

## Air Quality and Dust Monitoring Monthly Report – January 2023

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.

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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 December 2022 and January 2023 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](http://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:

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

- Platform installation and piling works - GWML;
- Ground reduction and muck away - West Box / East Box;
- Intermediate level dig / D-wall breakdown / Excavation / Steel fixing – Station Box;
- Manhole construction – Stanford Brook Sewer;
- Site haul roads and public roads adjacent to site cleaning with a road sweeper; and
- Shuttering / Steel fixing / Blinding / Pile breaking – Crossrail and Station Access Retaining Walls.

## **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 and
- Conveyor construction; and

- Tunnel entrance construction.

#### **Green Park Way Vent Shaft**

- Groundworks;
- Piling operations;
- Vent shaft construction; and
- Materials management

#### Mandeville Road Vent Shaft

- Groundworks;
- Piling operations; and
- Materials management.

#### Westgate Vent Shaft

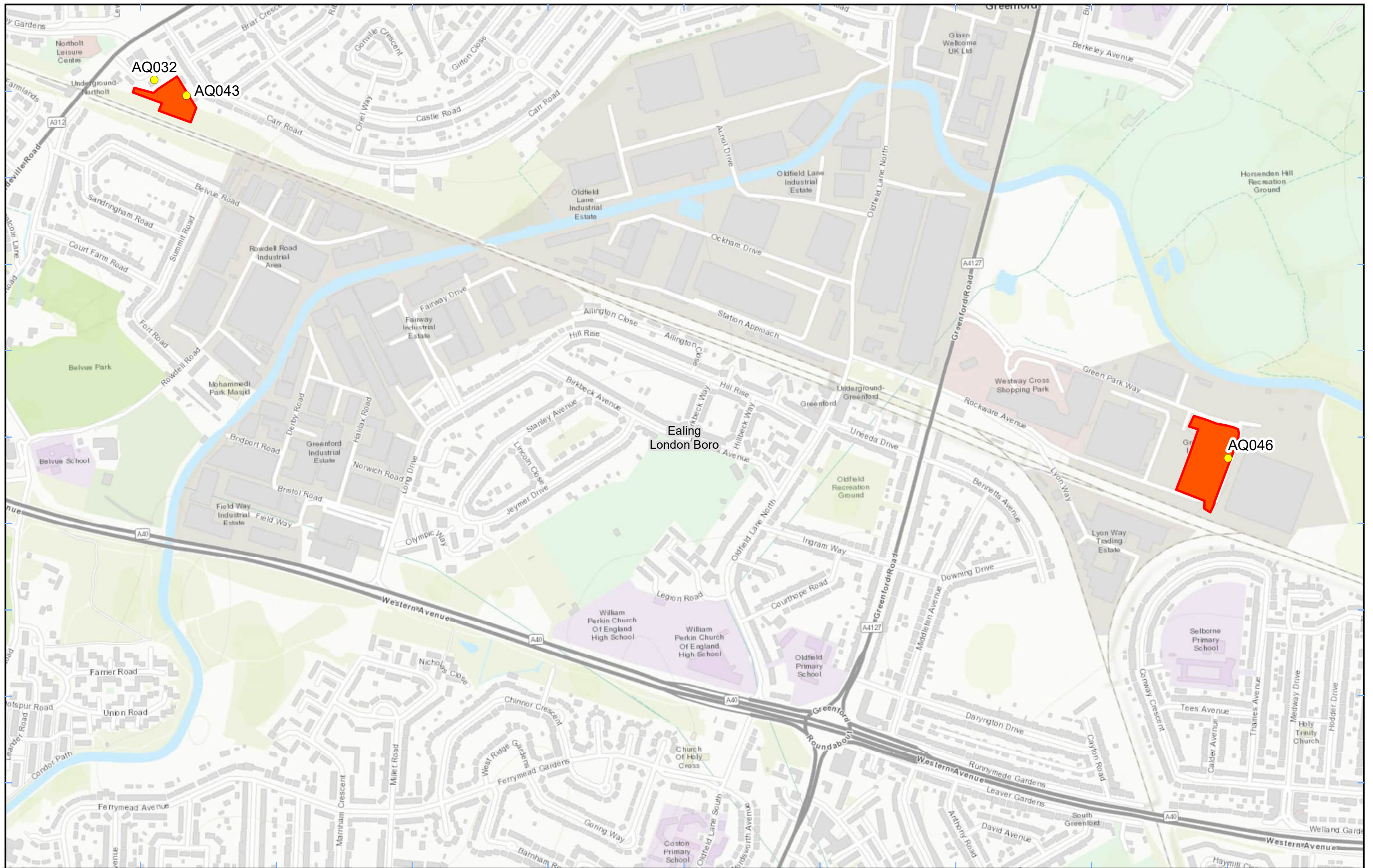
- Groundworks;
- Piling operations;
- Vent shaft construction; and
- Materials management.

- 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 2, 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 PM<sub>10</sub> concentrations of 190 µg/m<sup>3</sup>, 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 (January 2023) and are reported in Appendix B, Table 3.
- 1.1.9 Diffusion tube monitoring of Nitrogen Dioxide (NO<sub>2</sub>) 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.
- 1.1.10 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<sub>2</sub> monitoring locations and results are presented in Appendix C, Table 4, together with the 2022 running mean.
- 1.1.12 There were no (0) complaints received during this reporting period.

# Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 4: 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

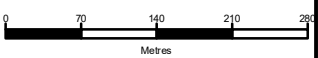
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<b>London Borough of Ealing</b>



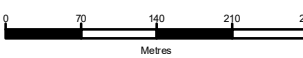
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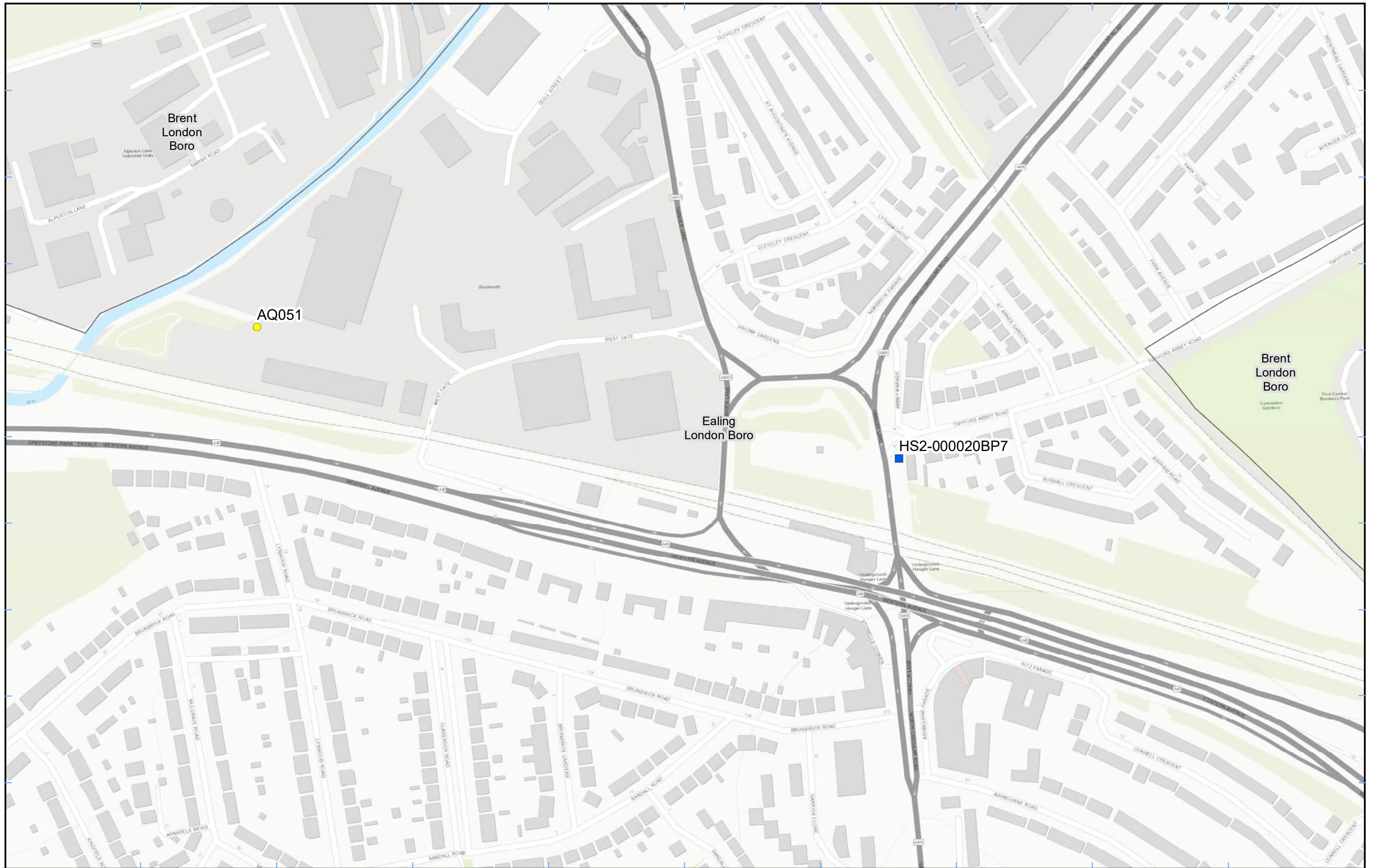


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Metres


**Date: 26/04/22**



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

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Map Number  
 Map Name  
**Monitoring Locations  
 In LBE (Sheet 2)**  
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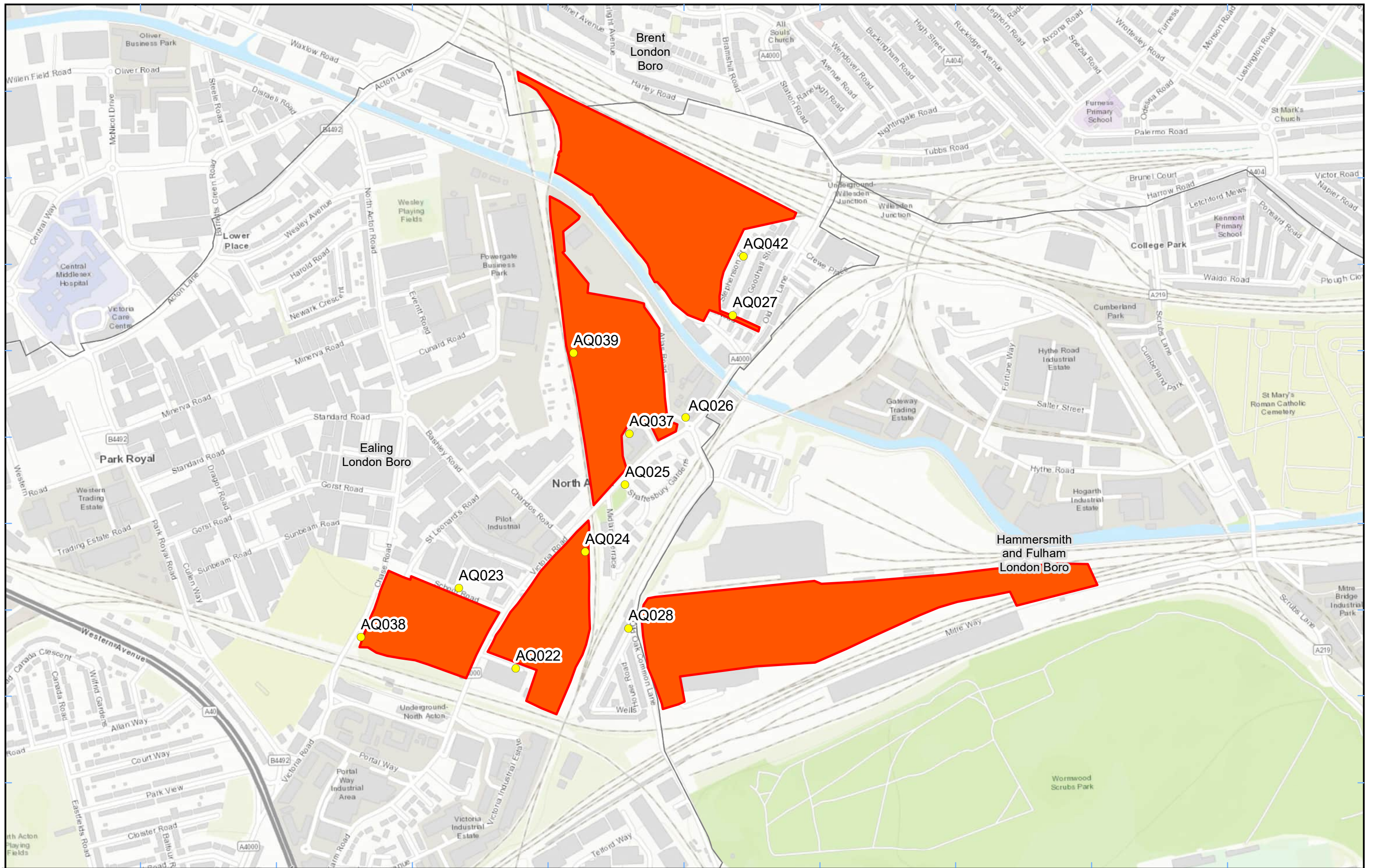


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**Legend**

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number
Map Name <b>Worksite and Monitoring Locations In LBE (Sheet 3)</b>
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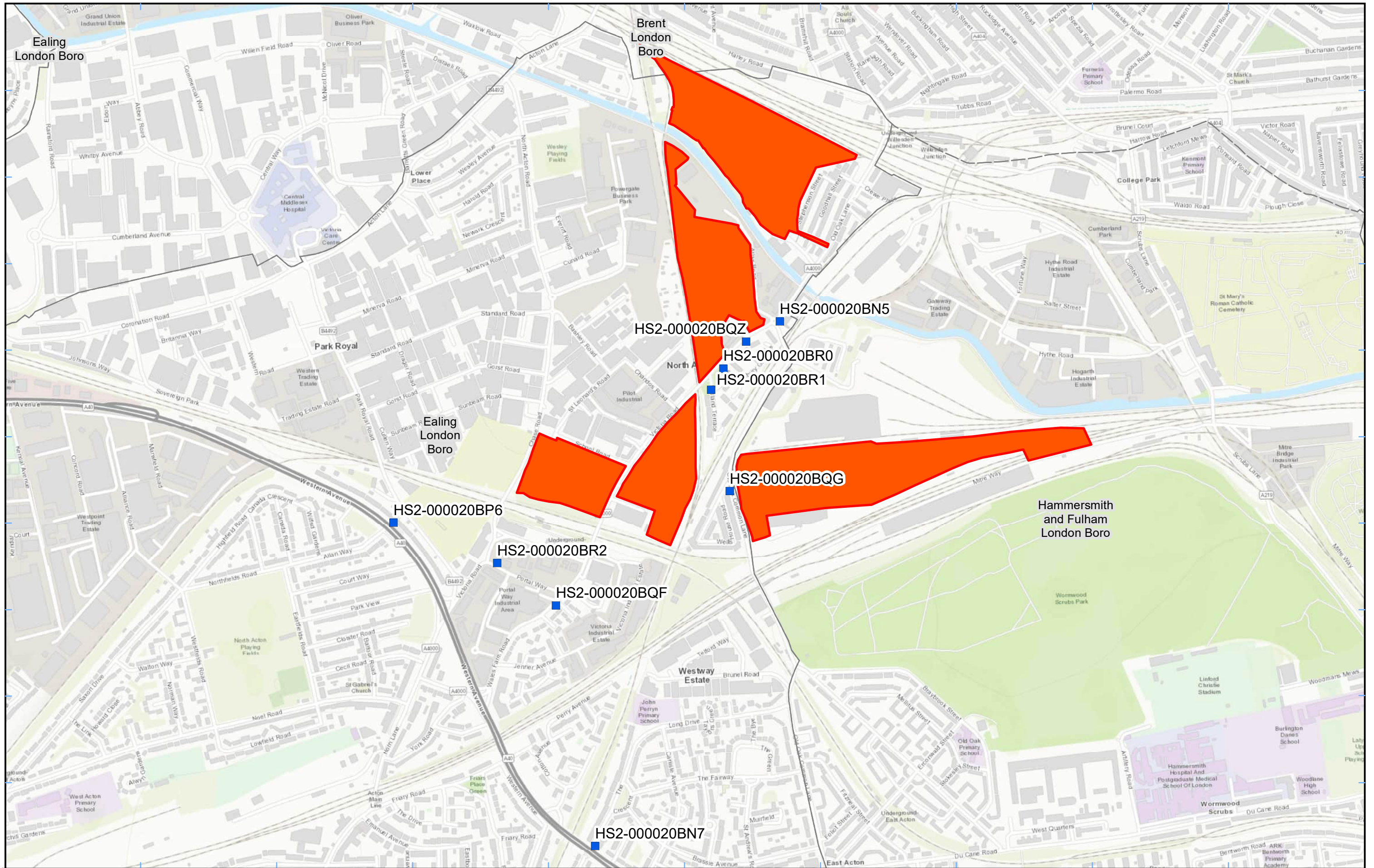


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Metres

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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## Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and January 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 <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
AQ022	521072, 181985	Boden House	M	Yes	N	12.3	1.4	61.5	0	97.0
AQ023	520956, 182149	School Road	M	Yes	N	12.3	1.3	108.6	0	100.0
AQ024	521214, 182223	Braitrim House	M	Yes	N	22.4	2.5	98.8	0	100.0
AQ025	521295, 182360	Victoria Road	M	Yes	N	17.5	2.0	143.9	0	100.0
AQ026	521419, 182497	Old Oak Lane	M	Yes	N	11.7	1.4	64.1	0	100.0
AQ027	521515, 182706	Channel Gate Road	M	Yes	N	14.9	1.5	327.1	1	100.0
AQ028	521302, 182067	Wells House Road	M	Yes	N	11.9	1.4	85.8	0	100.0
AQ032	513402, 184536	Badminton Close	M	Yes	N	11.4	1.5	33.5	0	100.0
AQ037	521304, 182464	Atlas Road	M	Yes	N	13.6	1.6	56.9	0	100.0
AQ038	520756, 182049	Chase Road	M	Yes	N	13.1	1.6	98.8	0	99.3
AQ039	521190, 182628	Atlas Road 2	M	Yes	N	13.5	1.9	43.0	0	93.9
AQ042	521537, 182826	Stephenson Road	M	Yes	N	13.1	1.3	73.0	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 <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
AQ043	513468, 184504	Mandeville Road	M	Yes	N	11.5	1.4	120.8	0	100.0
AQ046	515593, 183764	Green Park Way	M	Yes	N	11.6	1.4	109.5	0	99.9
AQ051	51.531688, -0.300934	Westgate	M	Yes	N	60.5	2.4	3982.4	19	99.9

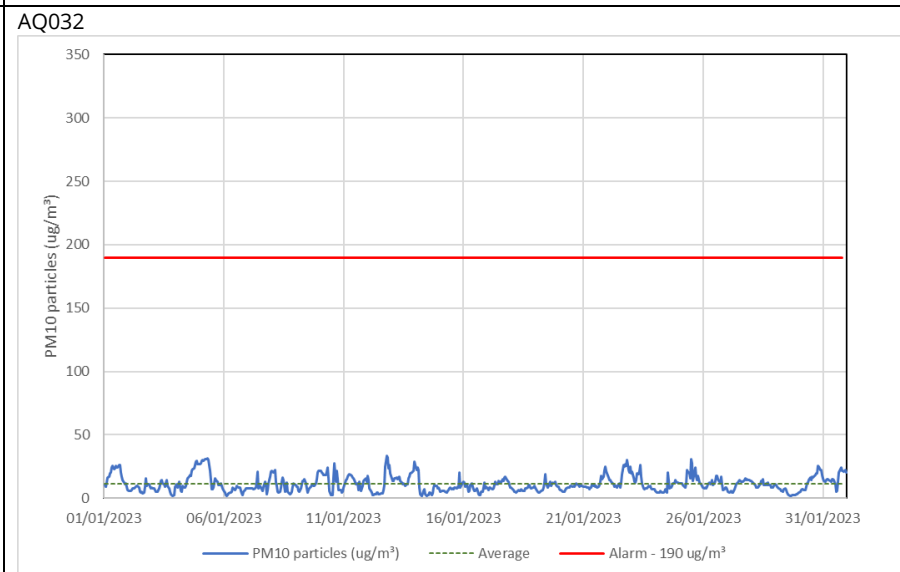
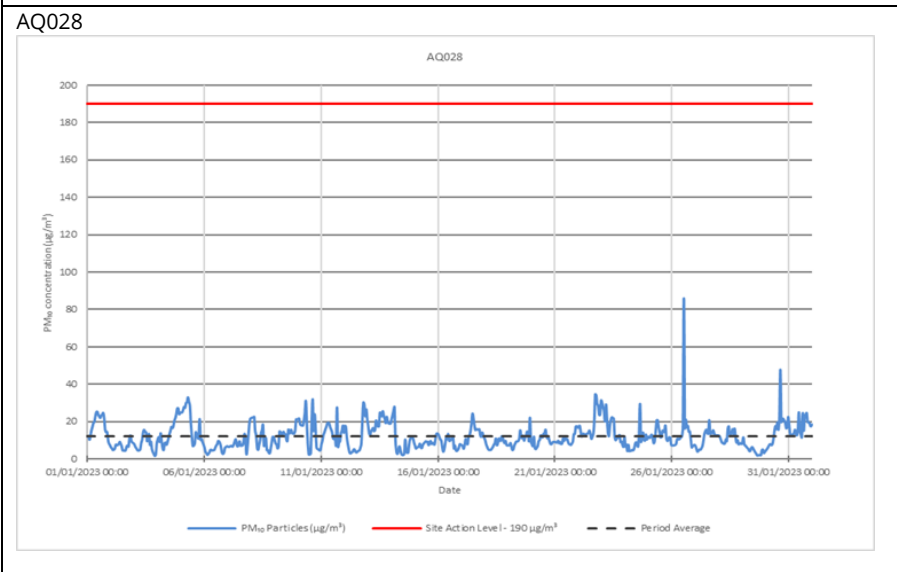
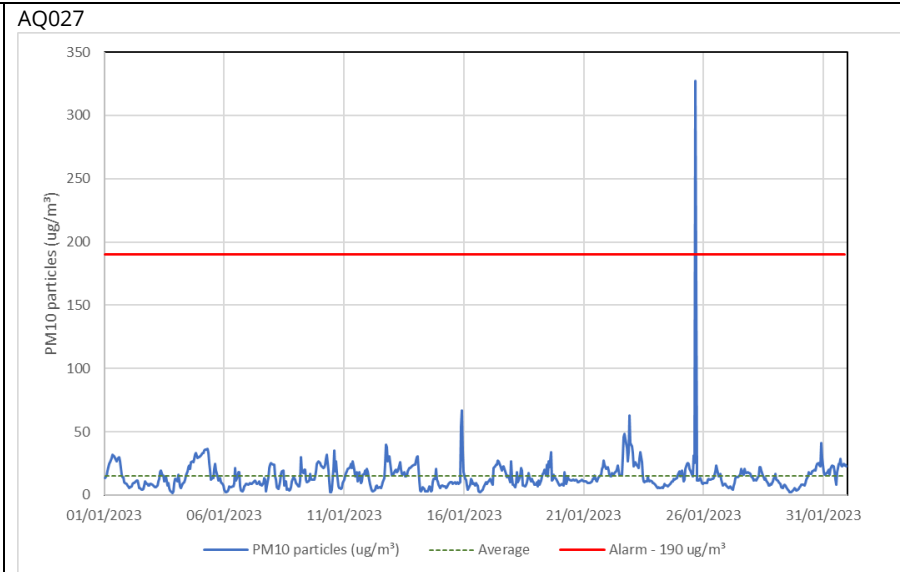
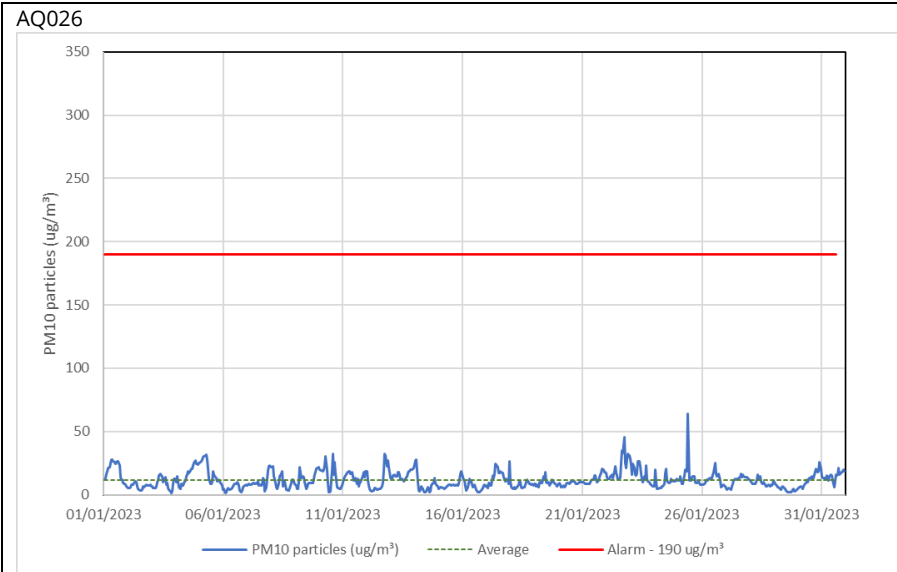
Table 2: Summary of exceedances of trigger level in January 2023

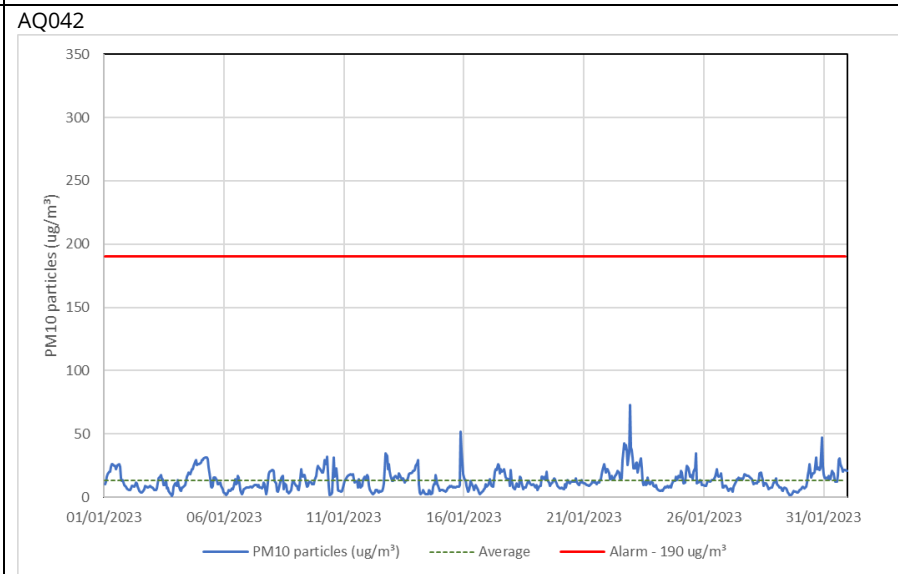
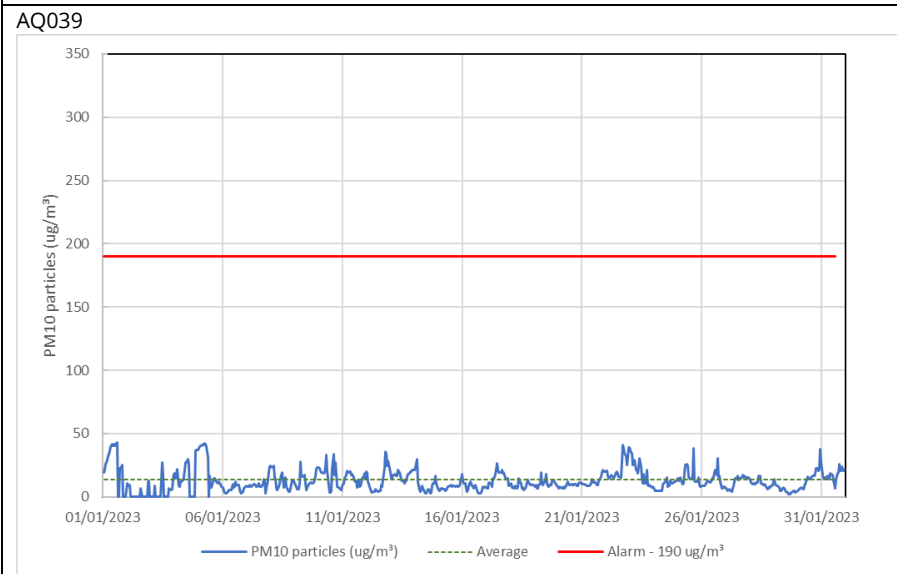
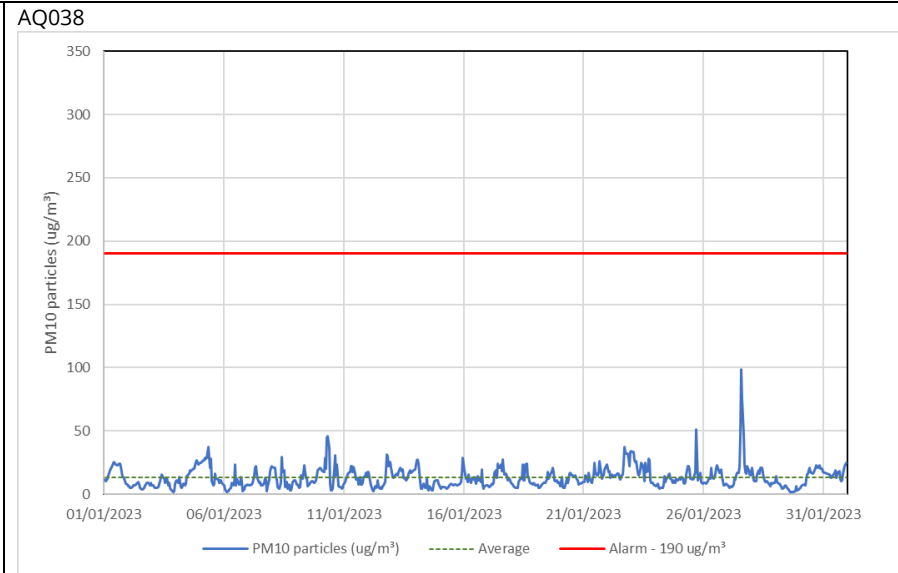
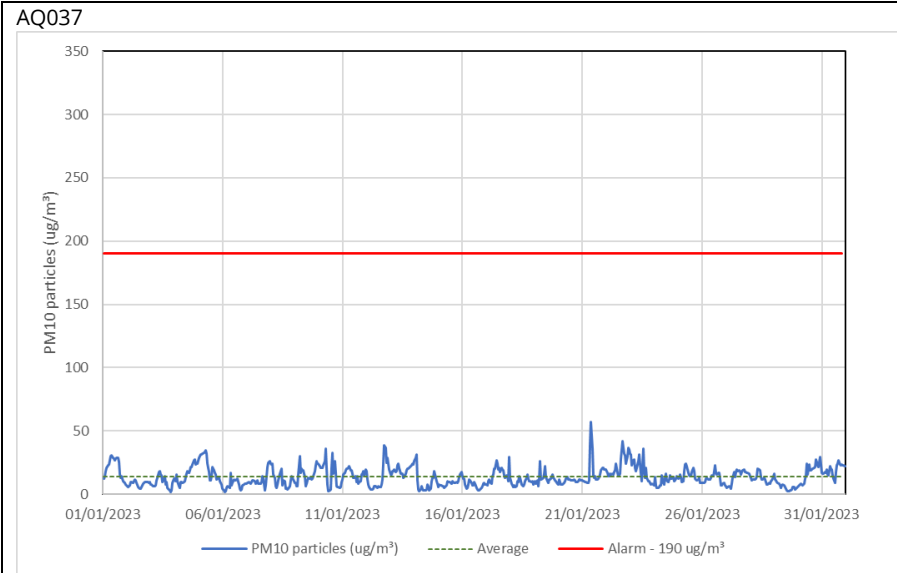
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ051	22/01/2023 09:01 – 10:00; 902.6 µg/m <sup>3</sup> 10:01 – 11:00; 478.5 µg/m <sup>3</sup> 11:01 – 12:00; 223.0 µg/m <sup>3</sup>  18:01 – 19:00; 272.9 µg/m <sup>3</sup> 19:01 – 20:00; 399.2 µg/m <sup>3</sup> 20:01 – 21:00; 388.8 µg/m <sup>3</sup> 21:01 – 22:00; 368.9 µg/m <sup>3</sup> 22:01 – 23:00; 320.1 µg/m <sup>3</sup> 23:01 – 00:00; 2966.6 µg/m <sup>3</sup>	At the time of the triggers there were no dusty works being undertaken on site. The monitor had a faulty heater and thus monitored levels during January were higher / false due to being high humidity and frost – confirmed on both series of triggers.	The monitor was serviced, and the heater replaced later in the day on the 25th January.
AQ051	23/01/2023 00:01 – 01:00; 3982.4 µg/m <sup>3</sup> 01:01 – 02:00; 2236.6 µg/m <sup>3</sup> 02:01 – 03:00; 214.2 µg/m <sup>3</sup>  09:01 – 10:00; 1073.5 µg/m <sup>3</sup> 10:01 – 11:00; 3127.1 µg/m <sup>3</sup>		
AQ051	25/01/2023		

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
	07:01 – 08:00; 263.4 µg/m <sup>3</sup> 08:01 – 09:00; 489.9 µg/m <sup>3</sup> 09:01 – 10:00; 412.9 µg/m <sup>3</sup> 10:01 – 11:00; 272.1 µg/m <sup>3</sup> 11:01 – 12:00; 199.7 µg/m <sup>3</sup>		
AQ027	25/01/2023 15:01 – 14:00; 327.07 µg/m <sup>3</sup>	At the time of the trigger there were no dusty works being undertaken in the vicinity of the monitor. The monitor was being serviced at the time of the trigger which could have impacted the recording.	n/a

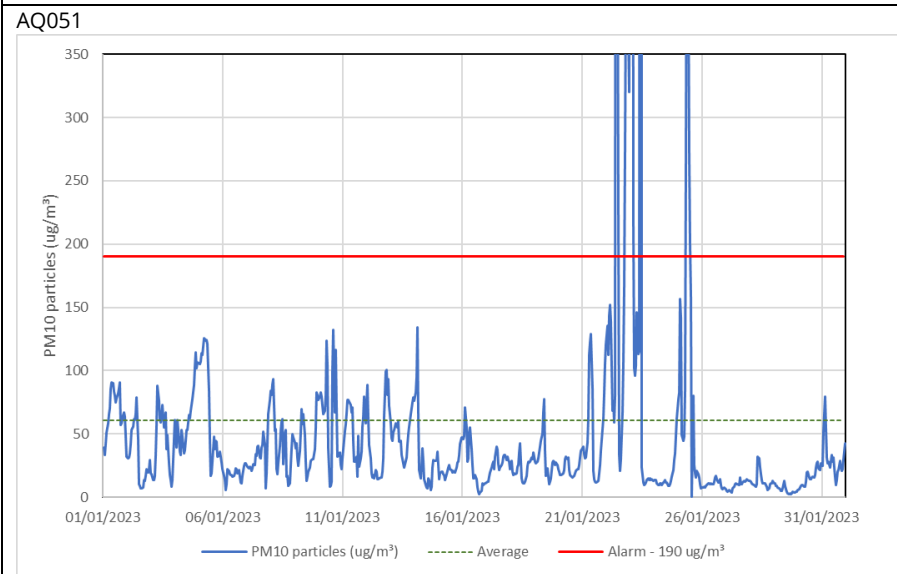
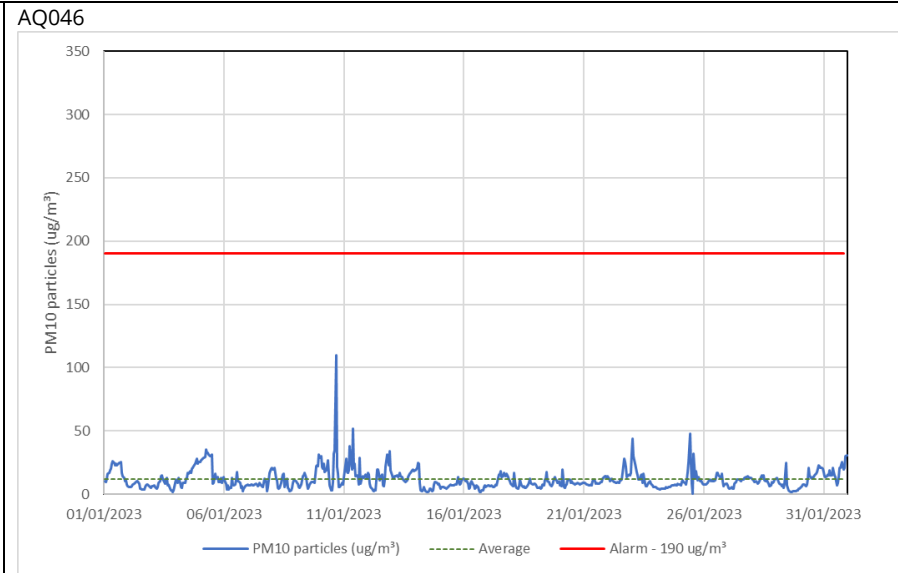
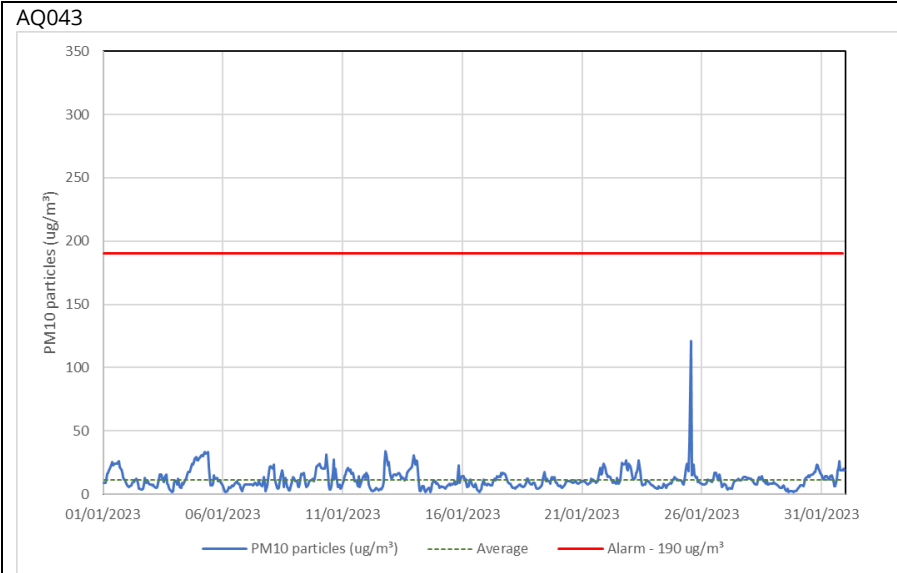
Figure 5: Construction dust 1-hour mean indicative PM<sub>10</sub> concentration for dust monitors











## Appendix C – Air Quality Monitoring Results

Table 3: NO<sub>2</sub> monitoring locations around highways, NO<sub>2</sub> concentrations and monthly monitoring results with running mean for 2022 (µg/m<sup>3</sup>)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean <sup>1</sup>
HS2-000020BN5	Sign post on Victoria Road	521443, 182477	65	52	55	39	36	37	45	51	55	53	55	53	50
HS2-000020BN7	The Approach street sign	520959, 181102	76	Tube Missing	46	41	45	39	41	38	49	Tube Missing	52	48	48
HS2-000020BQF	Conway Drive sign post	520856, 181733	66	44	62	55	No data	40	47	51	49	46	50	Tube Missing	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	45	48	45	41
HS2-000020BQZ	Lamp post on Victoria Road opposite Tudor House	521354, 182425	49	45	57	47	42	45	48	51	55	51	Monitoring Finished	Location Finished	49
HS2-000020BR0	Sign post on Shaftesbury Gardens	521295, 182354	50	33	40	30	24	21	27	29	33	27	Monitoring Finished	Location Finished	31
HS2-000020BR1	Lamp post on Midland Terrace	521263, 182298	43	30	38	30	21	24	24	26	33	30	Monitoring Finished	Location Finished	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	Tube Missing	Monitoring Finished	Location Finished	50

<sup>1</sup> 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 <sub>1</sub>
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	51	54	50	46
HS2-000020BP7	Triplicate site next to the Ealing, Hangar Lane Gyratory roadside automatic monitoring station	518537, 182708	87	67	65	Tube Missing	66	66	62	54	71	68	74	Tube Missing	68