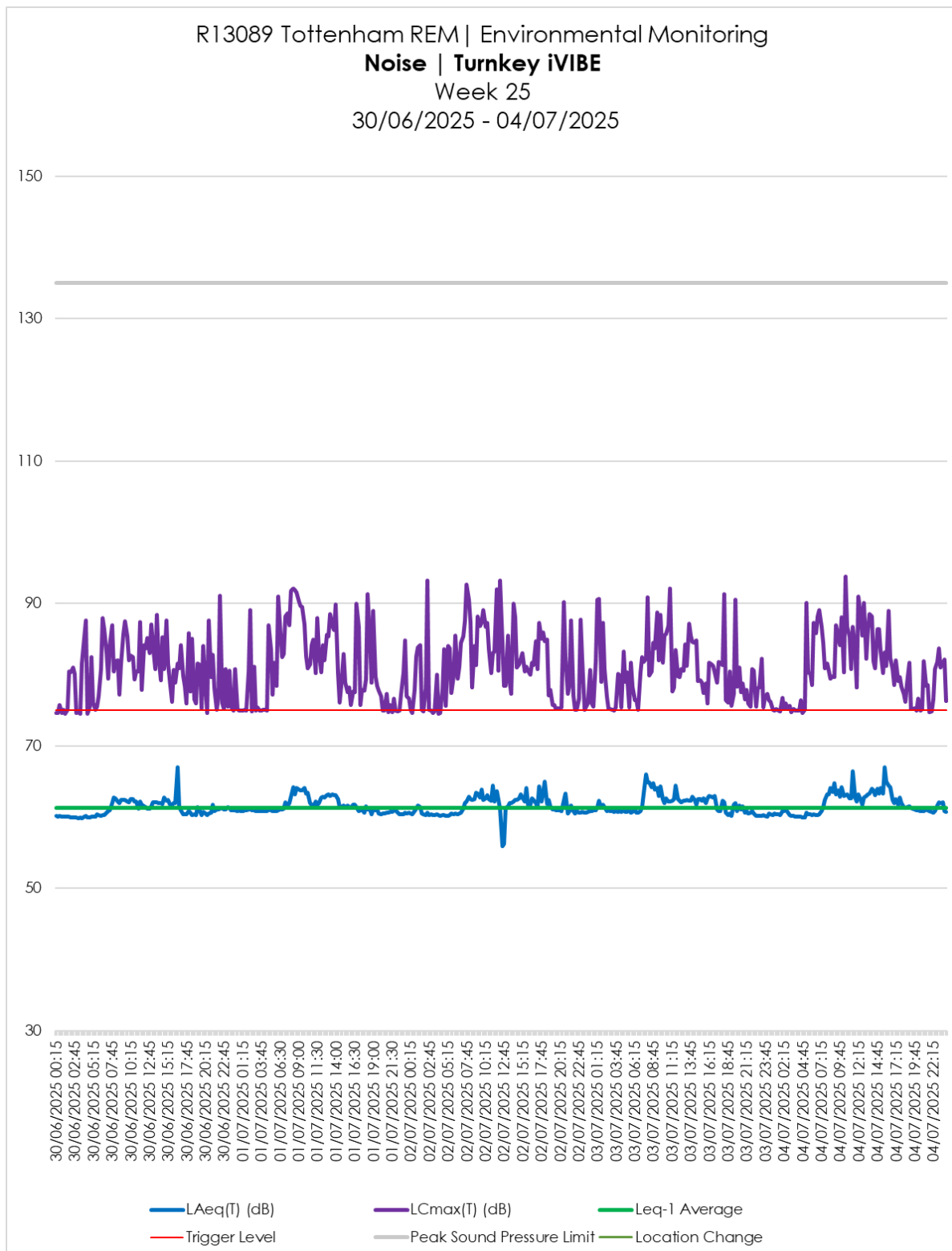


4.1 Graphical Representation of Logged Noise Data



LAeq - A-weighted equivalent continuous sound level in decibels equivalent to the total sound energy measured over a stated period.

LCmax - C-weighted peak sound pressure measurement.

(T) - Stated measured period of time.

Decibel (dB) - A unit used to measure the intensity of a sound.

4.2 Findings on Noise

Logged noise data for the week is displayed in the above graph.

No exceedances were recorded during the week.

5. Vibration Monitoring

An iVIBE data logger and 3 axis geophone was used for the duration of the works. The equipment is designed for high accuracy vibration monitoring in a construction environment.

Vibration monitoring was recorded at the locations shown in Section 1.

The monitor was set to run in continuous mode and was able to digitally record vibration levels up to 20 mm.s⁻¹, peak particle velocity, for frequencies between 5 Hz and 250 Hz. Weighting filters comply with ISO 2631, BS 6472 and BS 7385, and KB filters according to DIN 4150 and DIN 45669. Results are given in Root Mean Square (RMS) format. Data was exported from the logger and input into an Excel document, from which a graphic in the form a line graph was generated.

The geophone was levelled using the integrated bubble level and adjustable legs. It was loosely orientated by eye so that the axis conformed to the following compass bearings.

Geophone Axis	Bearing	Compass Point
X	51.60593	North
Y	-0.04660	West
Z	N/a	Zenith

Ground-borne vibration is to be undertaken by appropriately qualified persons and assessed using the guidelines provided in accordance with 'BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites'.

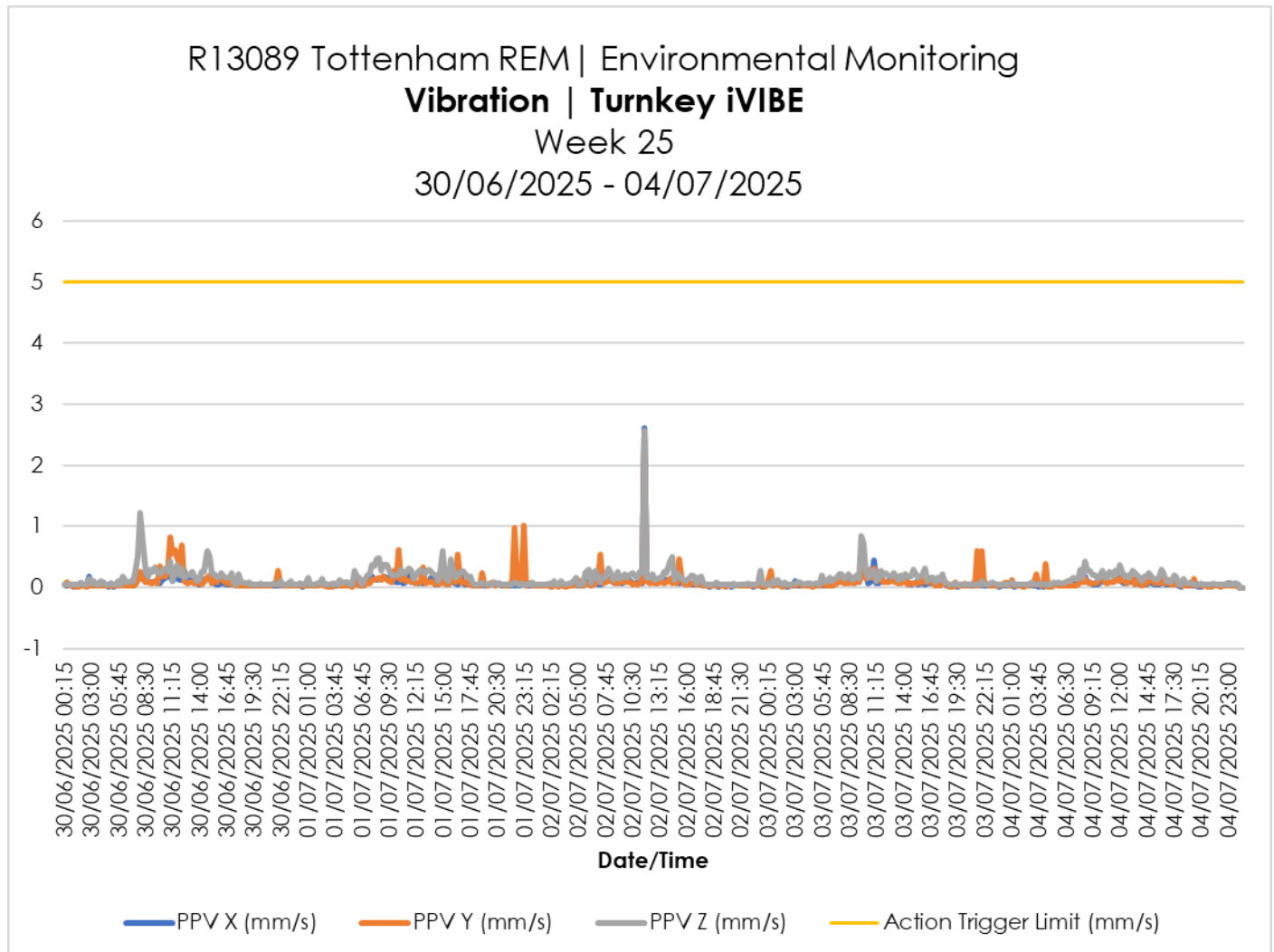
Trigger levels are based upon guidance given in 'BS 7385-2: 1993 Evaluation and measurement for vibration in buildings — Part 2: Guide to damage levels from ground borne vibration'.

Type of building	Peak component particle velocity in frequency of predominant pulse	
	4 Hz to 15 Hz	15 Hz and above
Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Vibration Limits Relating to Minor or Cosmetic Damage to Buildings:

Building Classification	Intermittent Vibration (PPV, mm/s ⁻¹)	Continuous Vibration (PPV, mm/s ⁻¹)
Residential in generally good repair	10	5
Residential where preliminary survey reveals significant defects (party wall)	5	3.5
Industrial/commercial – light and flexible structure	20	15
Industrial/commercial – heavy and stiff structure	30	15

5.1 Graphical Representation of Logged Vibration Data



5.2 Findings on Vibration

Logged vibration data for the week is displayed in the above graphs.

No exceedances were recorded during the week.

6. Dynamic Dust Monitoring

6.1 Dynamic Dust

The Osiris uses a light-scattering laser photometer to measure airborne particle monitors (PM10) in real-time with history data logging capability. The Osiris has been Environment Agency MCERTS certified.

This instrument is designed to measure dust deposition. Action values for personal exposure to Dust for Particulate Matter PM10 are set to a lower action level of 180 µg/m³ averaged over a 15-minute period as our warning trigger but not to exceed 200 µg/m³ averaged over a 15-minute period, as per the 'Institute of Air Quality Management (2018), Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites'.

Should the action value be exceeded, measures in the Safe System of Work will be implemented including stopping work and an increased dampening down of the site.

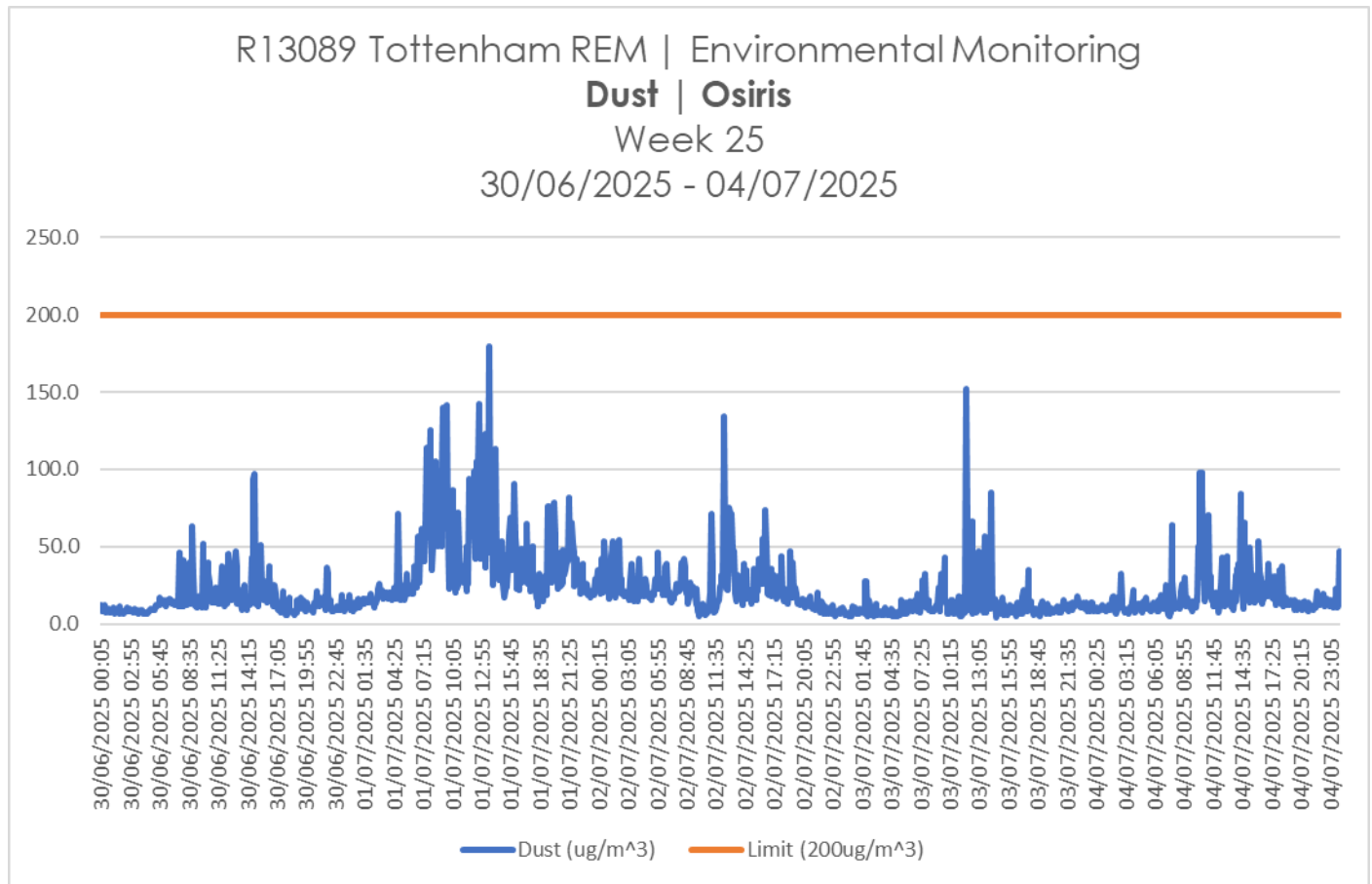
The DEFRA Daily Air Quality Index (DAQ) is numbered 1-10 and divided into four bands. Low (1) to very high (10), to provide detail about air pollution levels in a simple way. For PM10 particles, this based on the daily mean concentration.

Index	1	2	3	4	5	6	7	8	9	10
Band	Low	Low	Low	Moderate	Moderate	Moderate	High	High	High	Very High
µg/m ³	0-16	17-33	34-50	51-58	59-66	67-75	76-83	84-91	92-100	101 or more

The data below was obtained from the onsite monitor and represents the Particulate Matter suspended in the air up to 10 microns (PM10) in size during the period of this report.

Dust monitoring was recorded at the locations shown in Section 1.

6.2 Graphical Representation of Logged Dust Data



6.3 Findings on Dust

Logged dust data for the week is displayed in the above graph.

Action values for personal exposure to dust as defined in the air quality objectives for Particulate matter PM₁₀ are not to exceed 200 $\mu\text{g}/\text{m}^3$ averaged over a 15-minute period as per the *Institute of Air Quality Management (2018), Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*.

No exceedances were recorded during the week.

7. Volatile Organic Compounds (VOC) Monitoring

Under the Control of Substances Hazardous to Health Regulations, 2002 (COSHH), as amended in 2004), we used Ion Science Cubs, Photo Ionising Detectors (PID) which are capable of data logging and have an audio/visual alarm set to trigger in response to any exceedances of the occupational guideline value of an appropriate organic contaminant (benzene). This device meets the following European standards: ATEX: CE, Ex II 1G, Ex IA IIC T4; $-20^{\circ}\text{C} \leq T_a \leq 55^{\circ}\text{C}$.

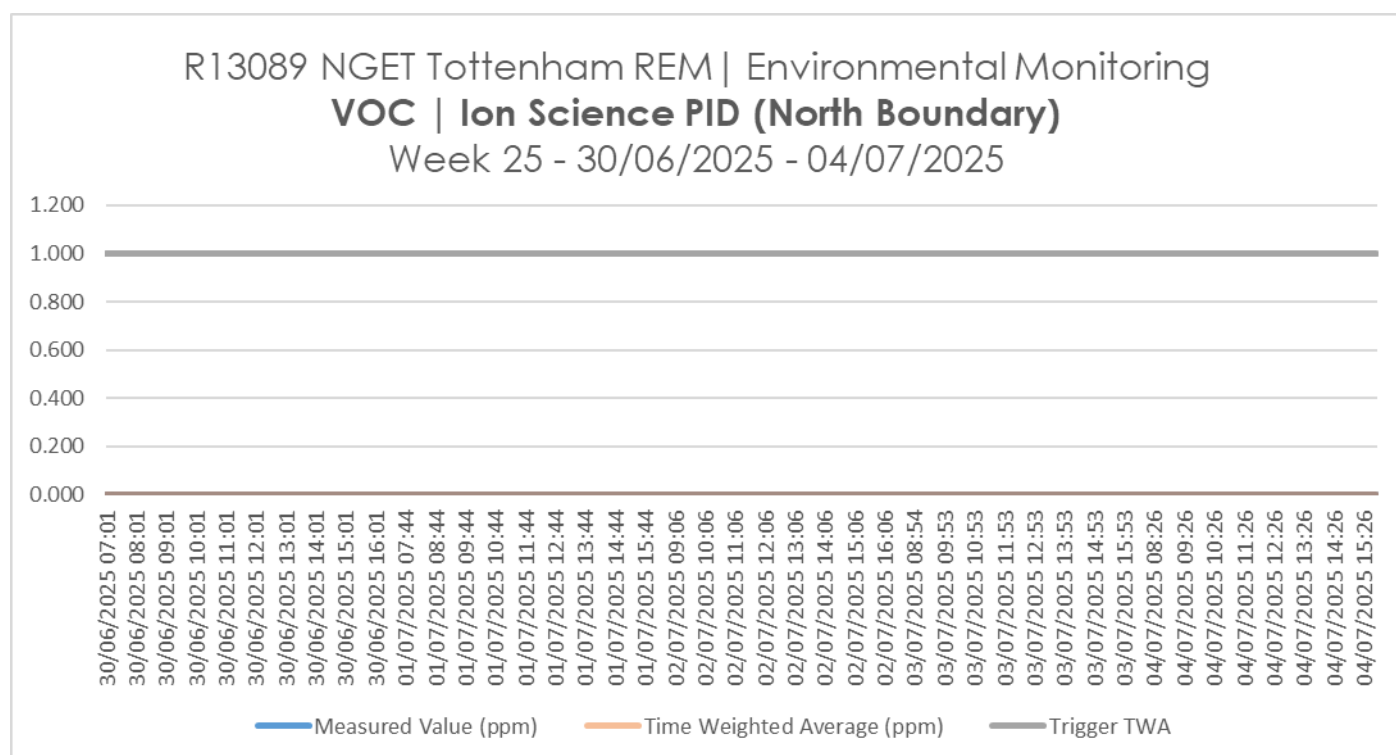
Action values for personal exposure to VOC (calibrated to benzene standard) as defined in the COSHH Regulations. VOC readings not to exceed 1 ppm of benzene. Should target limits be exceeded, measures in the SSoW will be implemented.

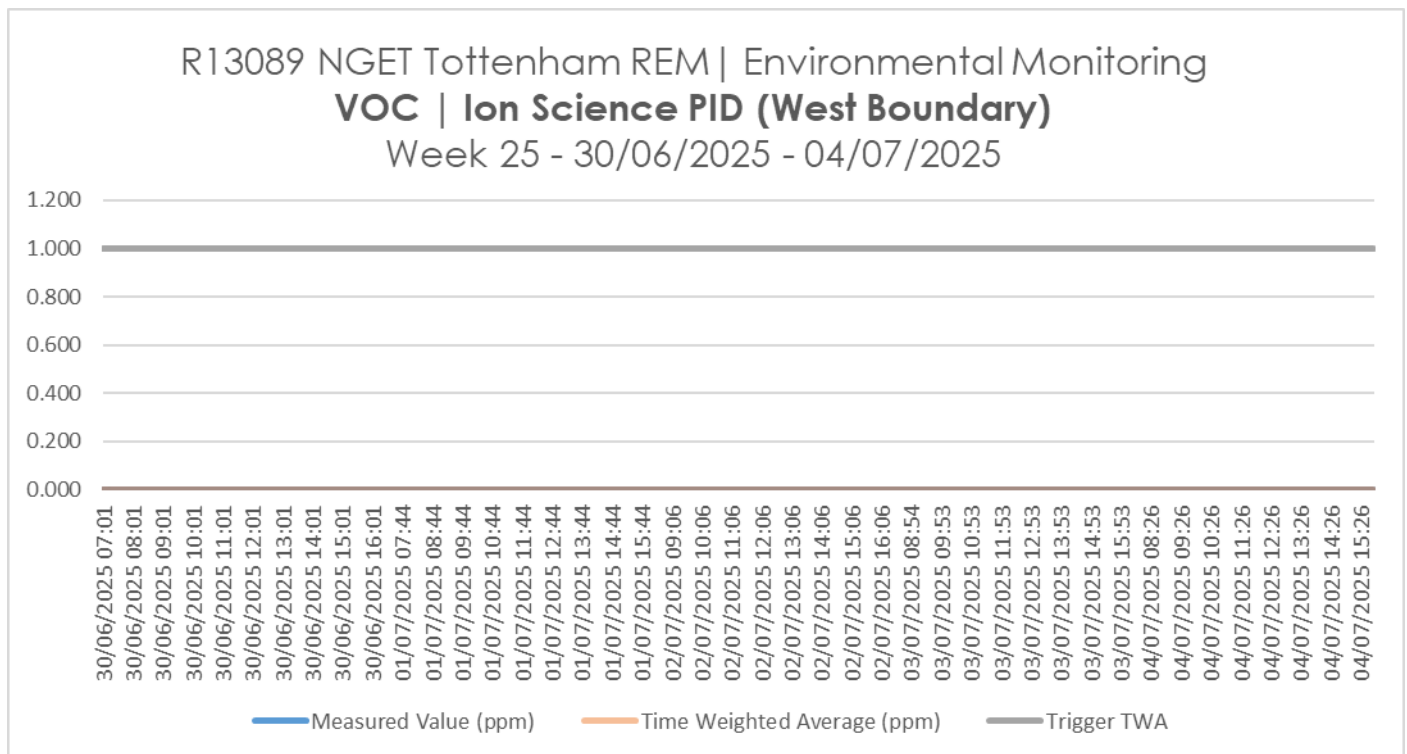
These are placed with the Site Foreman and Excavator Operator. The following data has been obtained from the onsite Photo Ionising Detectors (PID) and Tiger Select Cubs and represents the potential exposure to Volatile Organic Compounds (calibrated to benzene standard) during the week of this report.

7.1 Graphical Representation of Logged VOC Data

Not used during this period.

7.2 Graphical Representation of Logged PID Data





7.3 Findings on VOC

No exceedances of HSE'S document '*EH40: workspace exposure limits*' given workspace exposure limit (WEL) value of 1ppm 8-hour TWA were recorded for the week.

8. Applicable Legislation/ Regulations and Guidance

	Current Legislation	Activity	Impacts On
Reference Documents	Environmental Protection Act 1990 Part II	Demolition, asbestos, remediation works.	Air pollution, waste on land, contaminated land, nuisances and clean air, litter, radioactive substances, conservation.
	Pollution Prevention and Control Act 1999 & Pollution Prevention and Control (England & Wales) Regulations as amended 2000	Demolition, asbestos, remediation works.	Oil pollution, clean air, railway.
	Air Quality Standards Regulations 2010	Demolition, asbestos, remediation works.	Public exposure, ozone.
	The Environment Act (Commencements 1-18) Order 1995-1999	All projects.	EA, contaminated land, national parks, air quality, waste, drainage.
	Noise Emissions in the Environment by Equipment for use Outdoors (Amendment Regulations SI 2005/98	All projects, specifically in sensitive areas.	Human health, local noise levels.
	The Clean Air Act	All sites and projects.	Human health, environment.

Guidance:

- Institute of Air Quality Management – Guidance on the Assessment of Dust from Demolition and Construction - February 2014
- Institute of Air Quality Management – Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction sites – 2014
- BS 5228-1: 2009 + A1: 2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites.
- BS 7385-2: 1993 Evaluation and Measurement for Vibration in Buildings- Part2: Guide to damage levels from Ground Borne Vibration.
- BS 6742-1: 2008 – Guide to Evaluation of Human Exposure to Vibration in Building.
- DEFRA – Noise database for Prediction of Noise on Construction and Open Sites.
- HSE- EH40: Occupational Exposure Levels

9. Glossary of Terms

Trigger Levels	The limits of which one of the elements (noise/dust/vibration) cannot exceed external to the hoarding. The trigger levels may be agreed with the local council, according to the client requirements.
Baselines	The values recorded pre-works.
A weighting, dB(A)	The unit of sound level weighted according to the A-scale. Is the mechanism who correspond the best to response of the human ear.
LA_{eq}	The equivalent continuous noise level over any specified period.
PM10	The particulate matter of diameter less than or equal to 10 micrometres.
mg/m³	Milligrams of a substance in a cubic meter of air. It is a measure of concentration (weight/volume).
Peak	It is particularly valuable for indicating the level of short duration shocks, etc. (m/s ²).
P-P	Peak-to-Peak, indicates the maximum excursion of the wave, (m/s ²).
m/s²	Metres per second squared. It is a measure of acceleration.
m/s	Metres per second. It is a measure of velocity.

Appendix J. Photos





Progress Photos



15.01.2025



16.01.2025



27.01.2025



29.01.2025



03.02.2025



11.02.2025



21.02.2025



11.03.2025



18.03.2025



23.04.2025

