

Air Quality and Dust Monitoring Monthly Report – September 2023

London Borough of Ealing



Department for Transport

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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 2023 and September 2023 respectively.
- 1.1.2 Figure 1 to Figure 3 in Appendix A indicate 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 phase of works commenced in October 2019 and is expected to be completed by 2025. 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 - Concrete Works, Drainage and Kerb Installation;
- Station Box - Concrete, D-Wall breakdown, steel fixing and excavation;
- Station Access Retaining Wall - Piling platform construction;
- UTPZ / CRL Retaining Wall - Breaking, Backfill, Concrete cutting;
- Site haul roads and public roads adjacent to site - cleaning with a road sweeper;
- Satellite Sites / Central Line east - OOC Pile mat construction, Piling and Slit trench excavation; and
- Old Oak Common Lane – Laying paving slabs.

Scheme 6

- Civil works;
- E&P works; and
- OLE works.

Victoria Road Crossover Box and Flat Iron Site

- Crossover Box construction; 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

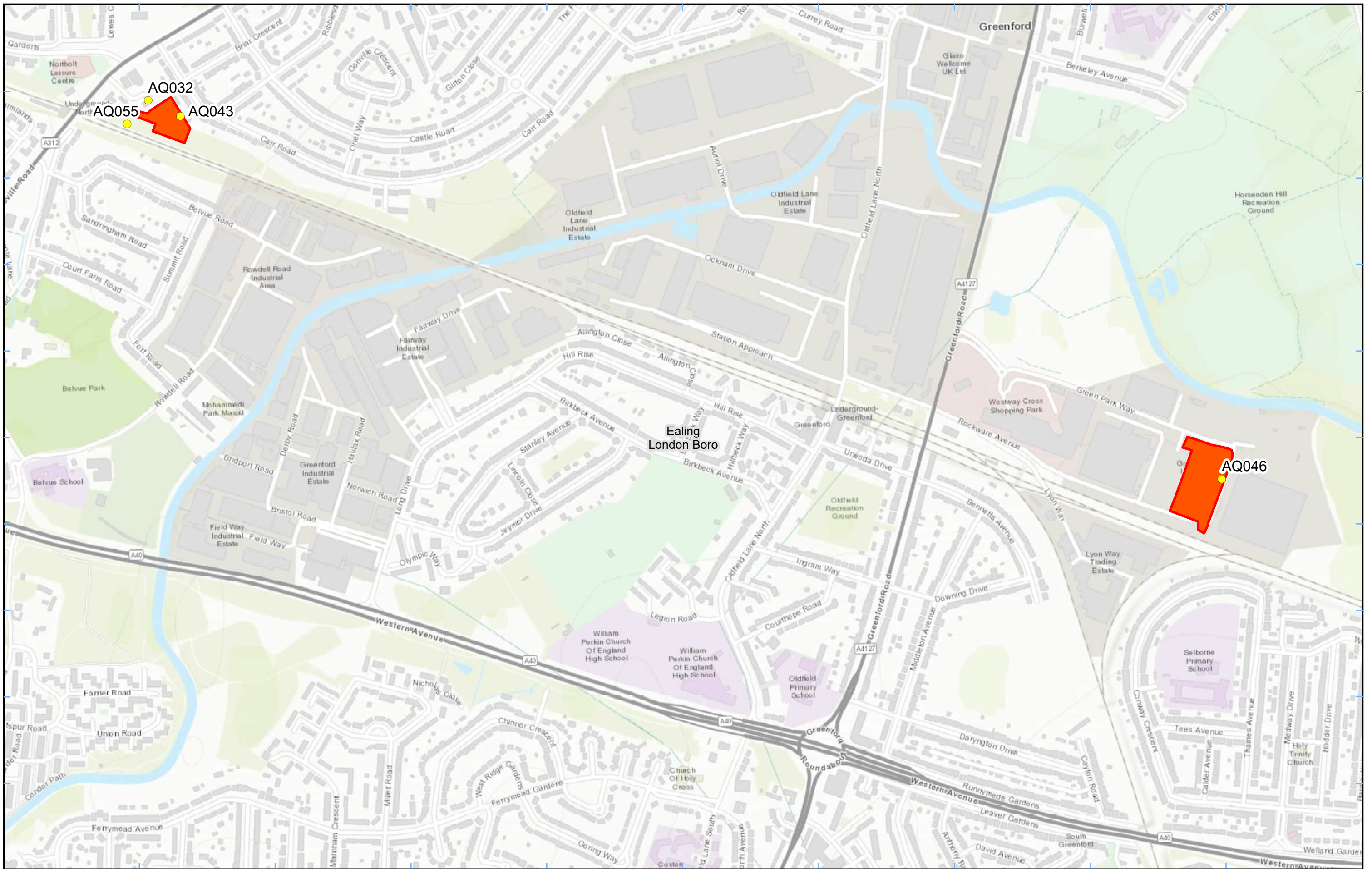
- Vent shaft construction; and
- Materials management.

- 1.1.5 Eighteen (18) dust monitors are installed around worksites, where works are underway. These sites returned a medium 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, 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 PM₁₀ concentrations of 190 µg/m³, 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 Dust trigger alerts were recorded during the monitoring period (September 2023) and are reported in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in September 2023. For AQ024 this was due to power supply issues, which have since been resolved. For AQ025 this was due to a fault with the monitor which was subsequently repaired.
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) 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.

- 1.1.11 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.
- 1.1.12 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2023 running mean.
- 1.1.13 There were no (0) complaints received during this reporting period.

Appendix A – Worksites and Monitoring Locations

Figure 1 to 3: Worksites and monitoring locations within the LBE



Legend
 Dust Monitor District Borough Unitary Boundaries
 Worksite

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Map Number

Map Name

**Worksite & Monitoring Locations
 In LBE (Sheet 1)**

London Borough of Ealing



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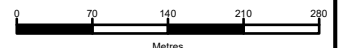
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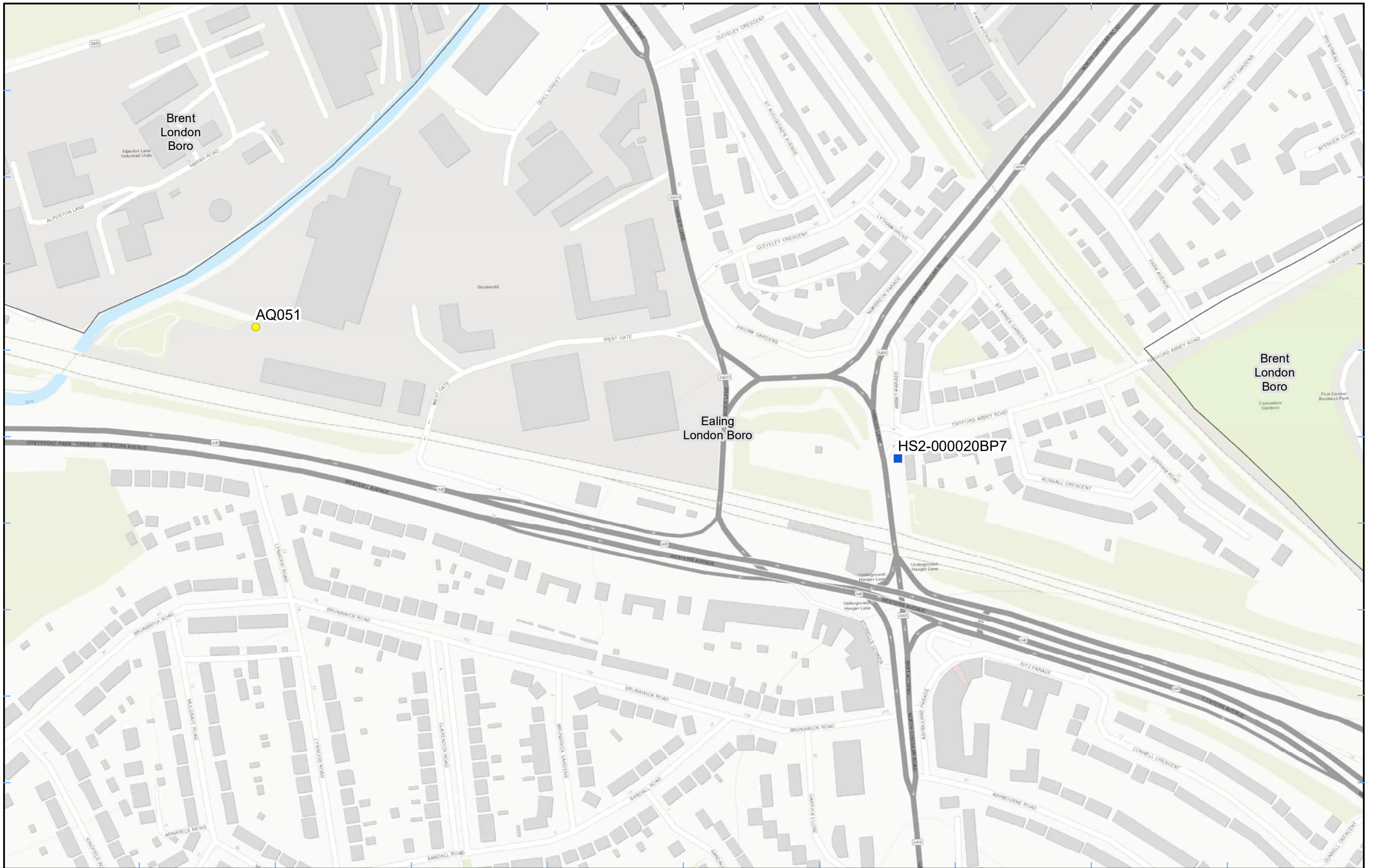
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Date: 18/05/23



- Legend**
- Diffusion Tube
 - Dust Monitor
 - District Borough Unitary Boundaries

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Map Number
 Map Name
**Monitoring Locations
 In LBE (Sheet 2)**
 London Borough of Ealing

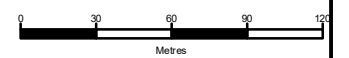


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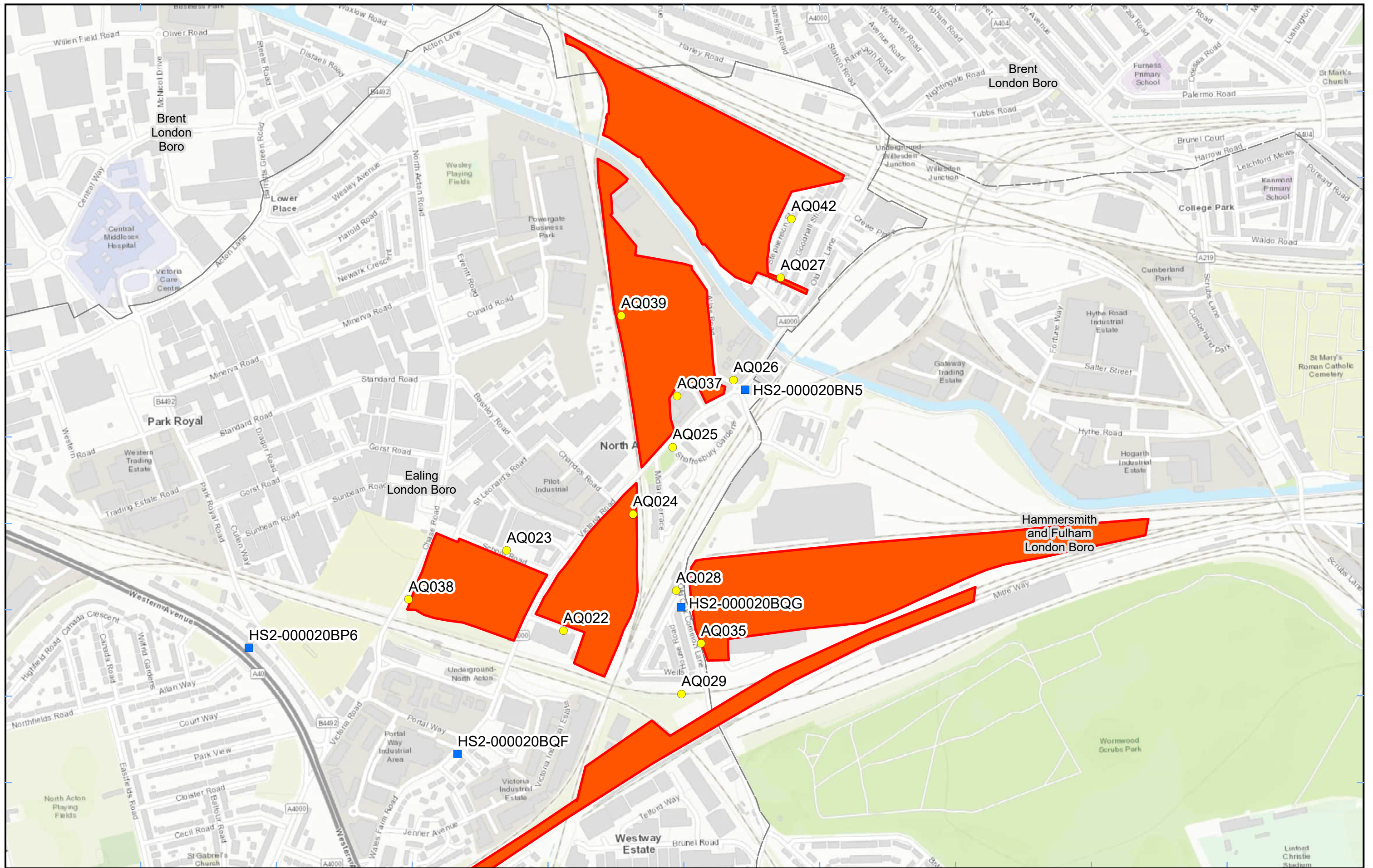
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Legend
■ Diffusion Tube ■ Worksite
● Dust Monitor District Borough Unitary Boundaries

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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBE (Sheet 3)**
 London Borough of Ealing



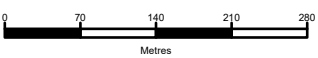
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Date: 10/10/23

Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and September 2023 results

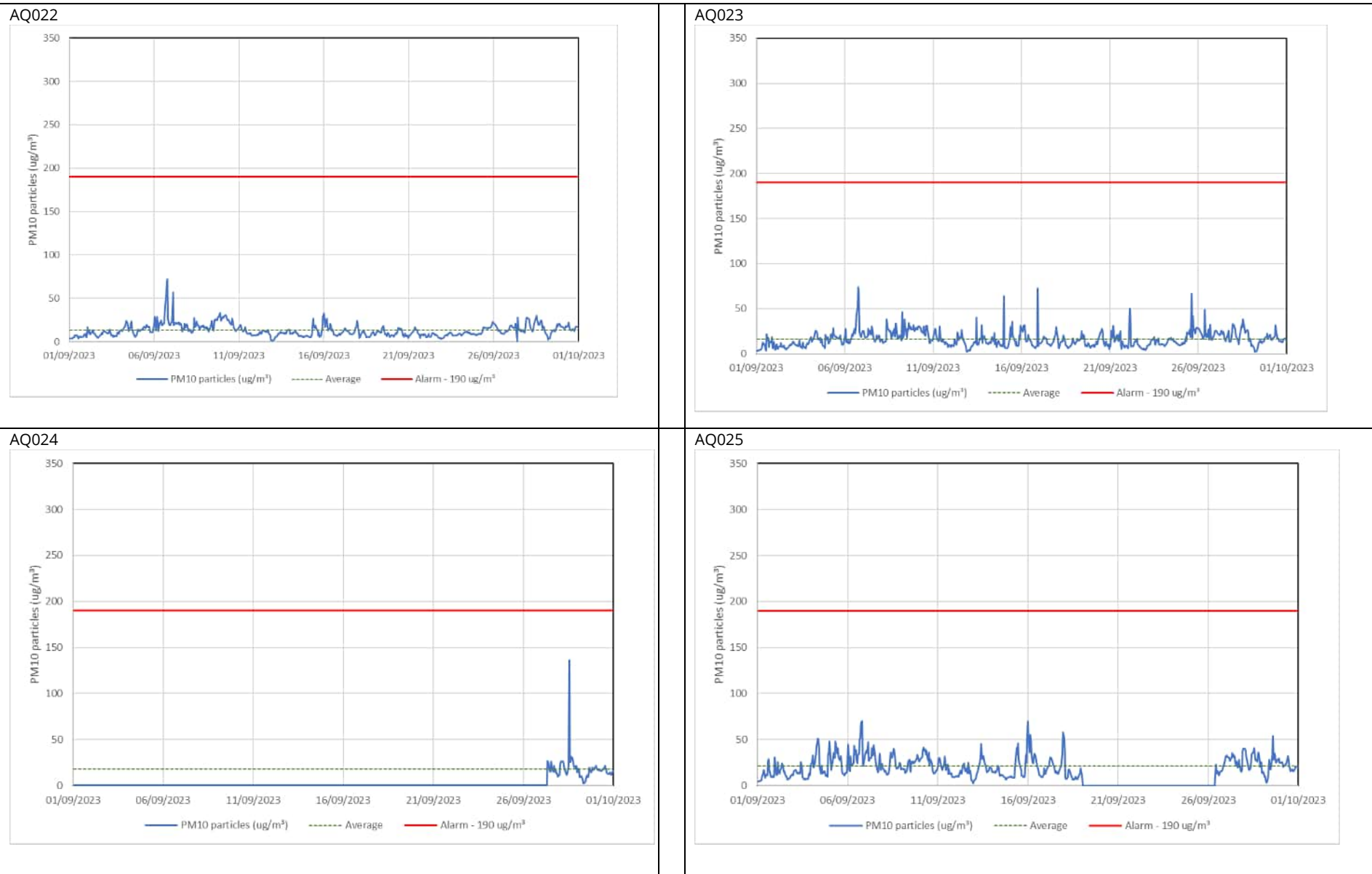
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ022	521072, 181985	Boden House	M	Yes	N	13.1	1.2	72.3	0	99.9
AQ023	520956, 182149	School Road	M	Yes	N	16.4	2.1	73.7	0	100.0
AQ024	521214, 182223	Braitrim House	M	Yes	N	18.1	2.3	136.3	0	12.2
AQ025	521295, 182360	Victoria Road	M	Yes	N	21.4	2.6	70.3	0	75.4
AQ026	521419, 182497	Old Oak Lane	M	Yes	N	24.5	1.5	190.3	1	100.0
AQ027	521515, 182706	Channel Gate Road	M	Yes	N	17.6	1.4	273.0	1	100.0
AQ028	521302, 182067	Wells House Road	M	Yes	N0	20.7	1.7	125.4	0	100.0
AQ029	521453, 182132	Old Oak Common	H	Yes	No	12.8	1.5	53.9	0	99.9
AQ032	513402, 184536	Badminton Close	M	Yes	N	10.9	1.5	59.1	0	99.9
AQ035	521353, 181959	Old Oak Common	H	Yes	No	18.4	2.0	74.7	0	100.0
AQ037	521304, 182464	Atlas Road	M	Yes	N	26.4	0.0	6502.7	4	91.4
AQ038	520756, 182049	Chase Road	M	Yes	N	19.7	1.9	142.9	0	100.0

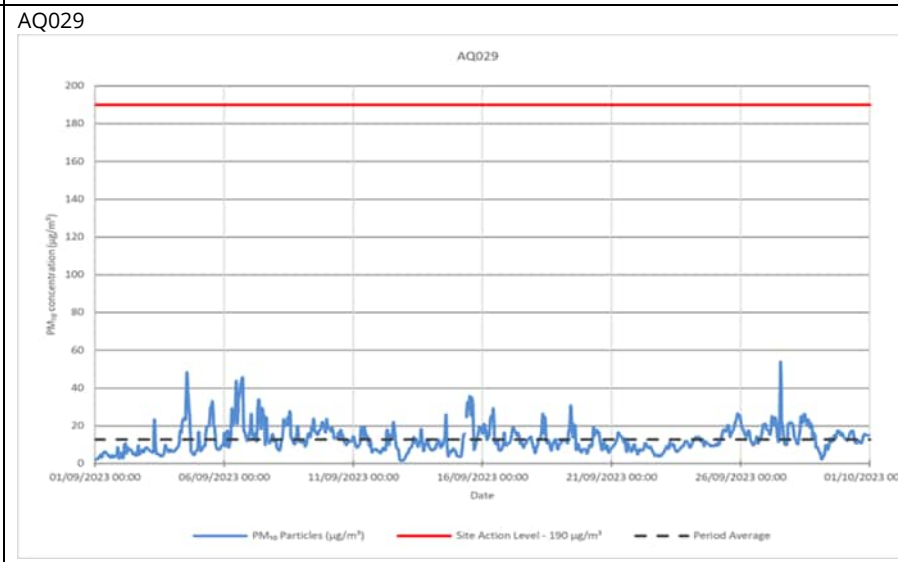
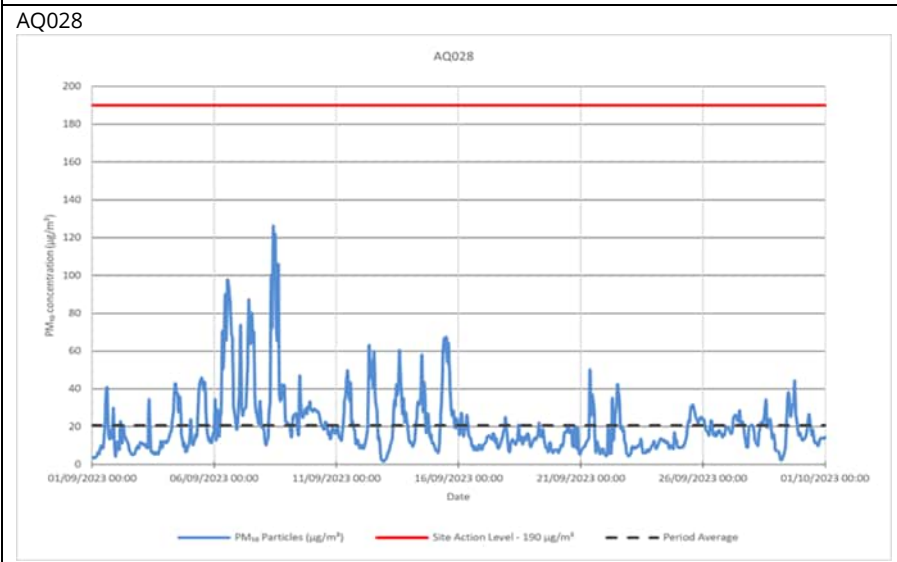
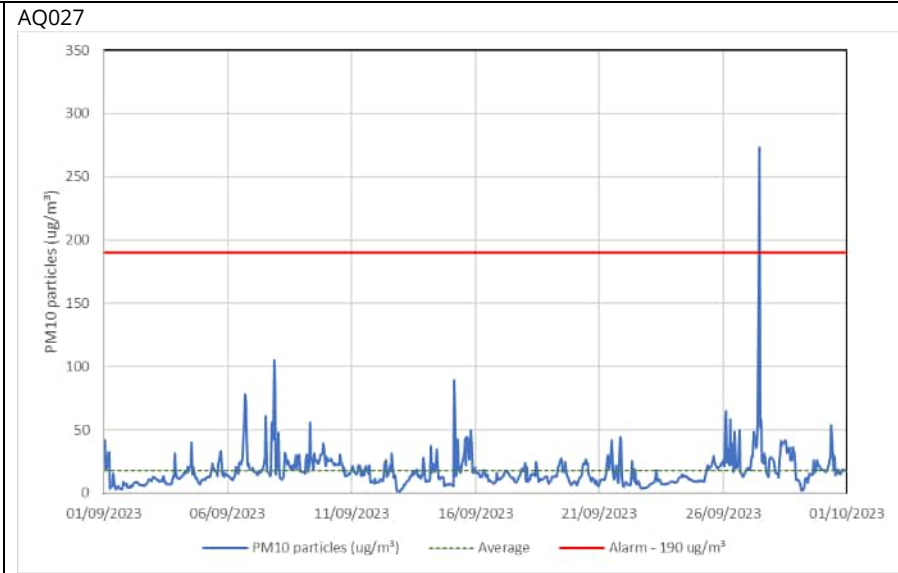
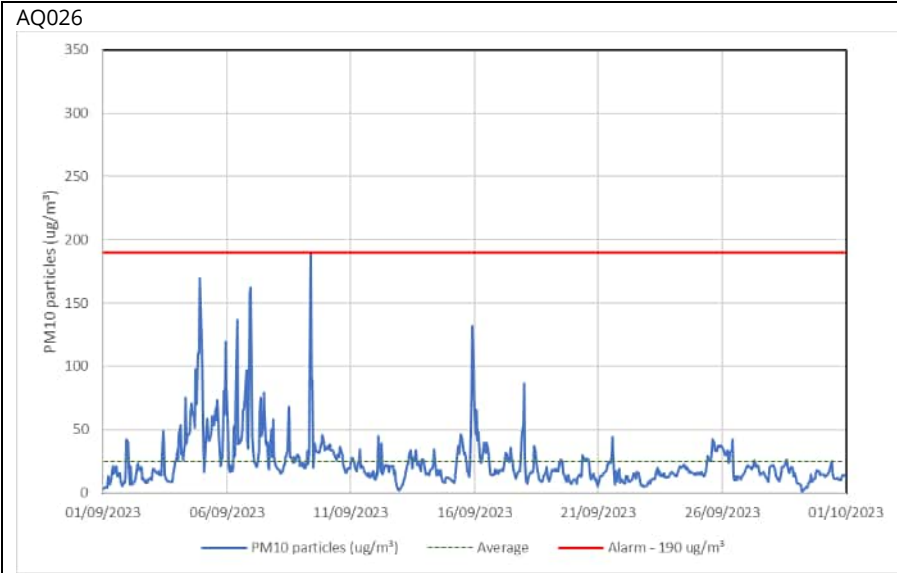
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ039	521190, 182628	Atlas Road 2	M	Yes	N	19.1	3.0	170.7	0	100.0
AQ042	521537, 182826	Stephenson Road	M	Yes	N	16.3	1.9	91.4	0	100.0
AQ043	513468, 184504	Mandeville Road	M	Yes	N	12.1	1.4	61.5	0	100.0
AQ046	515593, 183764	Green Park Way	M	Yes	N	14.4	1.4	90.3	0	100.0
AQ051	517976, 182823	Westgate	M	Yes	N	14.8	2.4	82.5	0	100.0
AQ055	513359, 184488	Mandeville Road 2	M	Yes	N	13.2	2.1	62.4	0	100.0

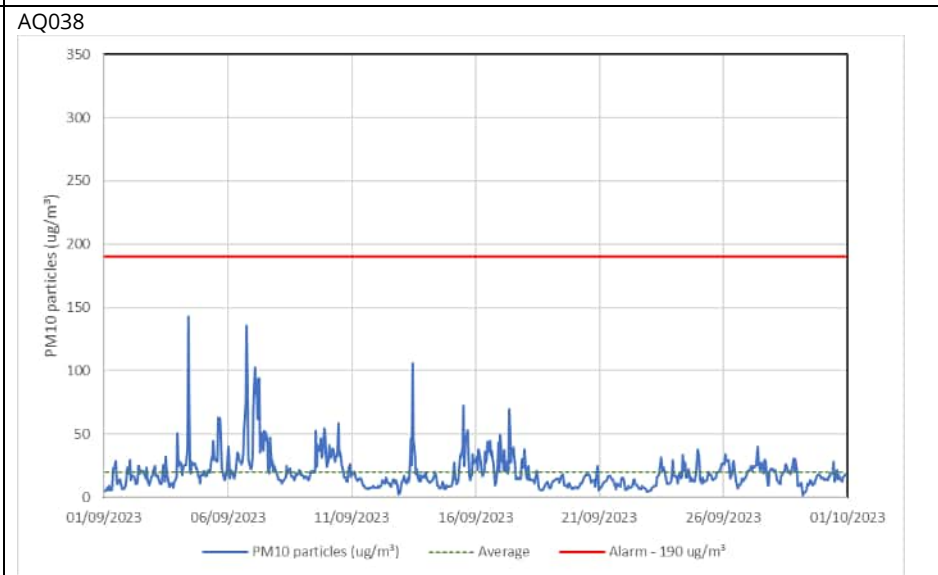
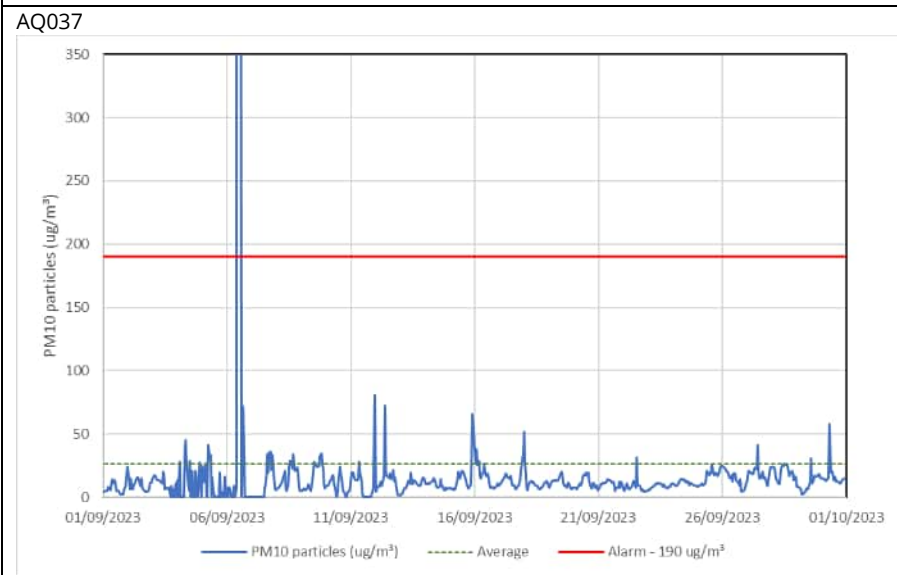
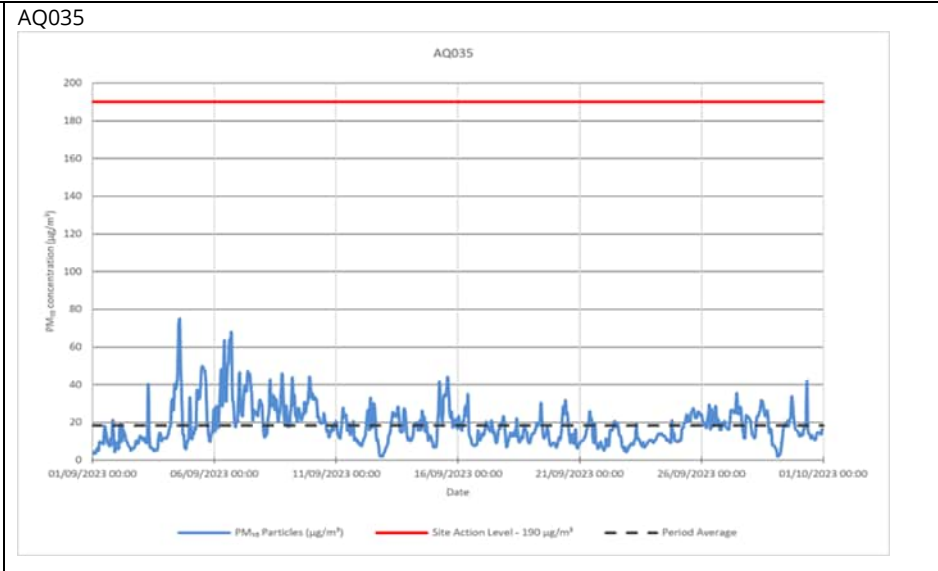
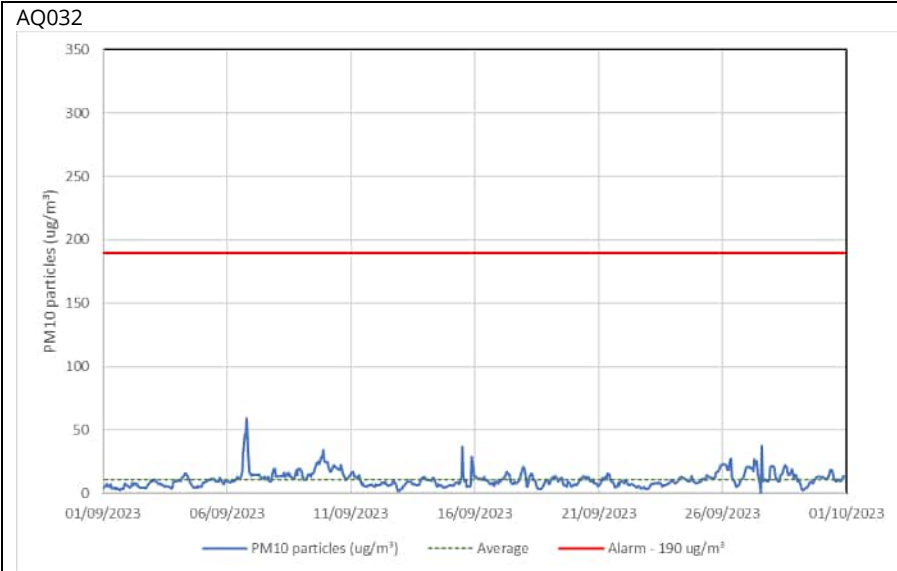
Table 2: Summary of exceedances of trigger level in September 2023

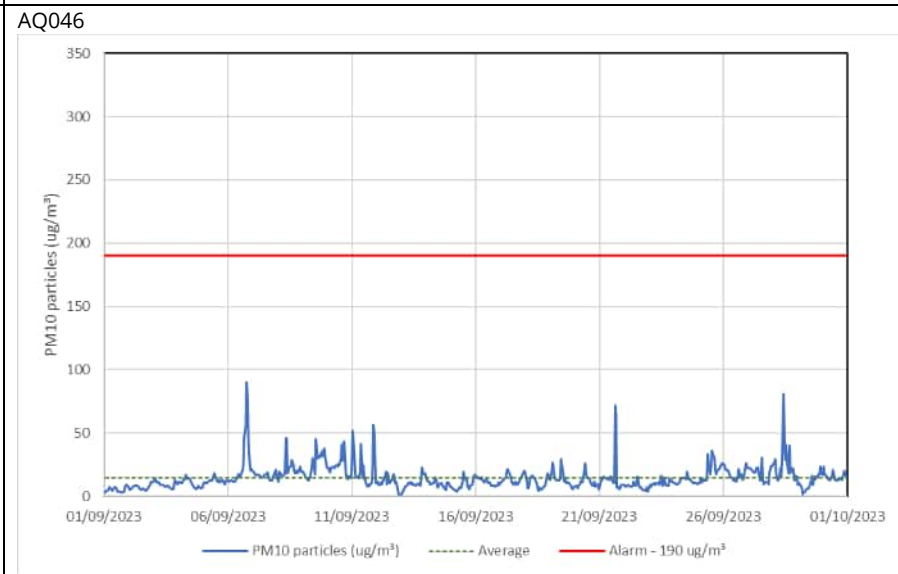
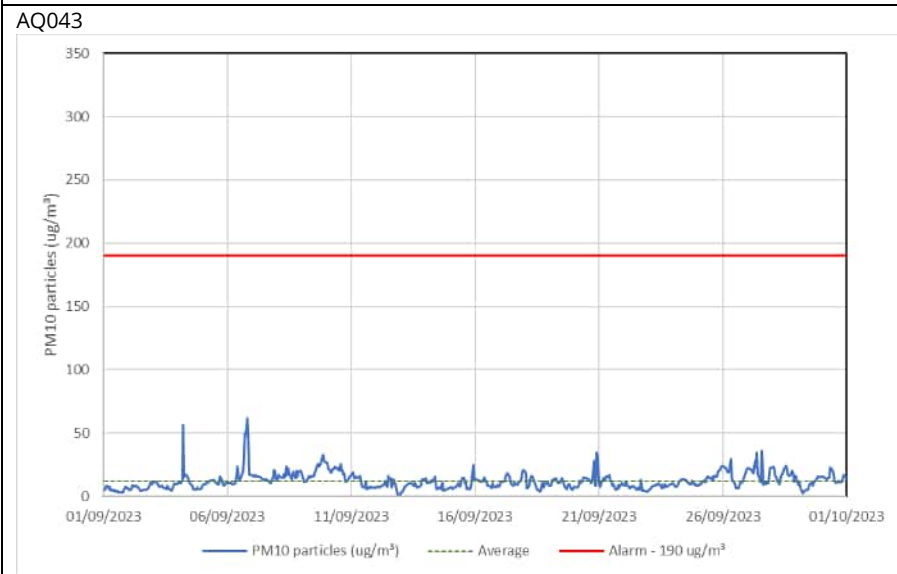
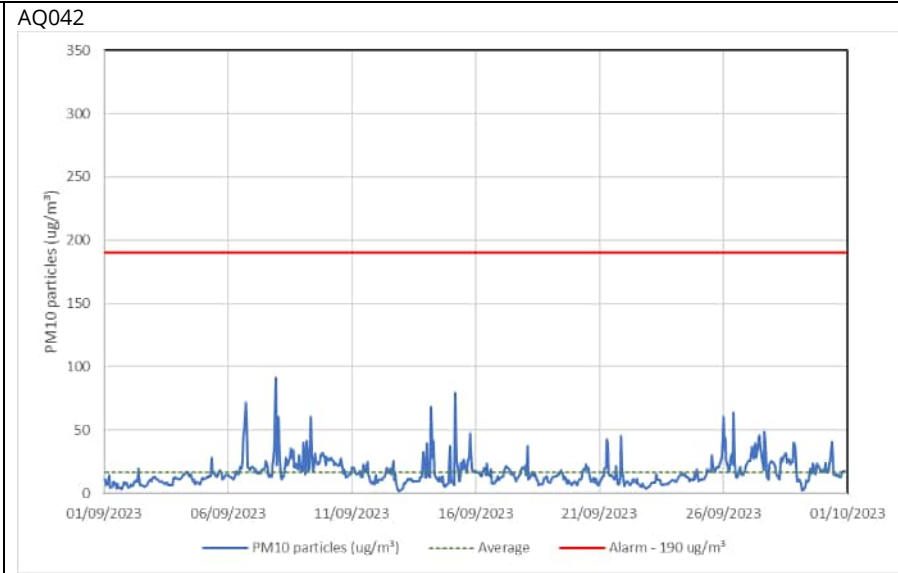
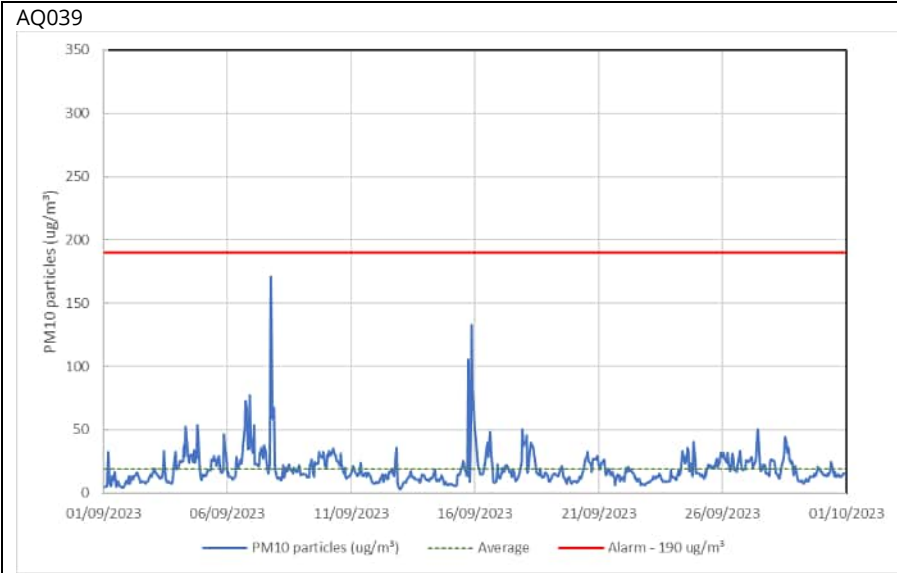
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ026	09/09/2023 08:01 – 09:00; 190.3 µg/m ³	At the time of the trigger there were no works being carried out. Therefore, it is unclear as to what caused the trigger, although the monitor had recently measured erratic readings.	The monitor was subsequently serviced.
AQ027	27/09/2023 10:01 – 11:00; 273.0 µg/m ³	At the time of the trigger no dusty works were taking place. The monitor experienced a brief loss of power at the time of the trigger meaning that the pump and heater stopped working properly for a short period of time leading to a false elevated reading.	Power was restored within the hour.
AQ037	06/09/2023 09:01 – 10:00; 6502.7 µg/m ³ 10:01 – 11:00; 435.9 µg/m ³ 11:01 – 12:00; 871.3 µg/m ³ 12:01 – 13:00; 614.4 µg/m ³	The monitor was experiencing a fault at the time of the triggers.	The monitor was replaced.

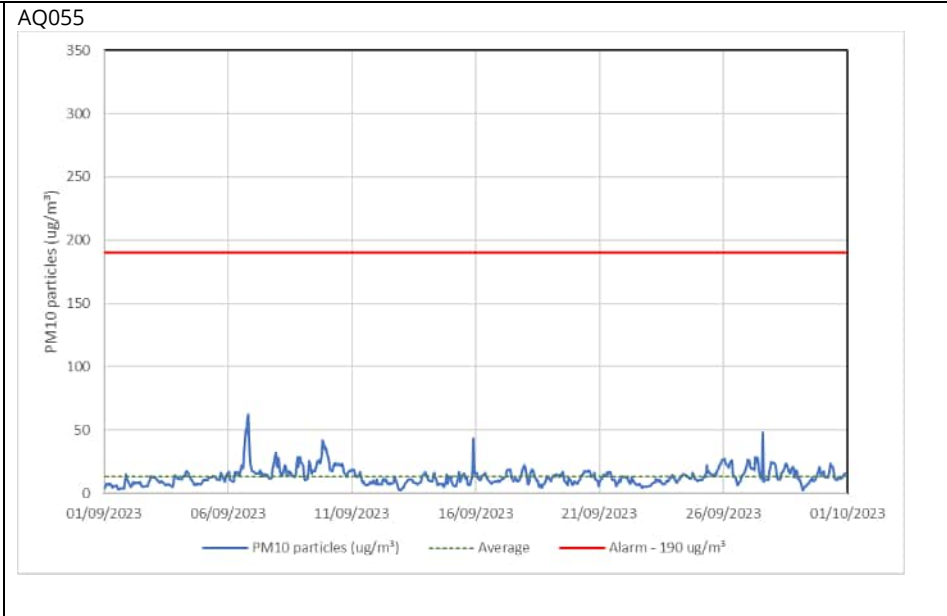
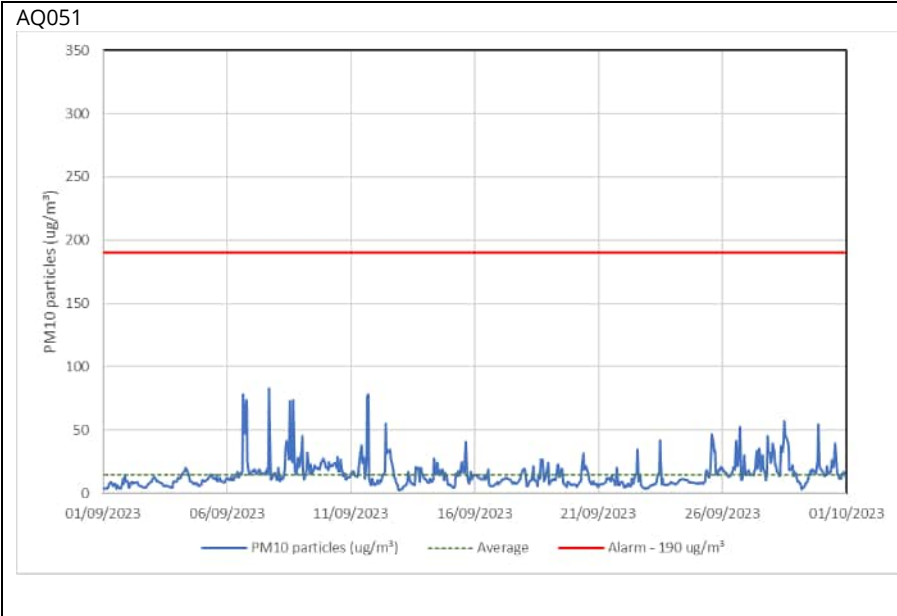
Figure 4: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors











Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2023 (µg/m³)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BN5	Sign post on Victoria Road	521443, 182477	57	60	37	Tube Missing	42	43	38	40					45
HS2-000020BN7	The Approach street sign	520959, 181102	50	48	29	37	27	32	36	37					37
HS2-000020BQF	Conway Drive sign post	520856, 181733	58	57	44	46	42	41	37	41					46
HS2-000020BQG	Lamp post outside No 1. Wells House Road on Old Oak Common Lane	521312, 182033	53	48	37	42	31	36	33	37					40
HS2-000020BP6	Triplicate site next to the Ealing, Western Avenue Acton roadside automatic monitoring station	520430, 181950	44	49	37	38	33	34	34	36					38
HS2-000020BP7	Triplicate site next to the Ealing, Hangar Lane Gyratory roadside automatic monitoring station	518537, 182708	71	63	57	48	42	49	57	53					55

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.