HS2

September 2024

Air Quality and Dust Monitoring Monthly Report – September 2024

London Borough of Ealing

Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

A report prepared by EWCs and MWCCs on behalf of HS2 Ltd.

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Monthly Summary

1.1.1 This Summary Report is published in fulfilment of commitments detailed in the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, Annex 1: Code of Construction Practice, for the nominated undertaker to present the results of air quality and dust monitoring undertaken in the London Borough of Ealing (LBE) during August 2024 and September 2024 respectively.

1.1.2 Figure 1 to Figure 3 in Appendix A present the current worksites together with air quality and dust monitoring locations.

1.1.3 This summary should be read in conjunction with the overview monitoring report available from www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2, which highlights: the applicable standards and guidance, as well as the air quality and dust monitoring methodologies to be implemented by nominated undertakers throughout construction.

1.1.4 The current worksites, as presented in Appendix A, Figure 1 to Figure 3, include:

Old Oak Common Depot (located in the London Borough of Hammersmith and Fulham)

- General Site - Conveyor demobilisation (Flat Iron), Concrete batching, materials management and haulage.
- Station Box – Concrete pours, D-Wall sealing, steel fixing.
- Great Western Main line – Piling excavation and breakdown, concrete pours.
- North London Line (NR): tree felling and vegetation clearance.
- Shared Accommodation Building – Drainage installations, fix reinforcement, pile recap backfill, FRC works.
- SAB East – Excavation of pile caps.
- Site haul roads and public roads adjacent to site - Cleaning with a road sweeper.
- Old Oak Common East – Cutting starter bars, work on abutments.
- Old Oak Common Lane – Utilities trial holes, and excavations.

Scheme 6

- OLE works: Installation on Carriage Lane, Acton Cutting Signal Gantry, Installation of Back Tie AT J02/31, Access Enablers Install SPS and Switching, North/ Central Pile Installation ATF Anchor.
- Civils works: North Pole Depot Compound, Acton Cutting Signal Gantry, OLE Fabrication Unit, Asset 4 Enabling Works, Acton Cutting Mains Side REB, Brownfield UTX East Compound, Drainage Outfall 3 Installation of Drainage Enabling Works for CMS.

Victoria Road Crossover Box and Flat Iron Site

- Crossover Box construction;
- Tunnel Boring Machine preparation; and
- Materials management.

Willesden Euro Terminal

- Excavated material spoil management and onward removal by rail.

Atlas Road

- Materials management (tunnel boring machine arisings).

Green Park Way Vent Shaft

- Vent shaft construction and materials management.

Mandeville Road Vent Shaft

- Vent shaft construction and materials management.

Westgate Vent Shaft

- Vent shaft construction and materials management.

1.1.5 Nineteen (19) dust monitors are installed around these worksites, where works are underway. These sites returned a medium to high dust risk rating.

1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor presented in Figure 4. All continuous dust monitoring is undertaken using indicative monitors. Despite being Environment Agency (MCERTS) certified, indicative monitors carry a higher level of uncertainty than reference monitors, and therefore cannot be strictly compared with Air Quality Standards for human health and the environment. The purpose of the monitoring undertaken is to ensure the effectiveness of the on-site mitigation.

1.1.7 The trigger level for PM_{10} concentrations of 190 µg/m^3, over a 1-hour period, in accordance with the updated guidance document '*Guidance on Monitoring in the Vicinity of Demolition and Construction Sites – (October 2018)*' has been applied.

1.1.8 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.

1.1.9 Diffusion tube monitoring of Nitrogen Dioxide (NO_2) is undertaken at six (6) locations around highways within the LBE as part of the management of air quality where significant effects occur as a result of the scheme.

1.1.10 Diffusion tube monitoring results are as provided from the laboratory analysis, and therefore still require various analysis and adjustments to be undertaken. Final corrected

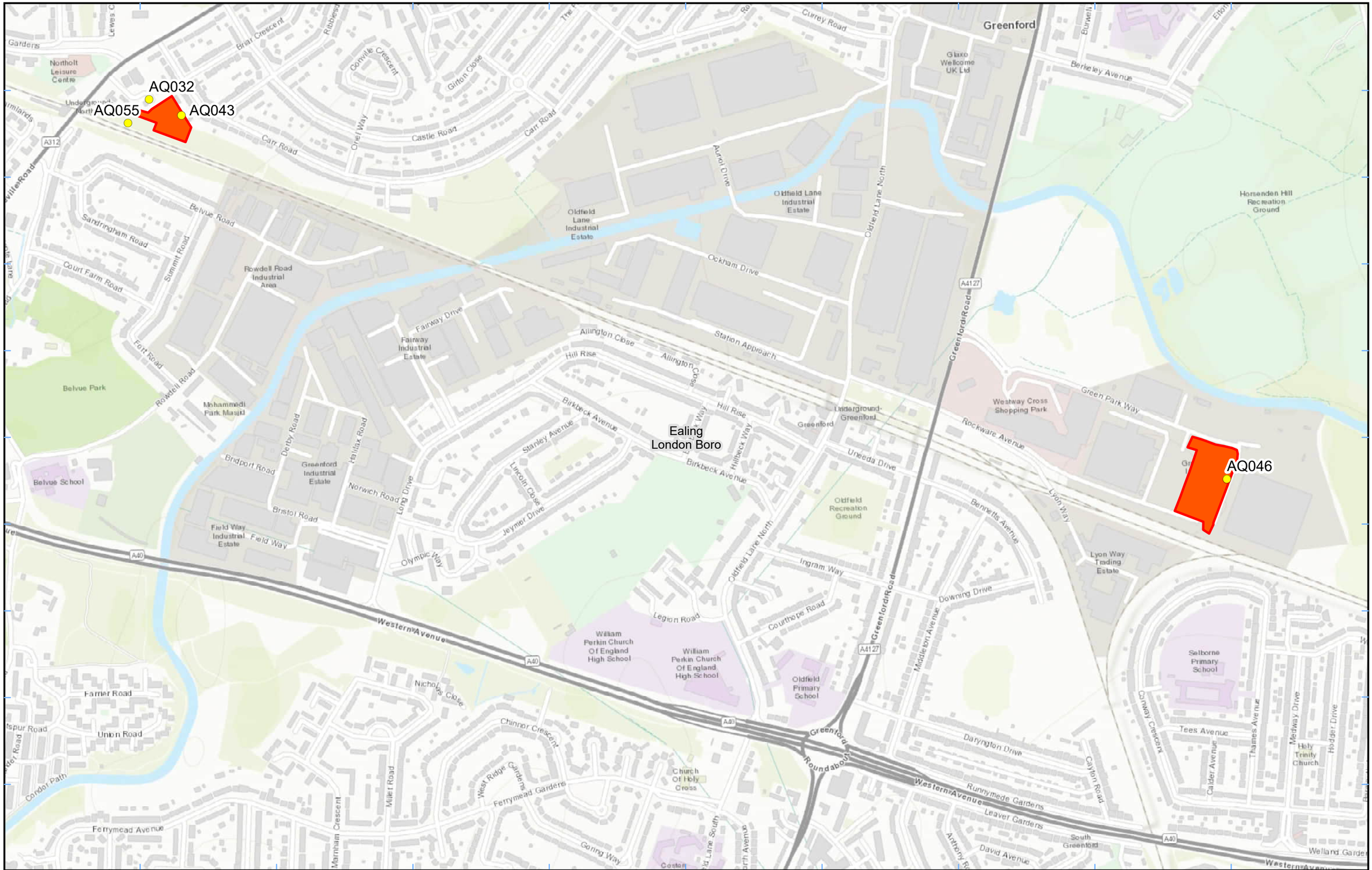
results will be presented and described in the annual report. However, based on the results to date, no unexpected values were recorded during the monitoring period.

1.1.11 NO_2 monitoring locations and results are presented in Appendix C, Table 3, together with the 2024 running mean.

1.1.12 There were no (0) complaints received during the reporting period (September 2024).

Appendix A – Worksites and Monitoring Locations

Figures 1 to 3: Worksites and Monitoring Locations within the LBE



Legend

Dust Monitor
District Borough Unitary Boundaries
Worksite

Map Number

Map Name

Worksite & Monitoring Locations In LBE (Sheet 1)

London Borough of Ealing

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:7,000

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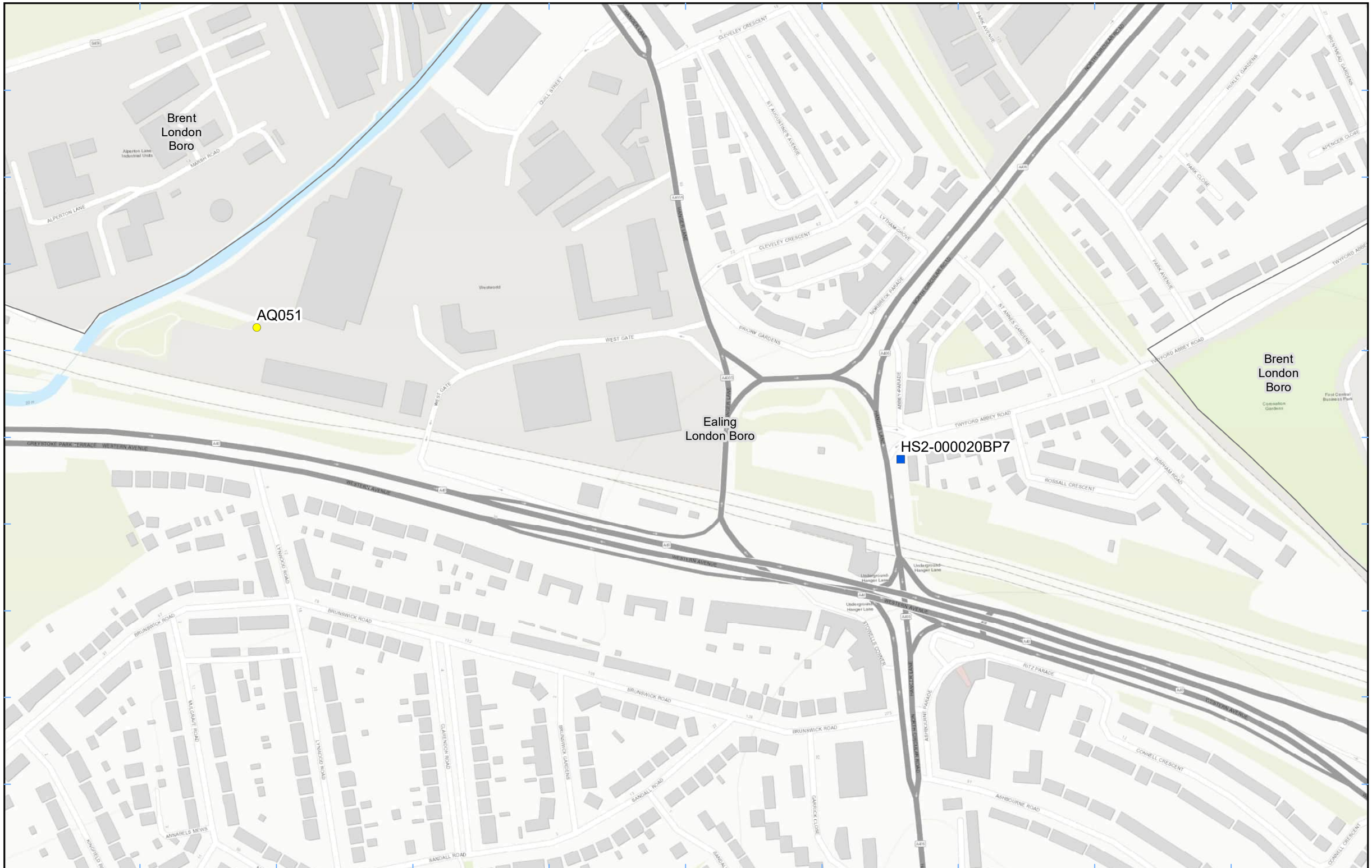
Metres

Doc Number:

Date: 18/05/23



Legend

- Diffusion Tube
- District Borough Unitary Boundaries
- Dust Monitor

Map Number

Map Name

Monitoring Locations
In LBE (Sheet 2)

London Borough of Ealing

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway,
Birmingham B4 6GA.

Scale at A3: 1:3,000

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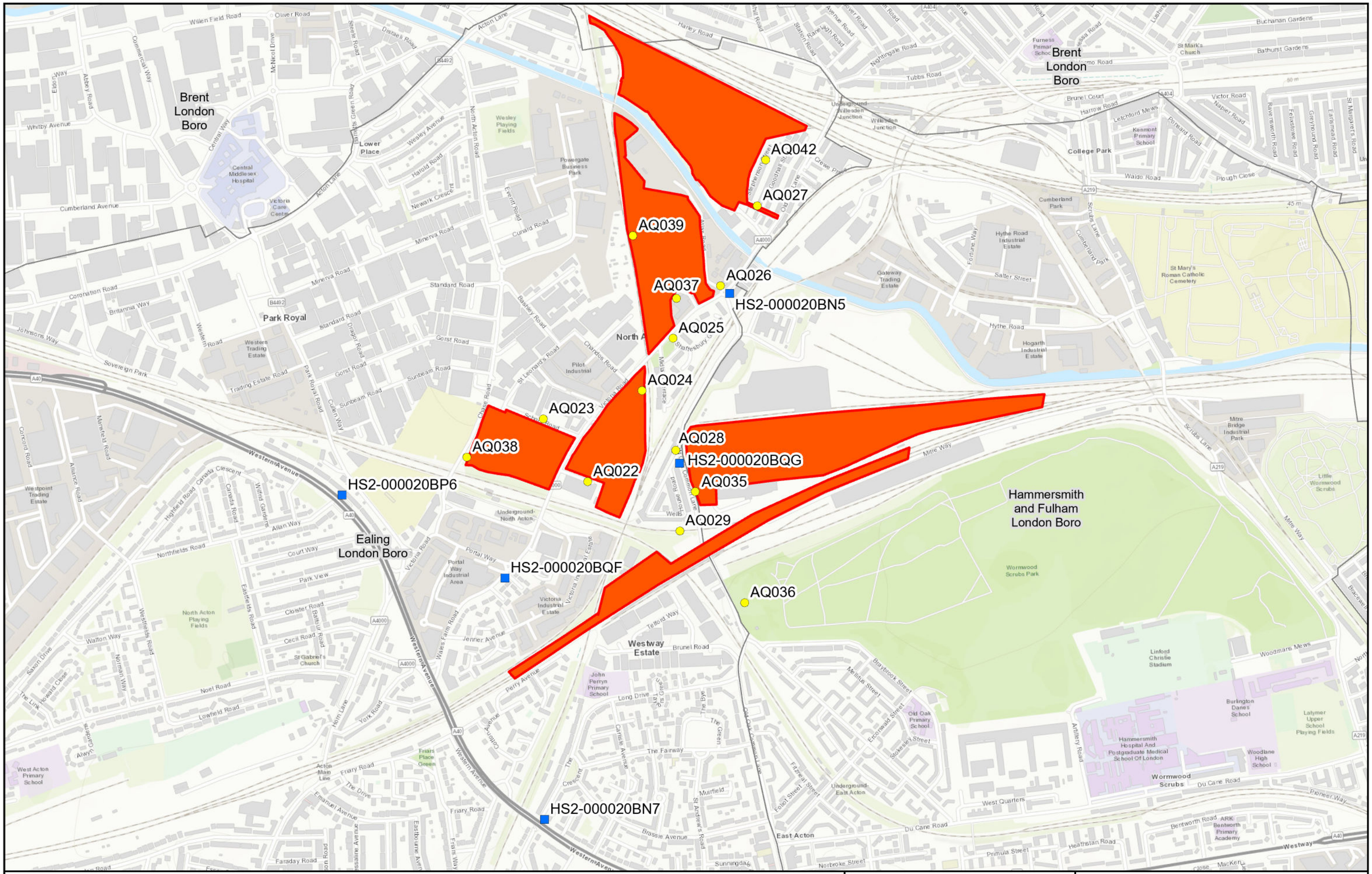
Doc Number:

Date: 26/04/22



Legend

- Diffusion Tube
- Worksite
- Dust Monitor
- District Borough Unitary Boundaries

Service Layer Credits: World Topographic Map: Esri UK, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA

Map Number

Map Name

Worksite and Monitoring Locations In LBE (Sheet 3)

London Borough of Ealing

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:9,000

Metres

Doc Number:

Date: 09/08/24

Appendix B – Dust Monitoring Results

Table 1: Dust Monitoring Locations and Results

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM_{10} concentration ($\mu g/m^3$)	Minimum 1-hour PM_{10} concentration ($\mu g/m^3$)	Maximum 1-hour PM_{10} concentration ($\mu g/m^3$)	Number of 1-hour periods exceeding trigger level of 190 $\mu g/m^3$	Data capture (%)
AQ022	521072, 181985	Boden House	M	Yes	N	22.4	1.5	1356.6	8	100.0
AQ023	520956, 182149	School Road	M	Yes	N	13.3	1.1	49.0	0	100.0
AQ024	521214, 182223	Braitrim House	M	Yes	N	24.6	1.4	2106.1	7	100.0
AQ025	521295, 182360	Victoria Road	M	Yes	N	23.5	2.1	255.1	2	99.9
AQ026	521419, 182497	Old Oak Lane	M	Yes	N	12.0	1.0	118.9	0	100.0
AQ027	521515, 182706	Channel Gate Road	M	Yes	N	16.0	2.2	312.5	3	100.0
AQ028	521302, 182067	Wells House Road	M	Yes	N	13.0	1.0	103.3	0	100.0
AQ029	521453, 182132	Old Oak Common	H	Yes	N	11.7	1.2	64.1	0	99.9
AQ032	513402, 184536	Badminton Close	M	Yes	N	9.4	1.0	40.8	0	100.0
AQ035	521353, 181959	Old Oak Common	H	Yes	N	13.8	1.2	102.7	0	99.3
AQ036	521482, 181668	UTX South – Triangle Site	M	Yes	N	10.6	1.7	44.4	0	86.8
AQ037	521304, 182464	Atlas Road	M	Yes	N	13.8	1.3	94.1	0	100.0

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM_{10} concentration ($\mu g/m^3$)	Minimum 1-hour PM_{10} concentration ($\mu g/m^3$)	Maximum 1-hour PM_{10} concentration ($\mu g/m^3$)	Number of 1-hour periods exceeding trigger level of 190 $\mu g/m^3$	Data capture (%)
AQ038	520756, 182049	Chase Road	M	Yes	N	16.2	2.2	118.0	0	100.0
AQ039	521190, 182628	Atlas Road 2	M	Yes	N	17.1	1.3	170.8	0	100.0
AQ042	521537, 182826	Stephenson Road	M	Yes	N	17.1	2.3	197.2	1	100.0
AQ043	513468, 184504	Mandeville Road	M	Yes	N	9.9	1.4	41.4	0	100.0
AQ046	515593, 183764	Green Park Way	M	Yes	N	11.0	1.3	51.0	0	100.0
AQ051	517976, 182823	Westgate	M	Yes	N	10.6	1.4	100.9	0	100.0
AQ055	513359, 184488	Mandeville Road 2	M	Yes	N	11.5	1.4	42.1	0	100.0

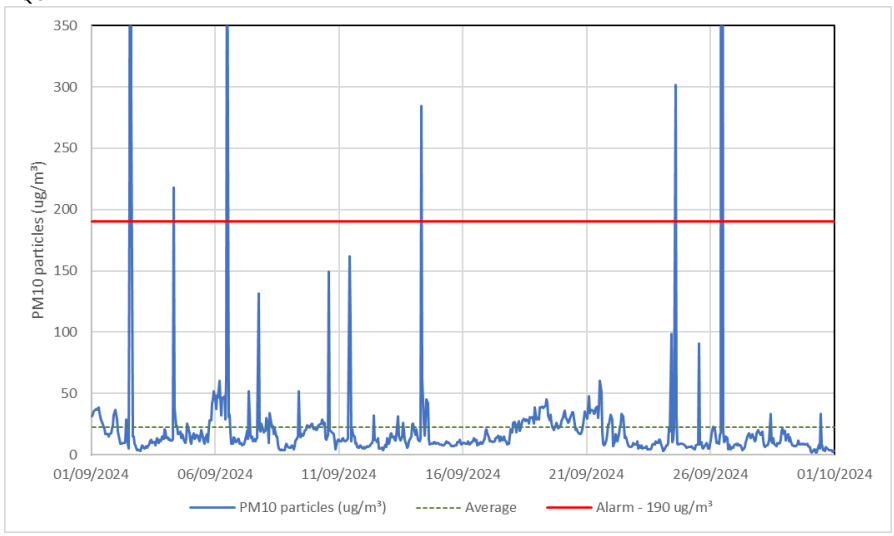
Table 2: Summary of exceedances during period (September 2024)

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ022	02/09/2024 12:01 – 13:00; 222.8 µg/m^3 13:01 – 14:00; 1033.4 µg/m^3 14:01 – 15:00; 289.2 µg/m^3 04/09/2024 07:01 – 08:00; 218.1 µg/m^3 06/09/2024 11:01 – 12:00; 489.6 µg/m^3 14/09/2024 07:01 – 08:00; 284.3 µg/m^3 24/09/2024 13:01 – 14:00; 301.9 µg/m^3 26/09/2024 10:01 – 11:00; 1356.6 µg/m^3	AQ022 is located on the car park roof of Boden House. The triggers were caused by 3rd Party contractor resurfacing works on the roof car park near to and directly adjacent to the monitor. The triggers were not associated with dust from HS2 works.	N/A
AQ024	23/09/2024 15:01 – 16:00; 199.4 µg/m^3 24/09/2024 06:01 – 07:00; 236.8 µg/m^3 26/09/2024 04:01 – 05:00; 705.1 µg/m^3 05:01 – 06:00; 1576.9 µg/m^3 06:01 – 07:00; 2106.1 µg/m^3 07:01 – 08:00; 1028.7 µg/m^3 30/09/2024 06:01 – 07:00; 296.9 µg/m^3	At the time of the trigger alerts, mostly in the early hours of the morning, there were no works underway on site or none on the 23rd that would give rise to excessive dust. From the 21st September there was also significant rainfall and it is considered the triggers were false and associated with high humidity levels. Tiny water droplets can sometimes be measured 'falsely' as particulates. It is also considered the monitor is need of a service due the erratic readings at the end of the month.	N/A
AQ025	20/09/2024 10:01 – 11:00; 199.1 µg/m^3 28/09/2024 14:01 – 15:00; 255.1 µg/m^3	The triggers were caused by 3rd Party contractor carrying out utilities works directly adjacent to the monitor. The triggers were not associated with dust from HS2 works.	N/A
AQ027	01/09/2024 21:01 – 22:00; 250.6 µg/m^3 22:01 – 23:00; 200.7 µg/m^3 02/09/2024 03:01 – 04:00; 312.5 µg/m^3	At the time of the trigger alerts at night and in the early hours of the morning it is considered the triggers were false and associated with high humidity levels and warm conditions. Tiny water droplets can sometimes be measured 'falsely' as particulates. The other on site monitor AQ042 also experienced similar spike in measured data in the early hours.	N/A

AQ042	02/09/2024 03:01 – 04:00; 197.2 µg/m^3	At the time of the trigger alert in the early hours of the morning there were no works underway on site and it is considered the trigger was false and associated with high humidity levels and warm conditions. Tiny water droplets can sometimes be measured 'falsely' as particulates. The other onsite monitor AQ027 also experienced similar spike in measured data.	N/A

Figure 4: Construction dust 1-hour mean indicative PM_{10} concentration for all dust monitors

AQ022



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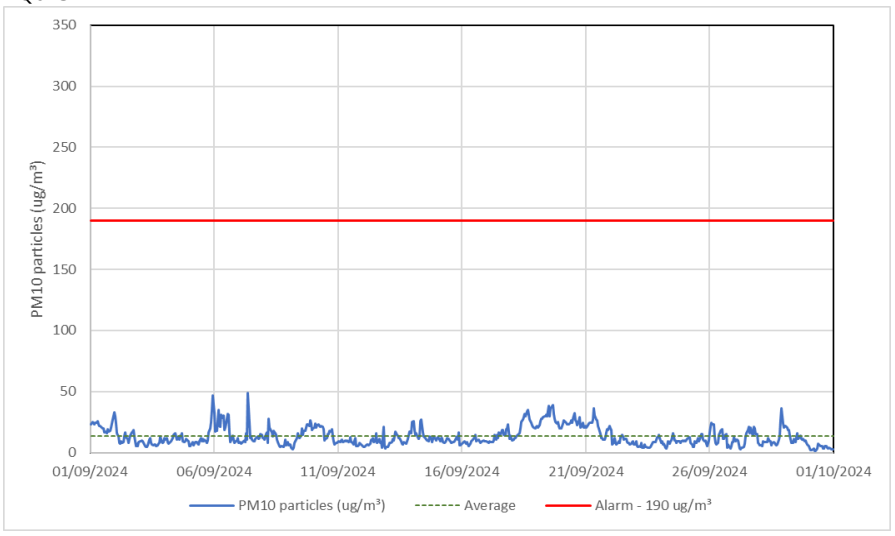

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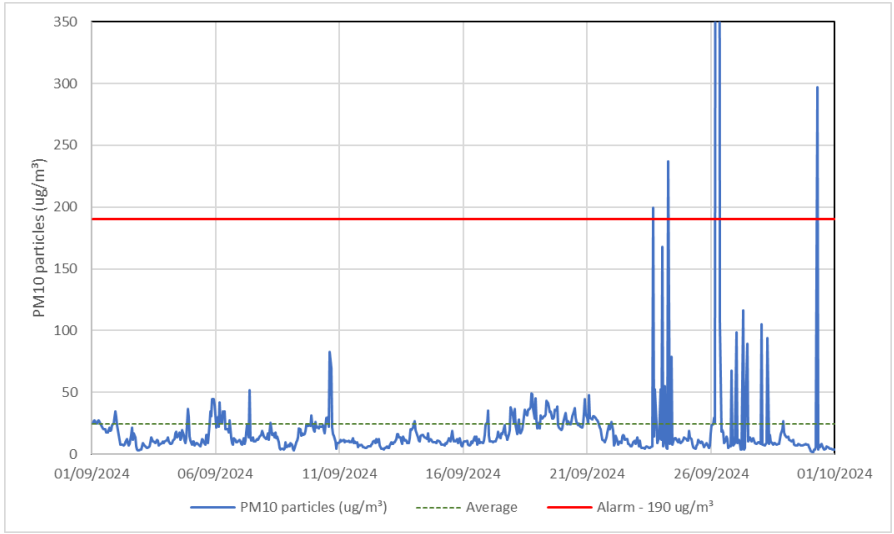

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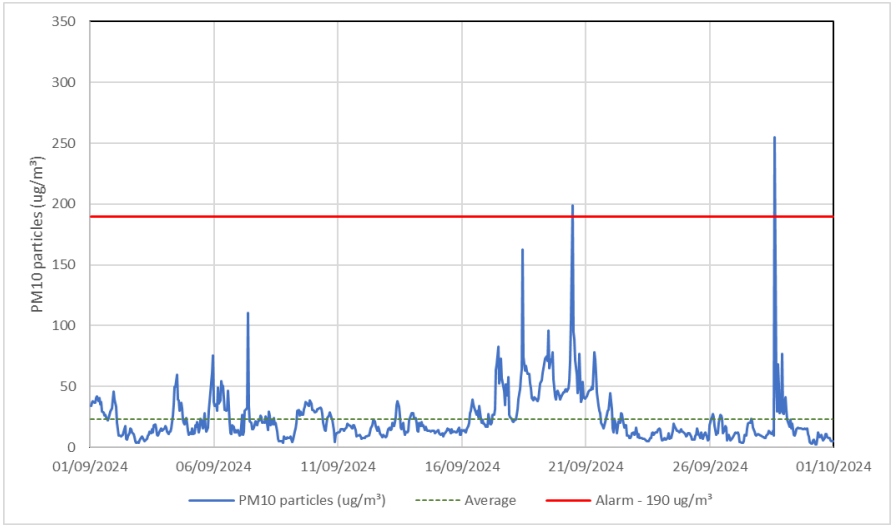

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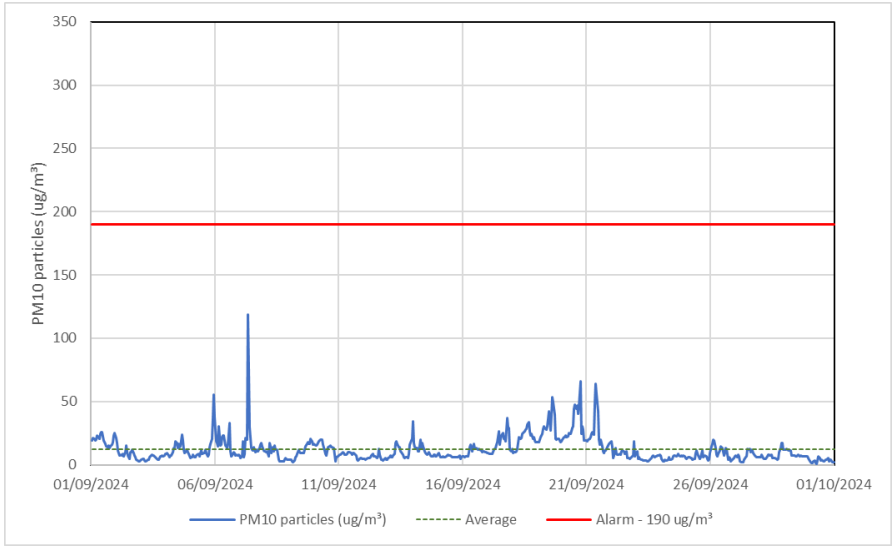

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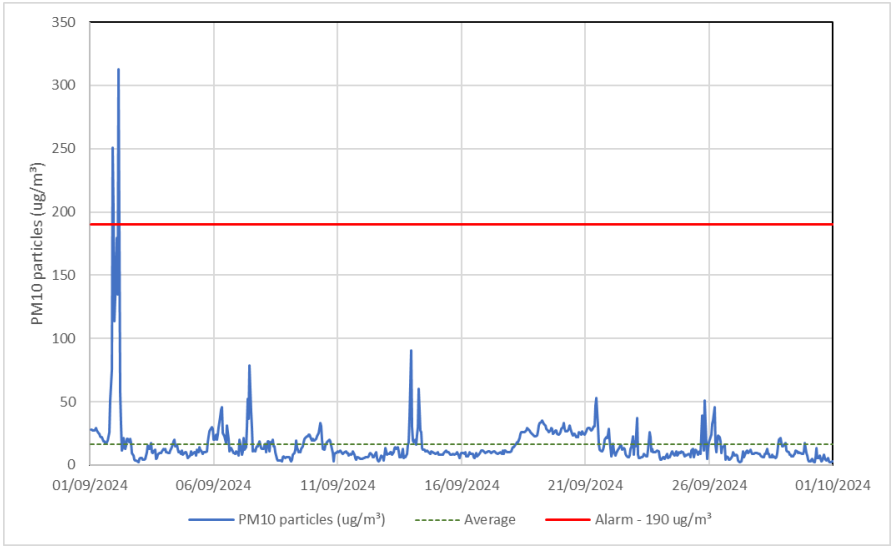

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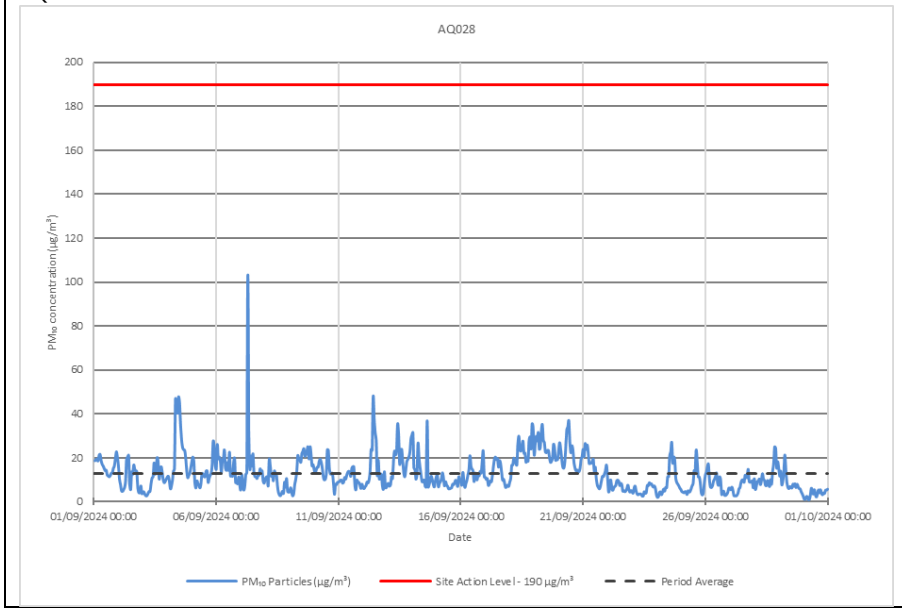

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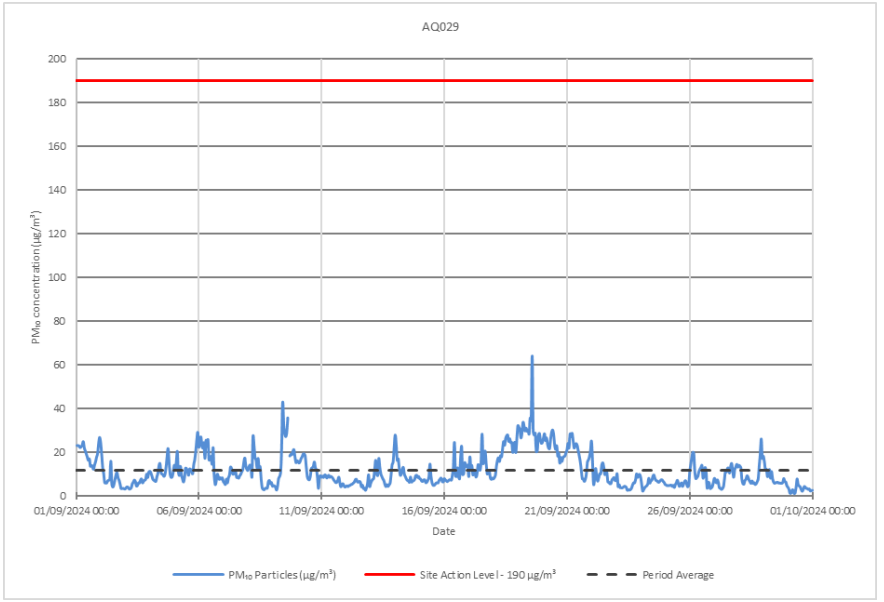

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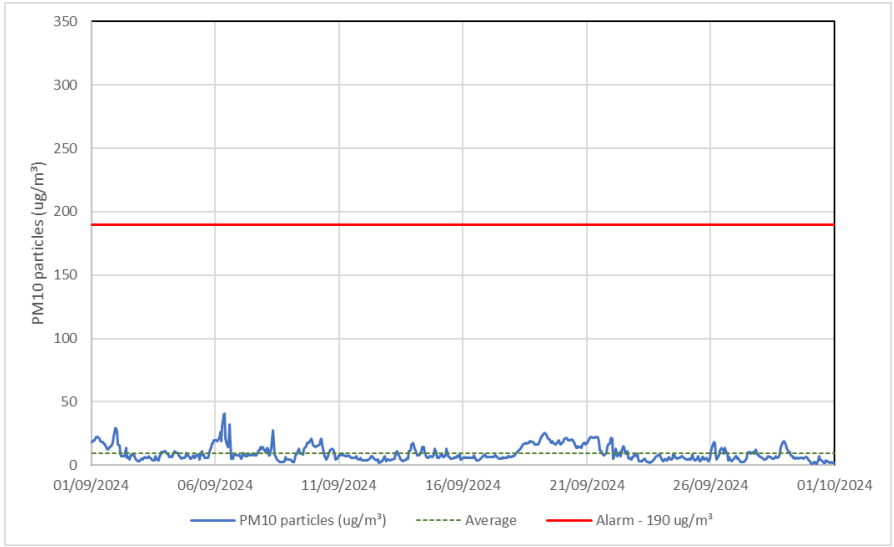

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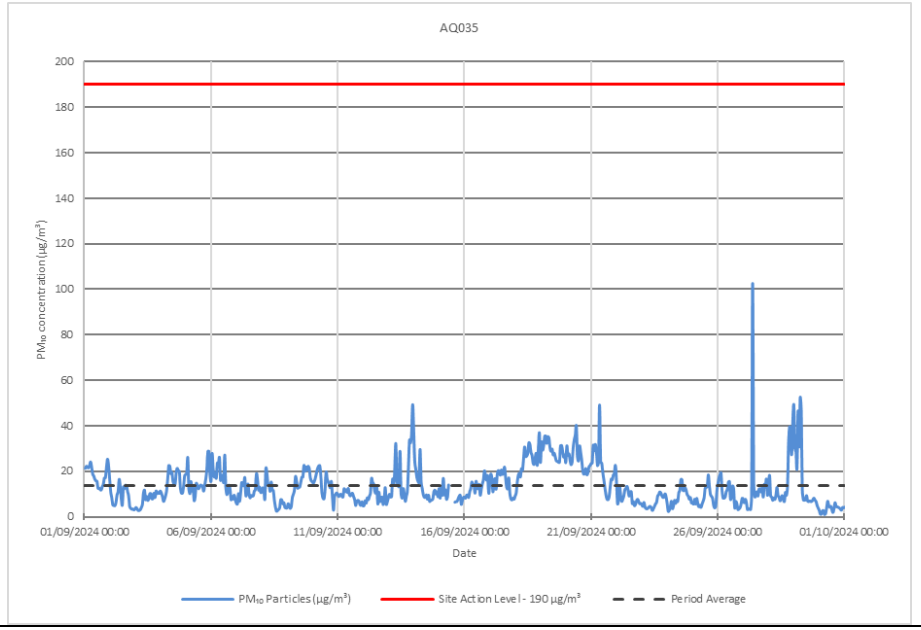

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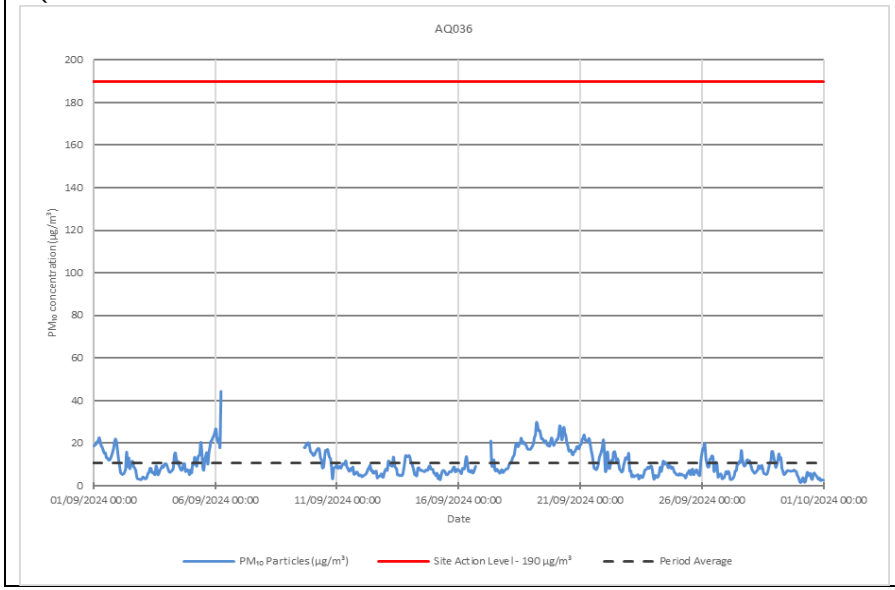

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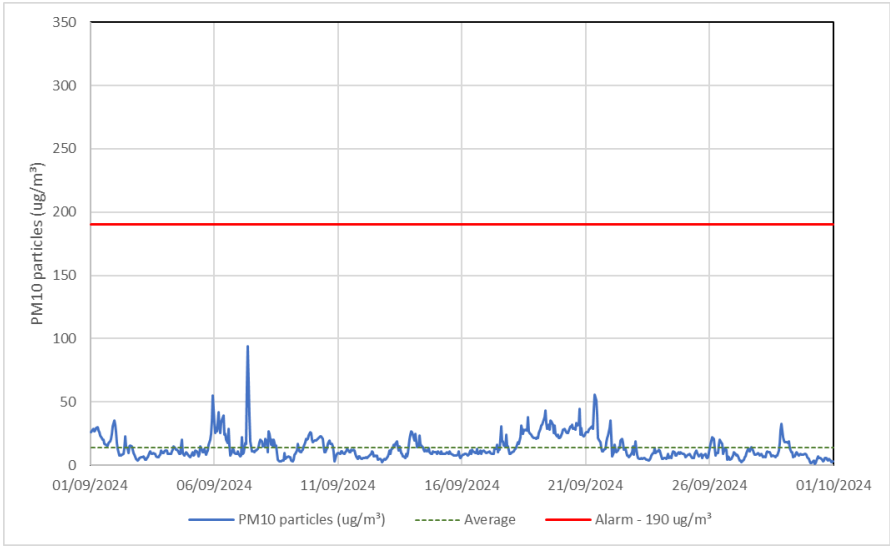

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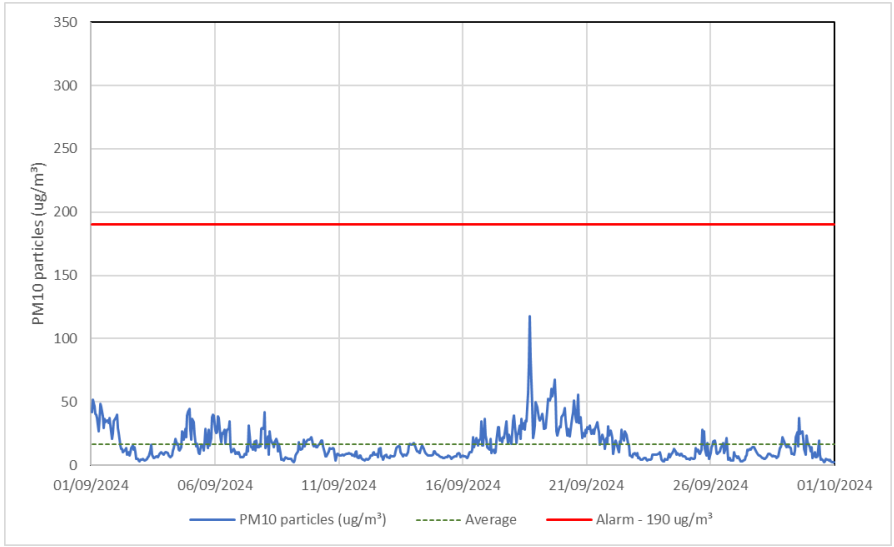

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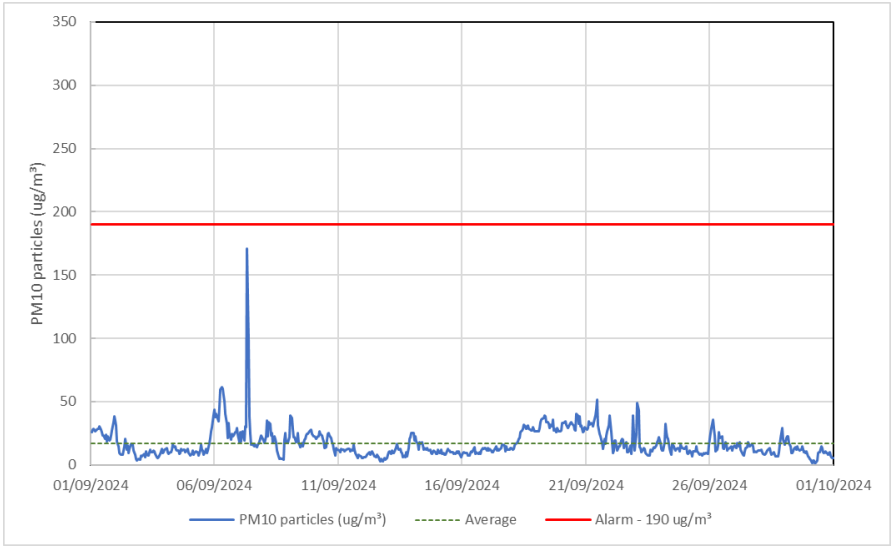

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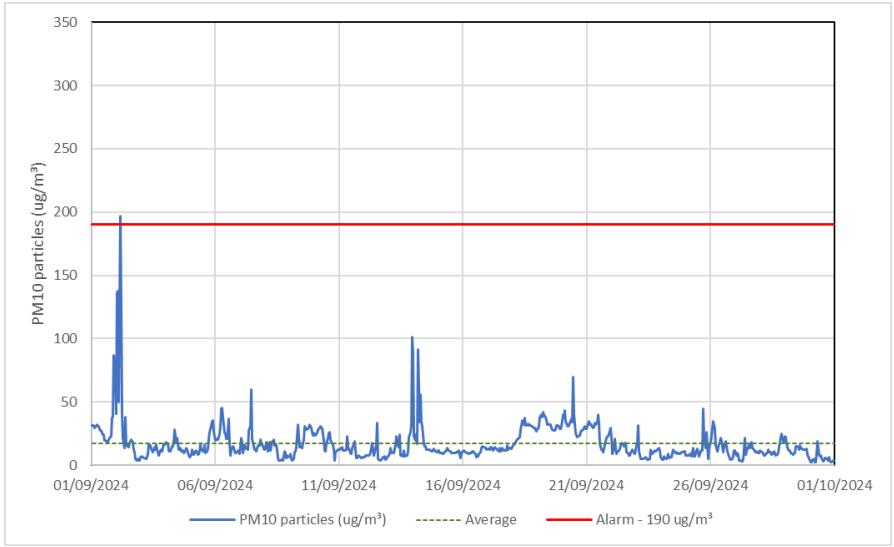

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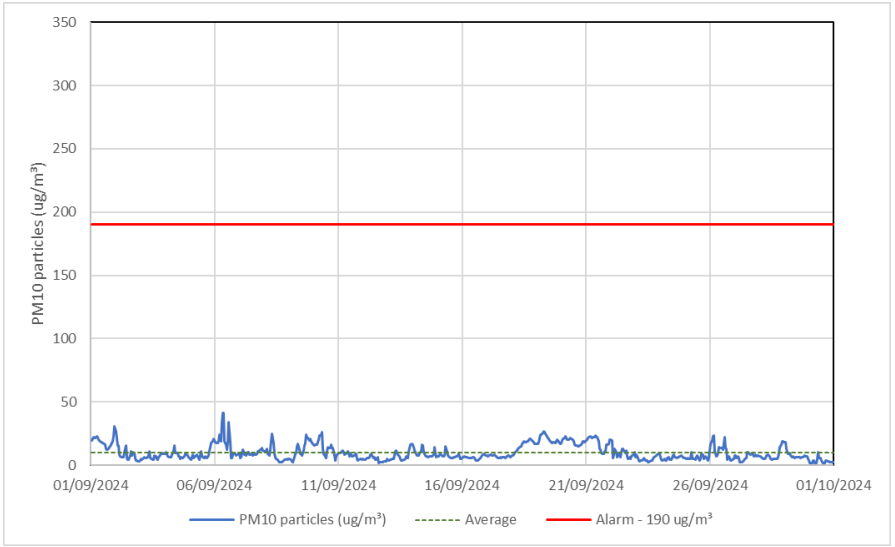

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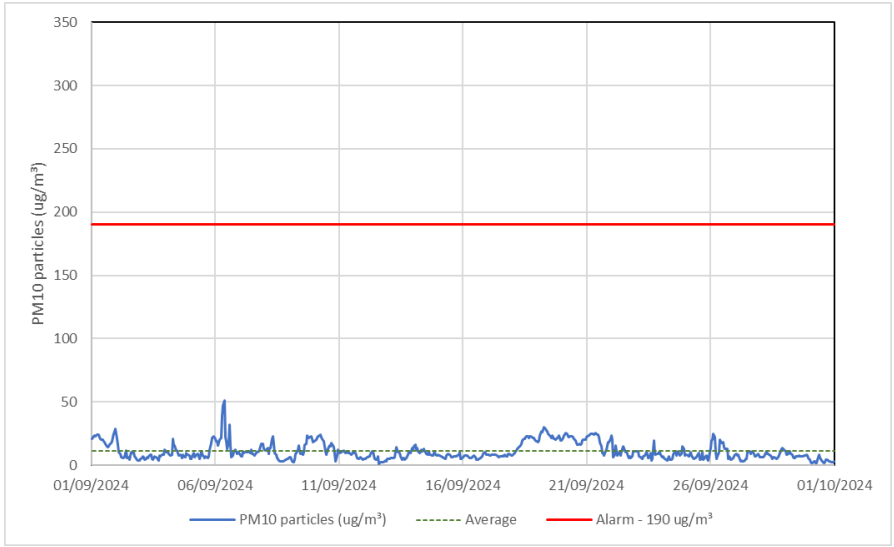

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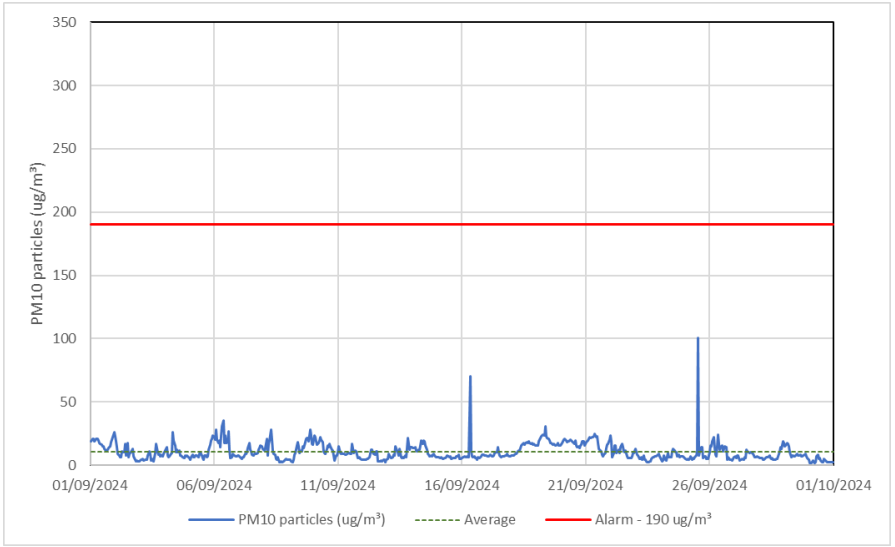

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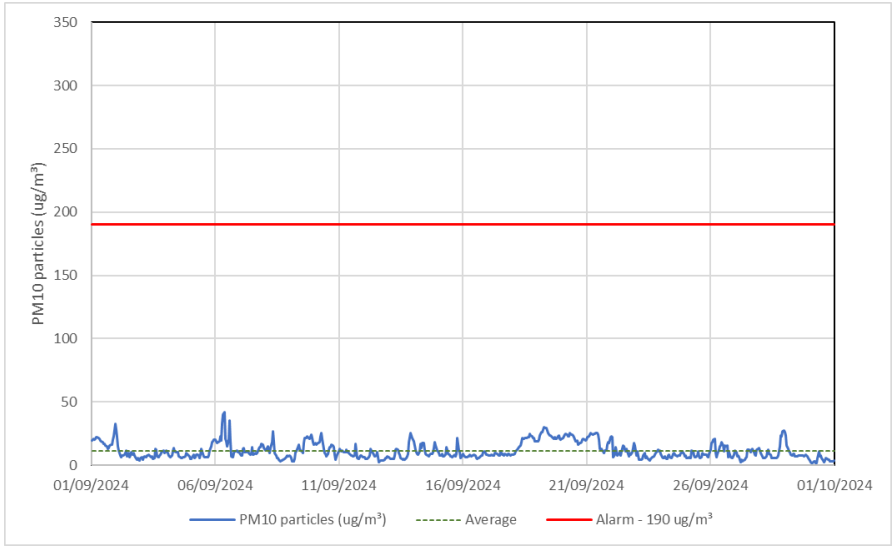

Appendix C – Air Quality Monitoring Results

Table 3: NO_2 monitoring locations around highways, NO_2 concentrations and monthly monitoring results with running mean for 2024 (µg/m^3)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean[1][2]
HS2-000020BN5	Sign post on Victoria Road	521443, 182477	55	46	43	35	40	40	40	40					42
HS2-000020BN7	The Approach street sign	520959, 181102	41	35	40	31	35	35	32	33					35
HS2-000020BQF	Conway Drive sign post	520856, 181733	48	46	40	39	46	41	35	36					41
HS2-000020BQG	Lamp post outside No 1. Wells House Road on Old Oak Common Lane	521312, 182033	Tube Missing	Tube Missing	Tube Missing	Tube Missing	41	39	25	38					36
HS2-000020BP6	Triplicate site next to the Ealing, Western Avenue Acton roadside automatic monitoring station	520430, 181950	44	44	37	27	35	32	30	29					35

[1] Note: to aid interpretation and conform with best practice, the monthly measurements in this table are reported rounded to the nearest whole number. The annual mean presented here is calculated based on laboratory data to 4 significant figures, rounded to a whole number, and therefore may differ slightly to a mean derived from averaging the rounded monthly measurements in the table.
[2] The annual mean for diffusion tubes presented in the table above still require various analysis and adjustments to be undertaken before comparison to the Air Quality Objectives. The final corrected annual mean will be presented in the HS2 Annual Air Quality Report.

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean[12]
HS2-000020BP7	Triplicate site next to the Ealing, Hangar Lane Gyratory roadside automatic monitoring station	518537, 182708	56	52	52	50	56	55	49	51					53