Sensor	Sensitivity	Frequency	Tolerance
Geophone	**28 mV/mm/s**	63 Hz	± 1.2 mV/mm/s
Microphone	**9.8mV/Pa**	125 Hz	± 0.25 mV/Pa

GENERAL:

(1) Instrument calibration measurements were performed with a Calibrated Multimeter.

(2) Sensor calibration measurements were performed with a National Instruments 500 kS/s Multifunction DAQ Model USB-6343(BNC).

(3) Geophone sensitivity was determined by comparing the output from the geophones under test with that of a reference accelerometer.

(4) Microphone sensitivity was determined by comparing the output from the microphone under test with that of a reference microphone.

CALIBRATION INSTRUMENTS USED:

	Type	Serial	Calibrated
(1) Multimeter	Metra Hit 25S	QB1402	June 2025
(2) NI Multifunction I/O	USB-6343(BNC)	1F664FD	December 2024
(3) Vibration Reference Horizontal	PCB 333B50	30588	August 2024
(4) Vibration Reference Vertical	PCB 333B50	40756	August 2024
(5) Microphone	ACO Flat 7052S/4052BL	F43474	March 2025

All instrument calibrations NATA Certified or traceable to the Australian Government National Measurement Institute.

Tests Performed by: _____ Date: _____
(Alexander Hemmings)