

Air Quality and Dust Monitoring Monthly Report – October 2022

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 September and October 2022 respectively.
- 1.1.2 Figure 1 to Figure 4 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 construction 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 4, include:

Victoria Road Crossover Box and Flat Iron Site

- Groundworks;
- Piling operations shaft construction; and
- Conveyor construction.

Willesden Euro Terminal

- Excavated material spoil management; and
- Conveyor construction.

Atlas Road

- Piling operations;
- Groundworks;
- Conveyor construction; and
- Tunnel entrance construction.

Green Park Way Vent Shaft

- Groundworks and piling operations;
- Vent shaft construction; and
- Materials management.

Mandeville Road Vent Shaft

- Groundworks;
- Piling operations; and

- Materials management.

Westgate Vent Shaft

- Groundworks and piling operations;
- Vent shaft construction; and
- Materials management.

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

- Material movement.
- Fixing of reinforced bars, shuttering and form works.
- Site entrance works, including kerb installation.
- Diaphragm wall works, including diaphragm wall breakdown.
- Construction of capping beams.
- Excavation works.
- Digging works.
- Drainage installation.
- Waste removal from site.
- Utility installation.
- Road sweeping works.
- Manhole construction / pipe jacking / tunnelling at Wormwood Scrubs

1.1.5 Fifteen (15) dust monitors were 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, Figure 5. 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 There were seven (7) dust triggers alert recorded during the monitoring period (October 2022). The exceedances are presented in Appendix B, Table 2.

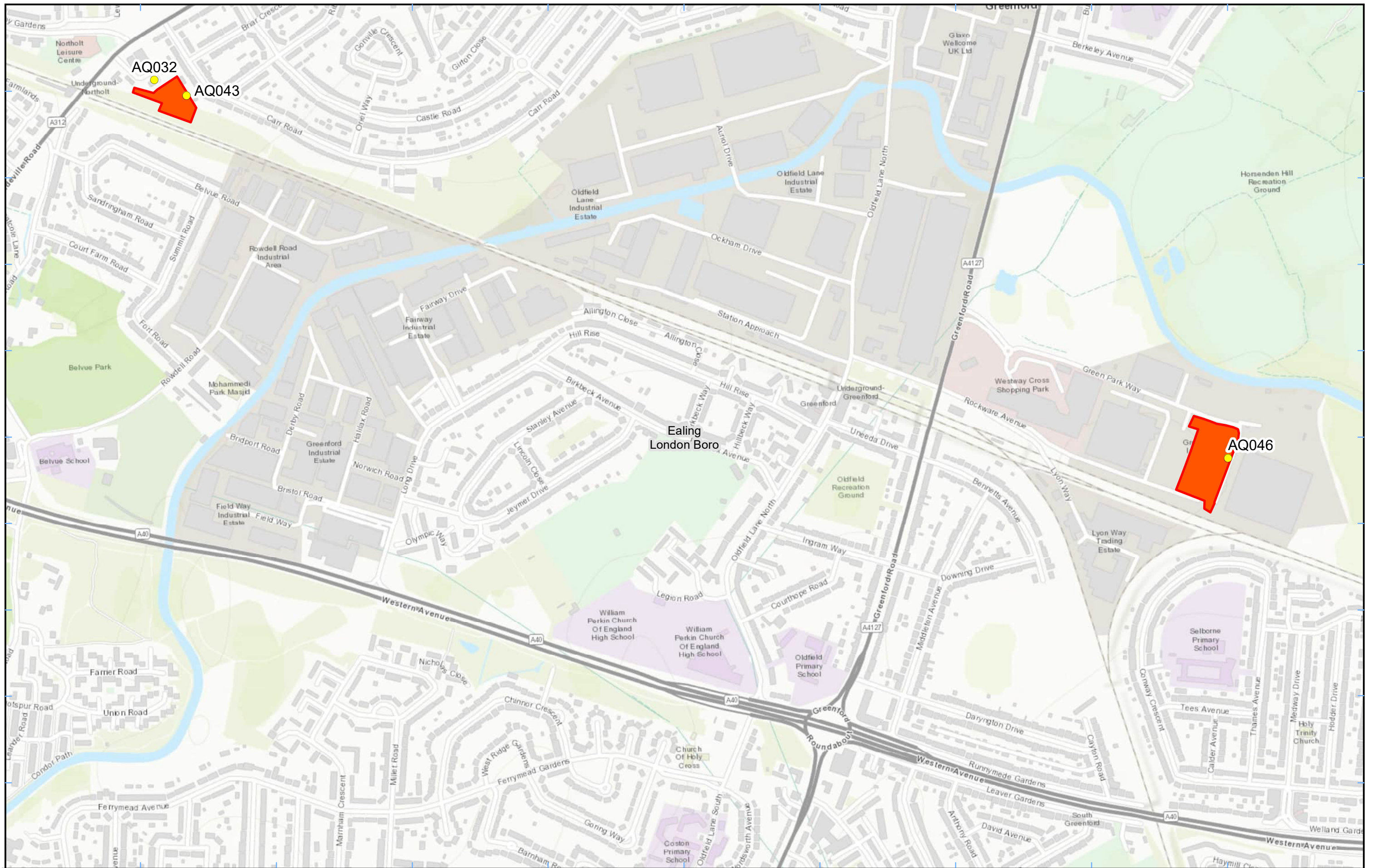
1.1.9 Data capture for monitors AQ023 and AQ038 was below 90% (68.9% and 48.0% respectively) due to faults with the monitors, both subsequently replaced.

- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at ten (10) 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 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 2022 running mean.
- 1.1.13 No (0) complaints were received during the reporting period.

Appendix A – Worksites and Monitoring Locations

Figure 1 – 4: Worksites and monitoring locations within the LBE






Legend

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number
Map Name Worksite and Monitoring Locations In LBE (Sheet 1)
London Borough of Ealing



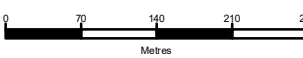
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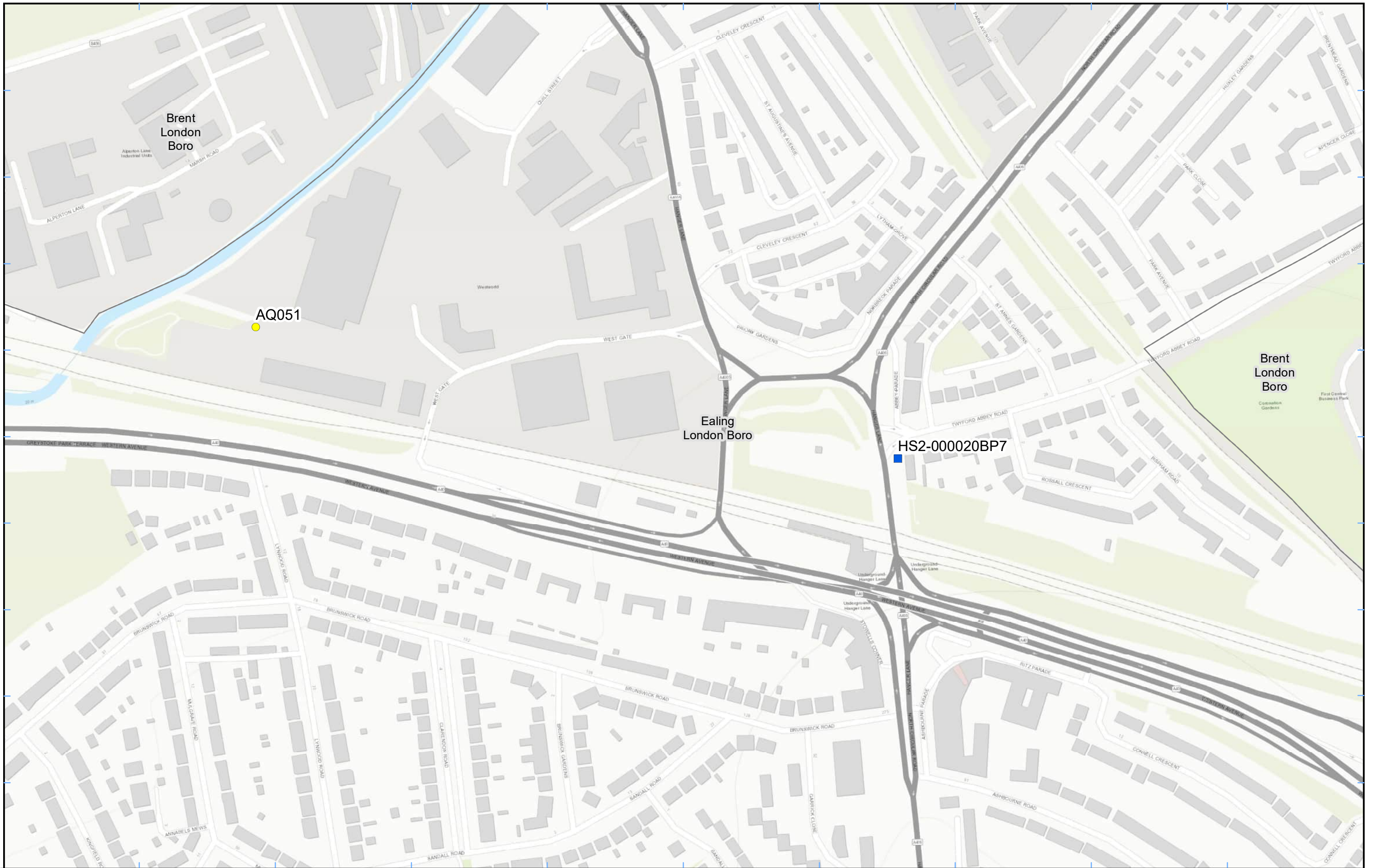


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Metres

Date: 26/04/22



Legend
■ Diffusion Tube District Borough Unitary Boundaries
● Dust Monitor

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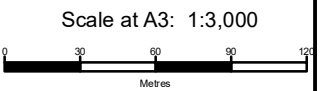
Map Number
 Map Name
**Monitoring Locations
 In LBE (Sheet 2)**
 London Borough of Ealing



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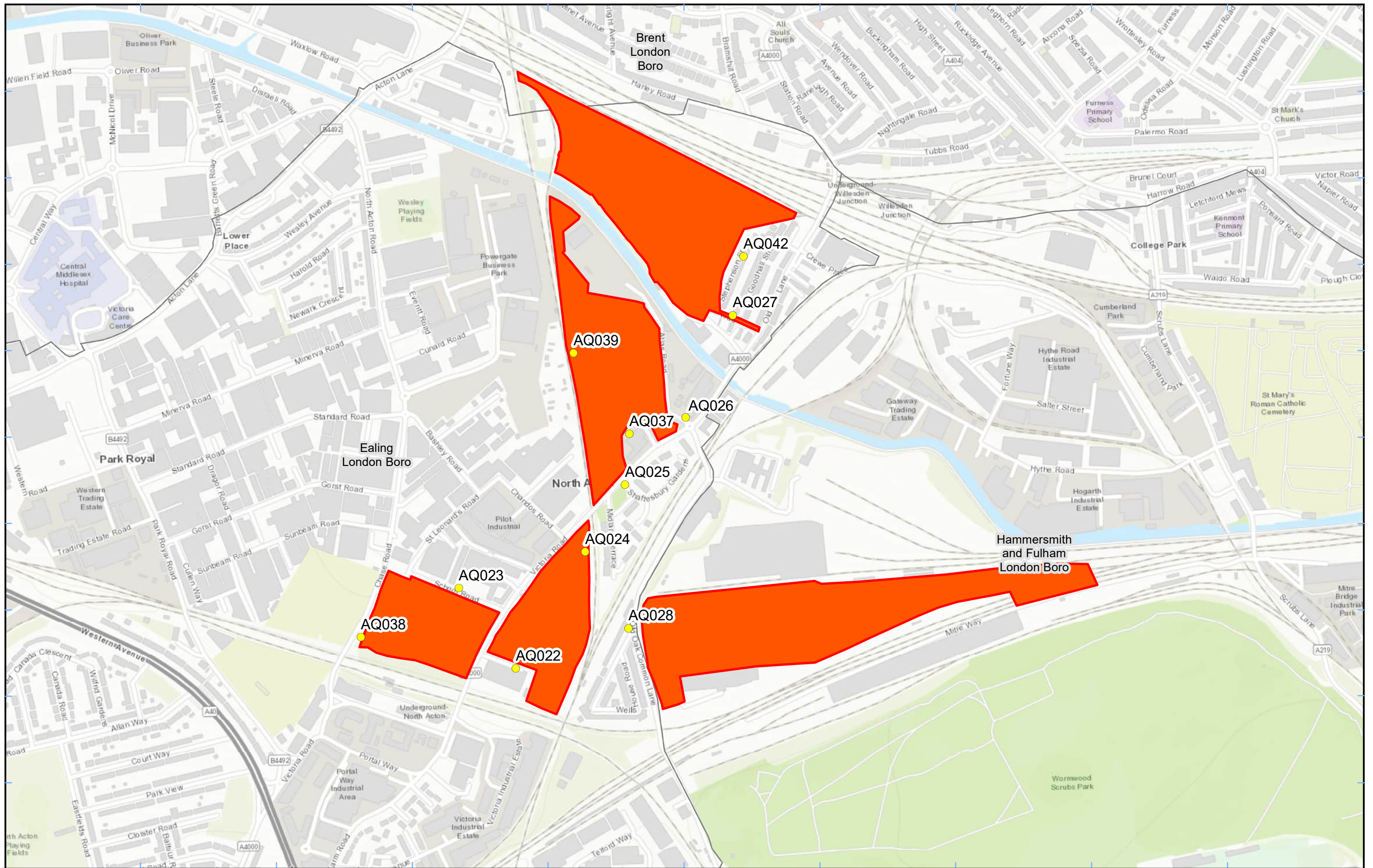


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Legend
 ● Dust Monitor □ District Borough Unitary Boundaries
 ■ Worksite

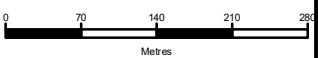
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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBE (Sheet 3)**
 London Borough of Ealing

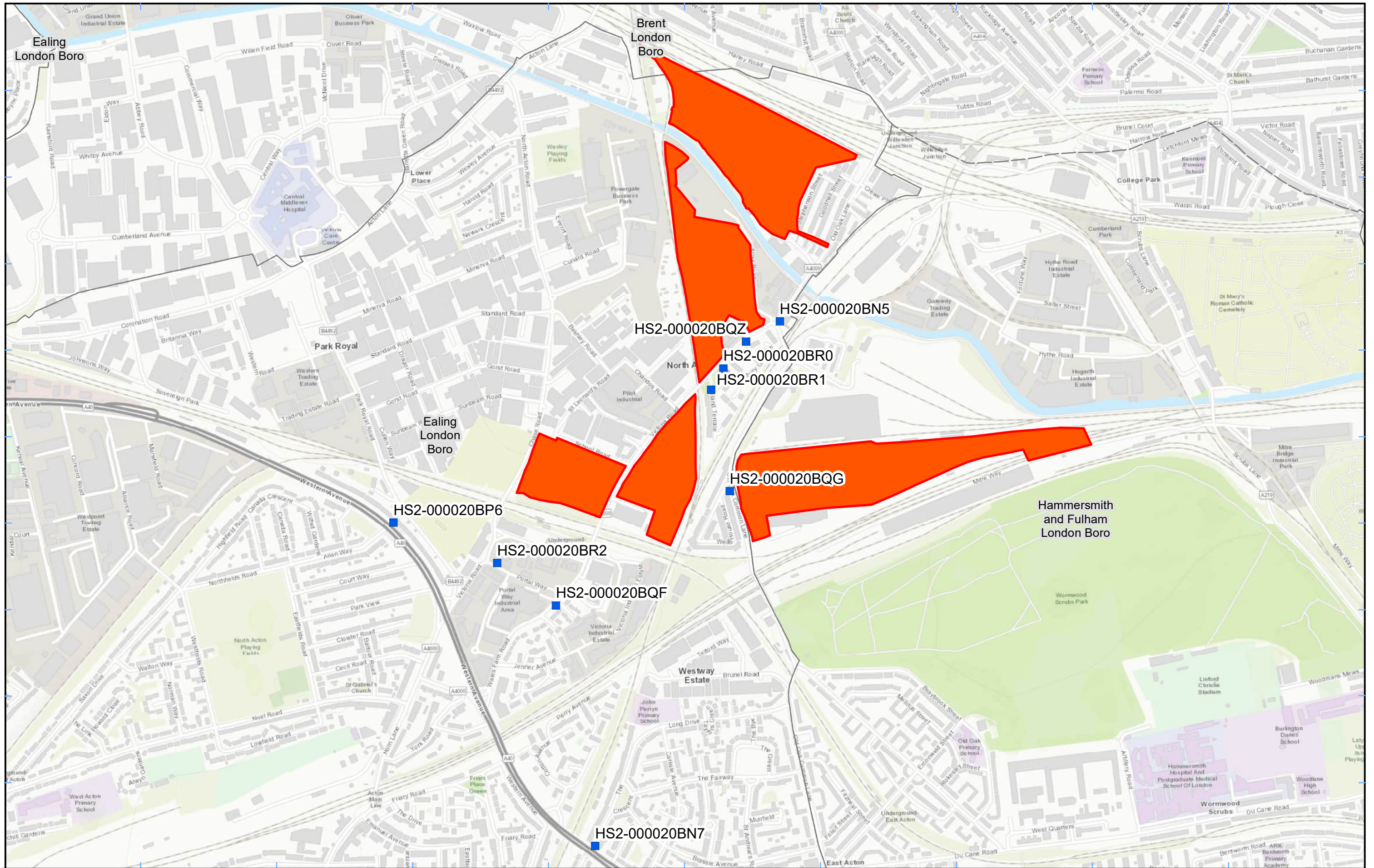

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Doc Number: _____ Date: 23/06/22



Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBE (Sheet 4)**
 London Borough of Ealing

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Scale at A3: 1:9,000

0 90 180 270 360
 Metres

Doc Number: **Date: 28/04/22**

Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and October 2022 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	22.0	2.8	92.4	0	100.0
AQ023	520956, 182149	School Road	M	Yes	N	16.0	2.3	46.4	0	68.9
AQ024	521214, 182223	Braitrim House	M	Yes	N	27.5	4.4	87.1	0	100.0
AQ025	521295, 182360	Victoria Road	M	Yes	N	23.6	4.6	64.3	0	100.0
AQ026	521419, 182497	Old Oak Lane	M	Yes	N	16.7	2.4	65.9	0	100.0
AQ027	521515, 182706	Channel Gate Road	M	Yes	N	32.3	3.5	203.9	3	100.0
AQ028	521302, 182067	Wells House Road	M	Yes	N	28.1	4.2	132.0	0	100.0
AQ032	513402, 184536	Badminton Close	M	Yes	N	18.2	2.9	83.6	0	100.0
AQ037	521304, 182464	Atlas Road	M	Yes	N	17.8	3.3	60.7	0	100.0
AQ038	520756, 182049	Chase Road	M	Yes	N	20.9	2.9	622.9	4	48.0
AQ039	521190, 182628	Atlas Road 2	M	Yes	N	20.0	6.0	73.2	0	100.0
AQ042	521537, 182826	Stephenson Road	M	Yes	N	24.6	2.7	180.6	0	100.0
AQ043	513468, 184504	Mandeville Road	M	Yes	N	14.9	2.4	42.2	0	91.4

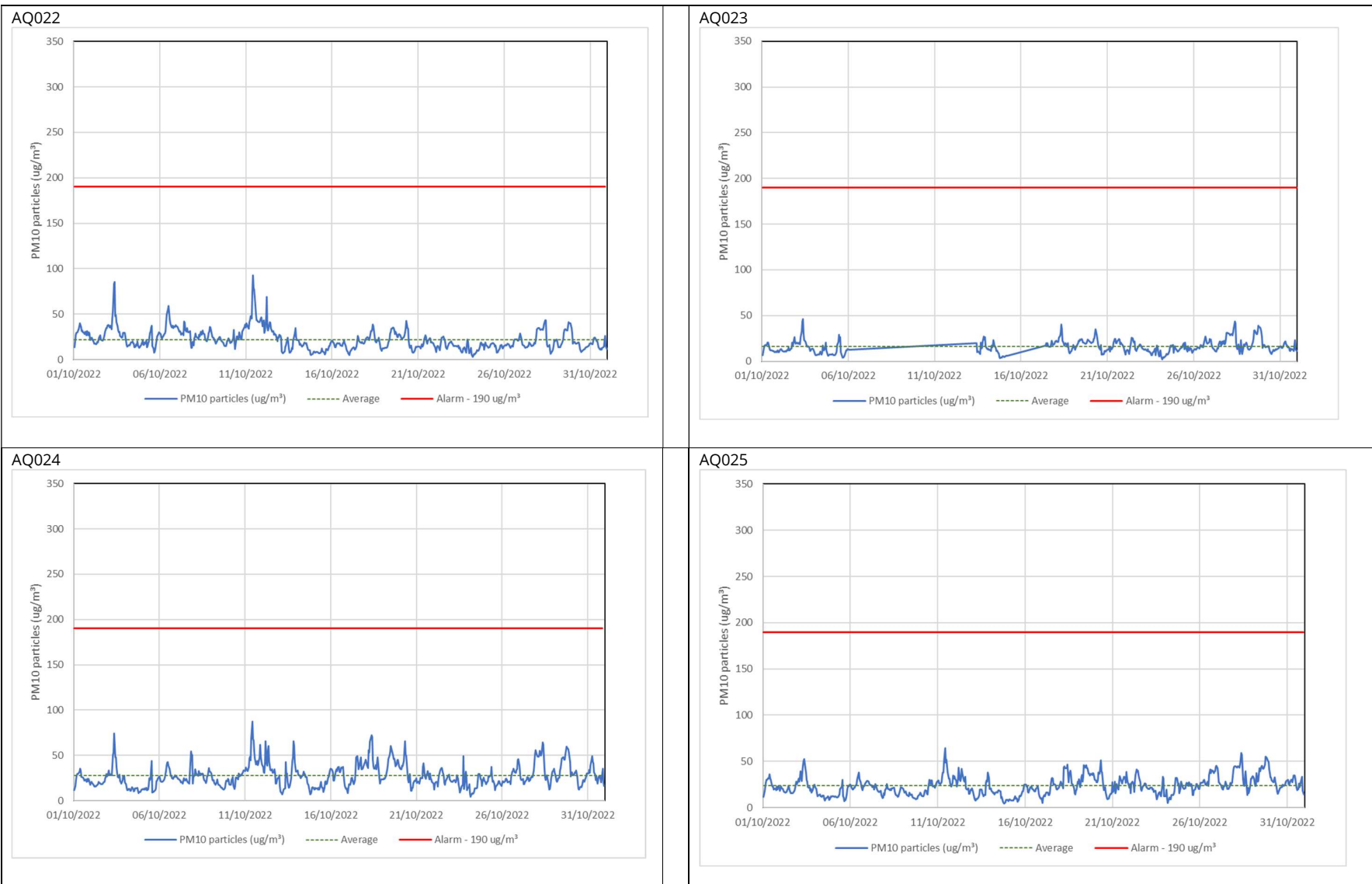
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ046	515593, 183764	Green Park Way	M	Yes	N	16.2	3.9	48.6	0	100.0
AQ051	517951, 182788	Westgate	M	Yes	N	13.8	1.0	93.8	0	100.0

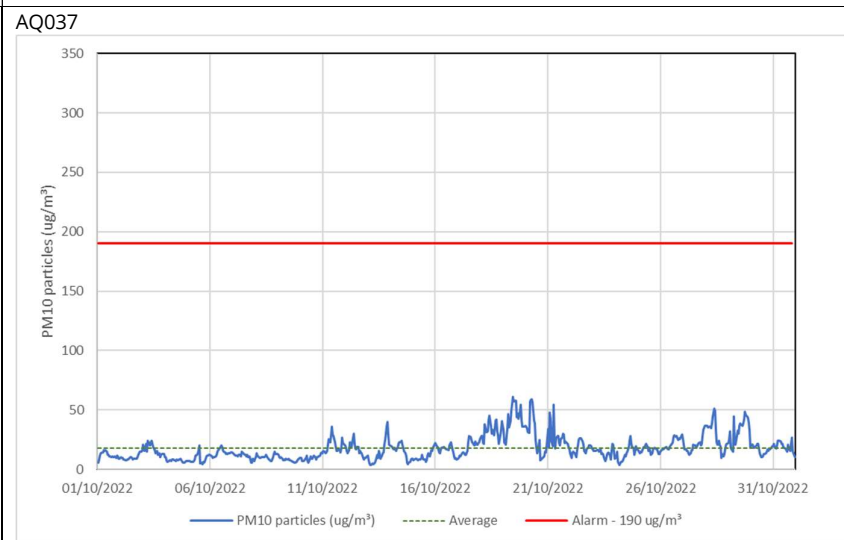
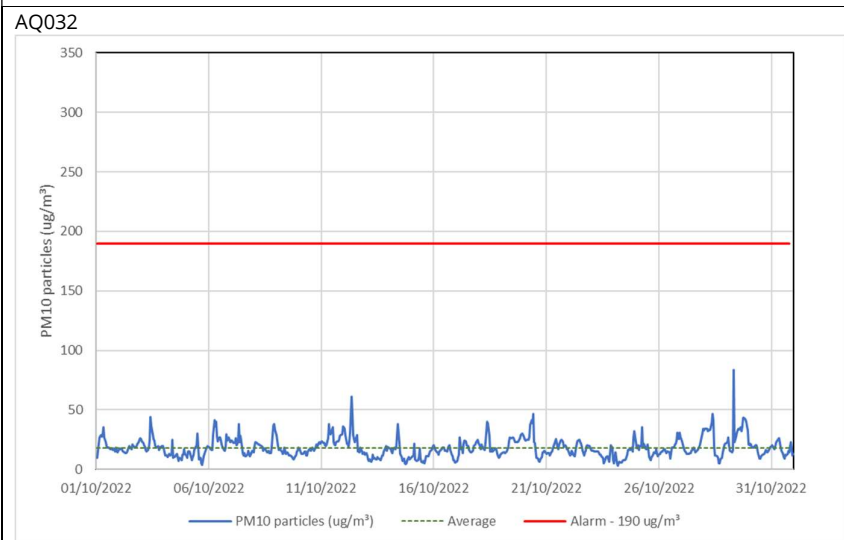
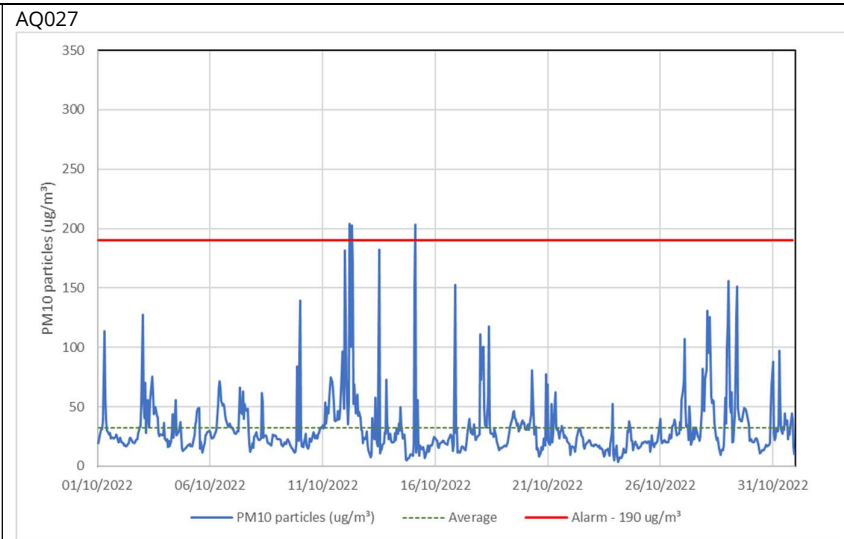
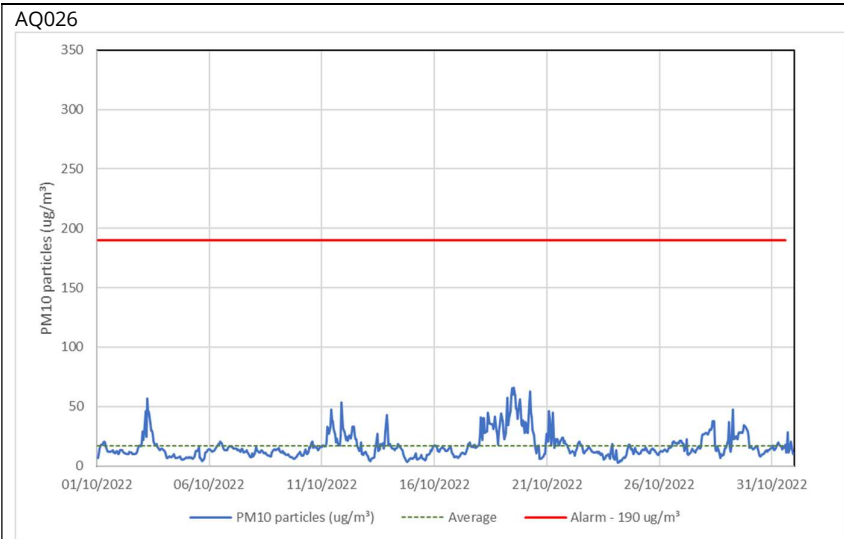
Table 2: Summary of exceedances of trigger level in October 2022

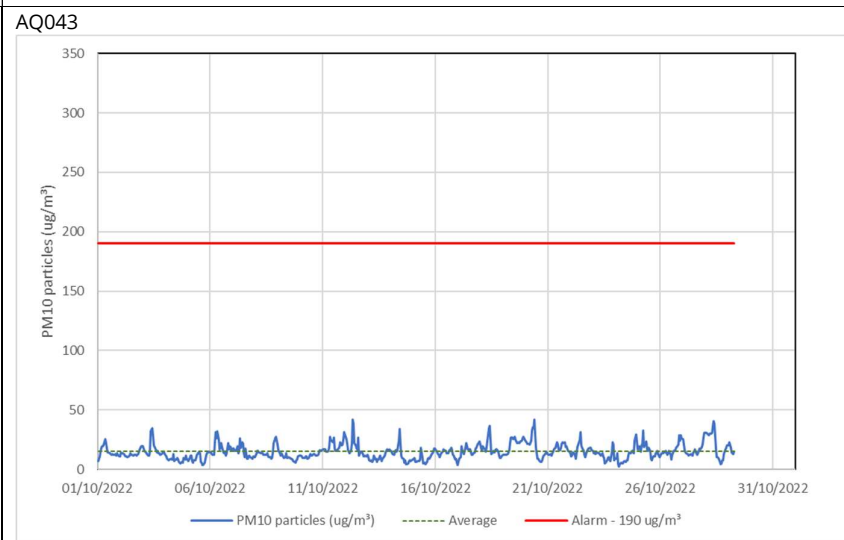
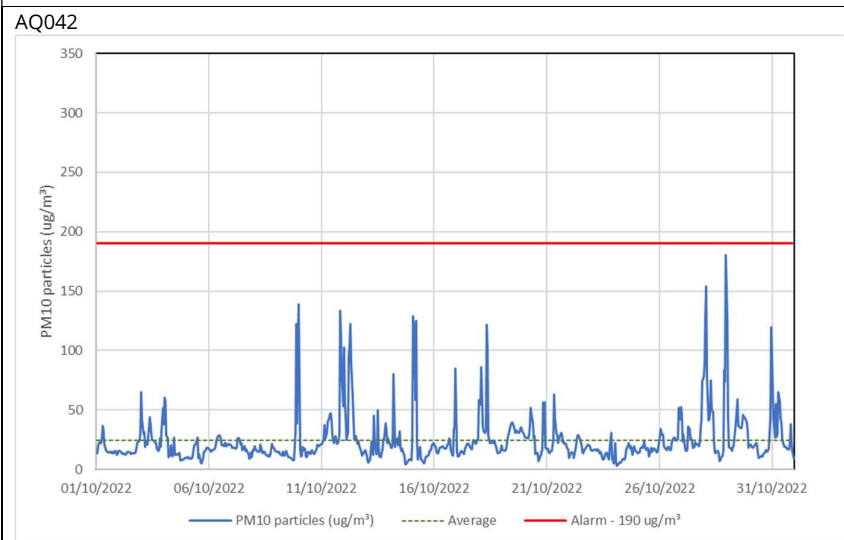
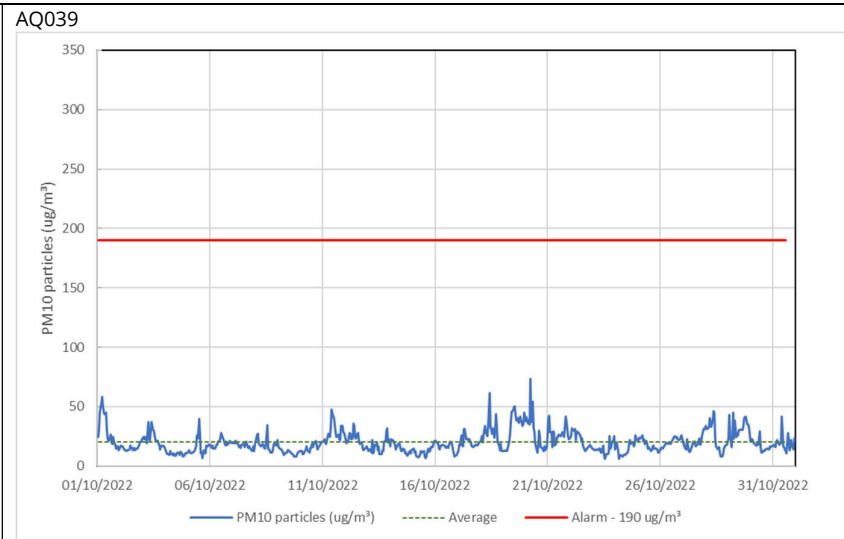
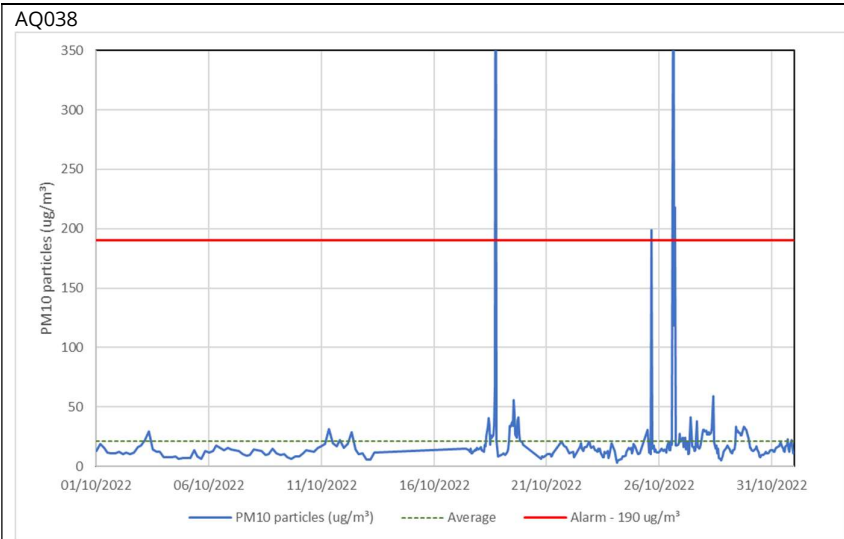
Period exceeding trigger level	Worksite	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
12/10/2022 05:00 - 05:59; 203.88 µg/m ³ 07:00 - 07:59; 202.7 µg/m ³ 15/10/2022 03:00 - 03:59; 203.18 µg/m ³	Willesden Euro Terminal	AQ027	n/a	The trigger was received during the early hours of the morning when the site was shut no activities were taking place and weather conditions were damp/ wet / high humidity. Triggers are considered to be associated with high moisture content in the air and potentially a fault with the monitor's wiring/heater affecting the monitor and giving false readings. No similar spikes were observed at the same time from AQ042 on the same site boundary.	Monitoring data will continue to be reviewed as the assumed wetter weeks, and months ahead continue. Potentially a fault with the monitor's internal heater or wiring which was replaced later in the month as a precaution.
18/10/2022 18:00 - 18:59; 622.9 µg/m ³	Victoria Road Crossover Box	AQ038	n/a	At the time of the isolated trigger alert from the dust monitor (AQ038), which is located on the south-western boundary of the Victoria Road Crossover Box site adjacent to Chase Road, there were no activities taking place on the VRCB and the site was shut. There was a fault with the monitor resulting in a loss of data in the preceding couple of weeks and false readings including this trigger.	The monitor was subsequently replaced.
25/10/2022 16:00-16:59; 198.7 µg/m ³	Victoria Road Crossover Box	AQ038	n/a	At the time of the first trigger alert from the dust monitor (AQ038), which is located on the south-western boundary of the Victoria Road	Further concrete pours were required at the end of the subsequent day,

Period exceeding trigger level	Worksite	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
26/10/2022 15:00-15:59; 490.6 µg/m ³ 17:00-17:59; 218.1 µg/m ³				Crossover Box (VRCB) site adjacent to Chase Road, there were utilities works being undertaken directly next to the monitor. Chase Road is currently closed and subject to excavation works along its length with the VRCB, the monitor is therefore currently in the middle of the two sites. When the trigger was received, concrete was being mixed and poured directly adjacent to the monitor by a dedicated vehicle. Cement dust from the mixing chute was considered to be the cause of the trigger. The works had finished by the time the trigger had been received. Further dust suppression was made available for concrete mixing and pouring the next day around the activity, but two further triggers were received. Due to the nature of the activity, it was not possible to directly suppress dust from the vehicle's cement delivery chute.	but the onsite mixing was abandoned and replaced with the delivery of ready mixed concrete (see photo). Ready mixed concrete will be prioritised for future pours where feasible, dependent on the volume needed.

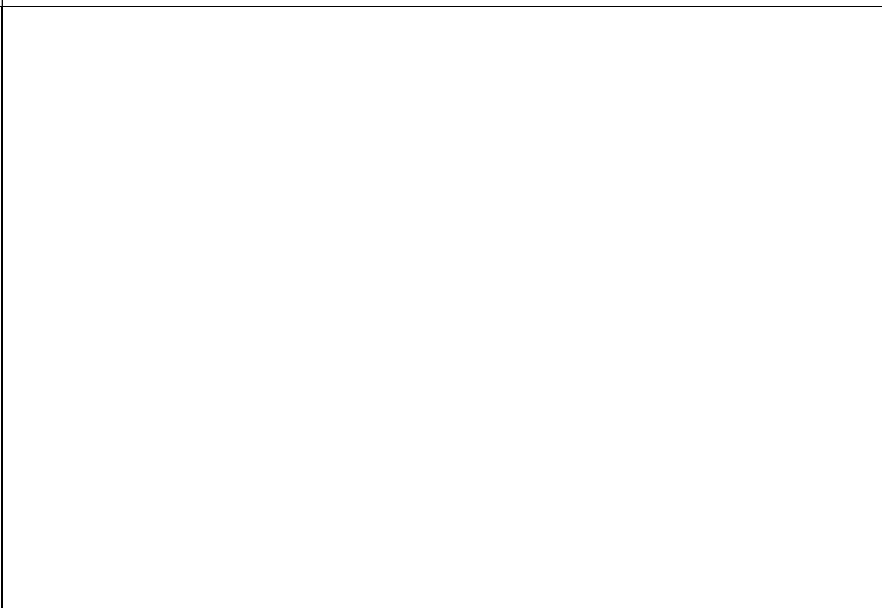
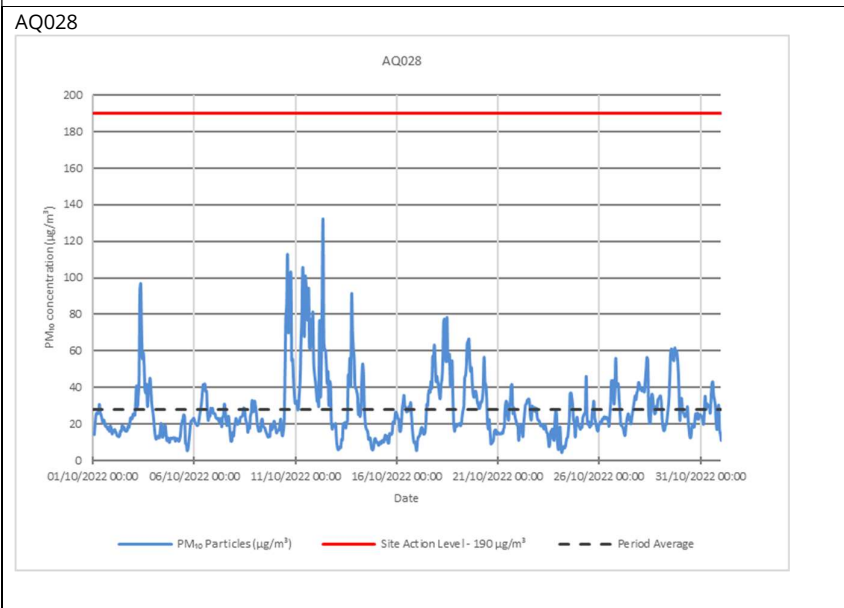
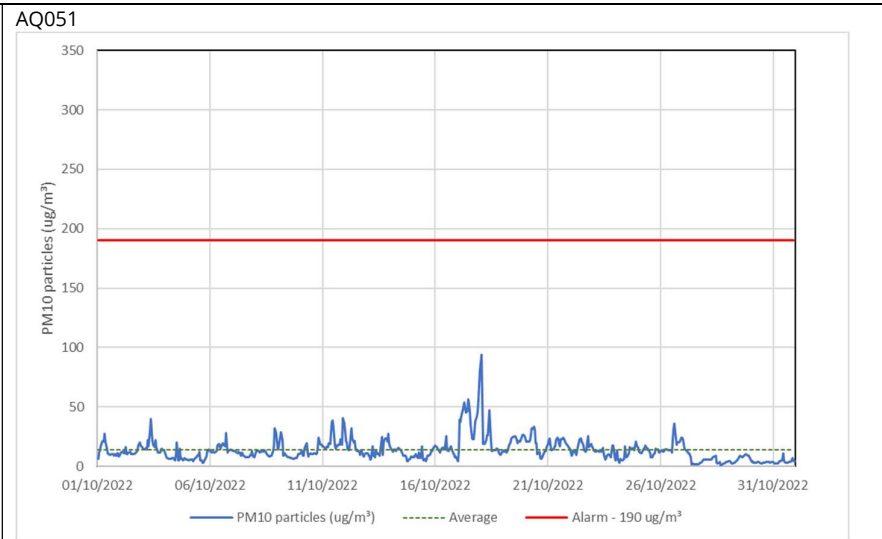
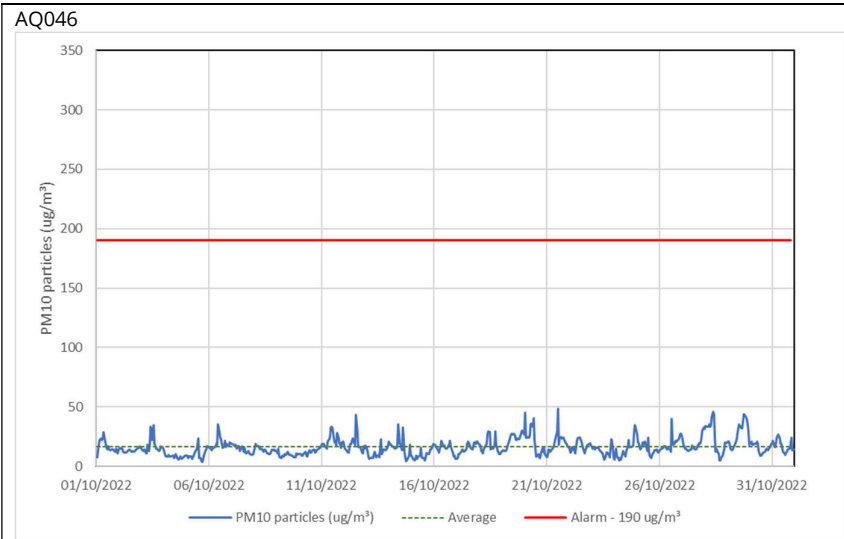
Figure 5: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors







Air Quality and Dust Monitoring Summary Report, October 2022
 London Borough of Ealing



Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2022 (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	65	52	55	39	36	37	45	51	55				48
HS2-000020BN7	The Approach street sign	520959, 181102	76	Tube Missing	46	41	45	39	41	38	49				47
HS2-000020BQF	Conway Drive sign post	520856, 181733	66	44	62	55	No data	40	47	51	49				46
HS2-000020BQG	Lamp post outside No 1. Wells House Road on Old Oak Common Lane	521312, 182033	Tube Missing	38	50	37	37	33	36	38	43				39
HS2-000020BQZ	Lamp post on Victoria Road opposite Tudor House	521354, 182425	49	45	57	47	42	45	48	51	55				49
HS2-000020BR0	Sign post on Shaftesbury Gardens	521295, 182354	50	33	40	30	24	21	27	29	33				32
HS2-000020BR1	Lamp post on Midland Terrace	521263, 182298	43	30	38	30	21	24	24	26	33				30
HS2-000020BR2	Lamp post on Victoria Road outside Papa John's	520702, 181844	Tube Missing	Tube Missing	62	Tube Missing	Tube Missing	Tube Missing	Tube Missing	44	44				50
HS2-000020BP6	Triplicate site next to the Ealing, Western Avenue Acton roadside automatic monitoring station	520430, 181950	63	45	50	37	38	37	40	39	48				44

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.

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BP7	Triplicate site next to the Ealing, Hangar Lane Gyrotory roadside automatic monitoring station	518537, 182708	87	67	65	Tube Missing	66	66	62	54	71				67