

## Air Quality and Dust Monitoring Monthly Report – September 2022 London Borough of Hillingdon



## Department for Transport

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

Telephone: 08081 434 434

General email enquiries: [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

Website: [www.gov.uk/hs2](http://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 Hillingdon (LBH) during August and September 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](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 works commenced in November 2019 and is expected to be completed by 2025. The current worksites, as presented in Appendix A, Figure 1 to Figure 4, include:
- Gatemead and West Ruislip Embankment, Breakspear Road South and River Pinn Underbridge piling operations, groundworks and materials management, and conveyor construction;
  - Groundworks, piling and materials management, concreting and shuttering works at Copthall North and South;
  - West Ruislip Portal piling and groundworks, concreting and tunnel portal construction; and materials management;
  - South Ruislip ground works, piling operations, concrete works and materials management;
  - Northern Sustainable Placement Area (NSPA) materials movements and groundworks;
  - Southern Sustainable Placement Area (SSPA) site mobilisation and set-up, spoil treatment area construction, materials movements and groundworks

## **CVV Dews Lane**

- Jetty piling: piling platform relocation works;
- HOAC Compound: operation and de-sanding;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups, maintenance plant and clean up around piles;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation Works: GI works;
- Pier Construction: arch from pier and standard piers FRC works for pile cap and pier, post tensioning of AFD legs and tower crane mob / demob;

- ATFS Duct Installation: site preparation, installation of ducts and earthworks;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- South Abutment: earthworks/stabilisation, CFA piling, pile trimming & pile hat installation, FRC early works on SE and drainage works;
- Core Drilling of Concrete;
- Pile Trimming;
- Grand Union Canal Work: operation and maintenance;
- Harefield Lake No.2: compensation pond;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farm; demolition of bentonite farm RC slabs;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;
- RC Crossing: emergency dismantling of obstruction;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling, external PT and internal PT stressing & grouting; and
- Deck Finishes: delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within deck.

### **CVV Moorhall Road**

- Jetty piling: piling platform relocation works;
- HOAC Compound: operation and de-sanding;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- North and South Moorhall Road: compound operation and de-sanding compound;
- Haul Road and Jetty Maintenance: operation and maintenance
- Ground Investigation Works: GI works;
- NYGB Re-alignment;
- Pier Construction: arch from pier and standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts and earthworks;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- Core Drilling of Concrete;
- Pile Trimming;

- Harefield Lake No.2: compensation pond;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farm; demolition of bentonite farm RC slabs;
- RC Crossing: emergency dismantling of obstruction;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling and internal PT stressing & grouting; and
- Deck Finishes: delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within deck.

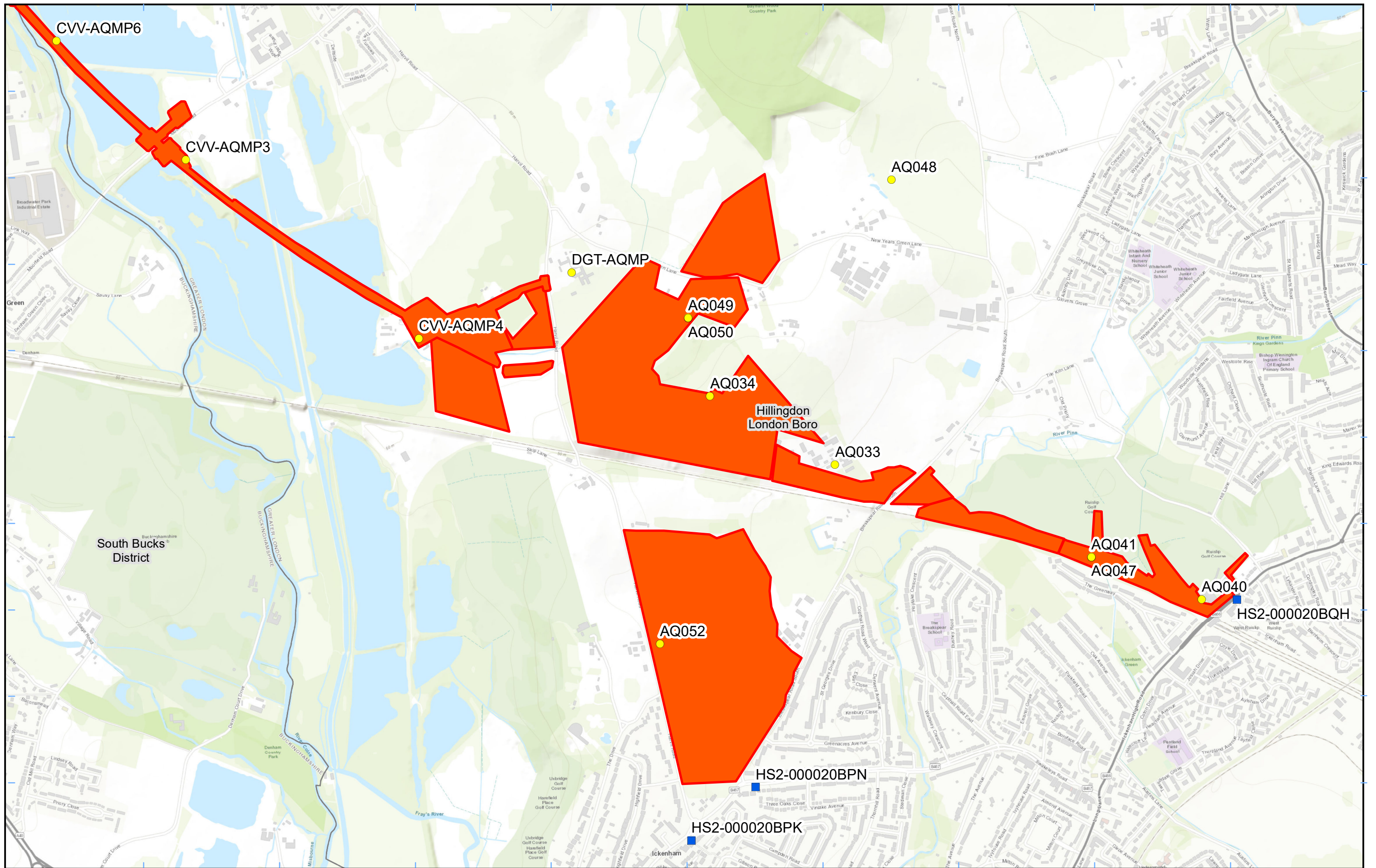
- 1.1.5 Thirteen (13) dust monitors are installed around worksites where works are underway. These sites returned a low to high dusk risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor in Figure 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 190µg/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 (September 2022) and are reported in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in September 2022 due to power supply issues and relocation of monitors.
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO<sub>2</sub>) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects August 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 NO<sub>2</sub> monitoring locations and results are presented in Appendix C, Table 3, together with the 2022 running mean.
- 1.1.13 There were no (0) complaints received during this reporting period.

# Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 4: Current monitoring locations within the LBH







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

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Map Number  
 Map Name  
**Worksite and Monitoring Locations  
 In LBH (Sheet 1)**  
 London Borough of Hillingdon


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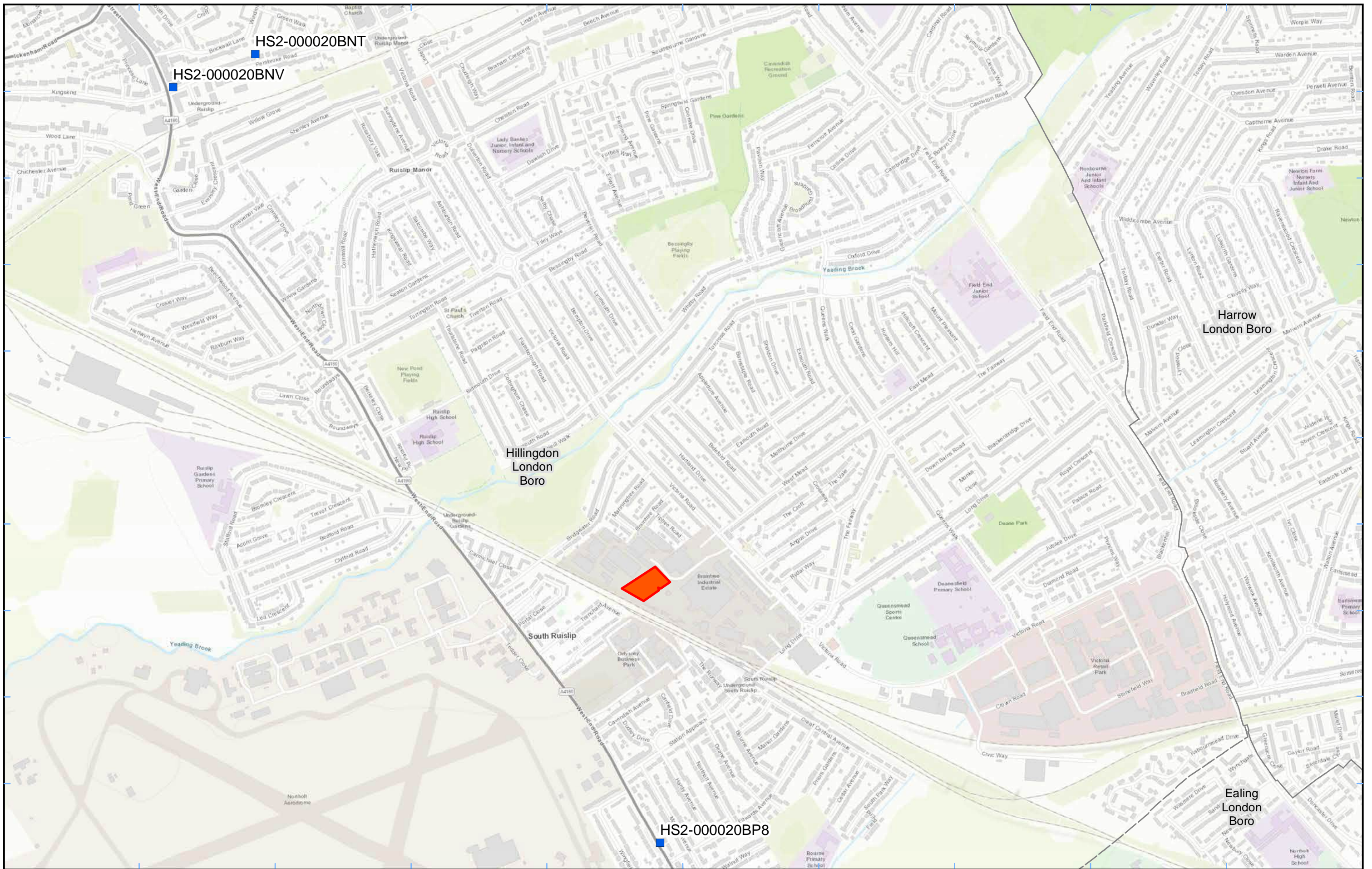
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**Legend**  
■ Diffusion Tube  District Borough Unitary Boundaries  
 Worksite

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Map Number  
 Map Name  
**Worksite and Monitoring Locations  
 In LBH (Sheet 2)**  
 London Borough of Hillingdon

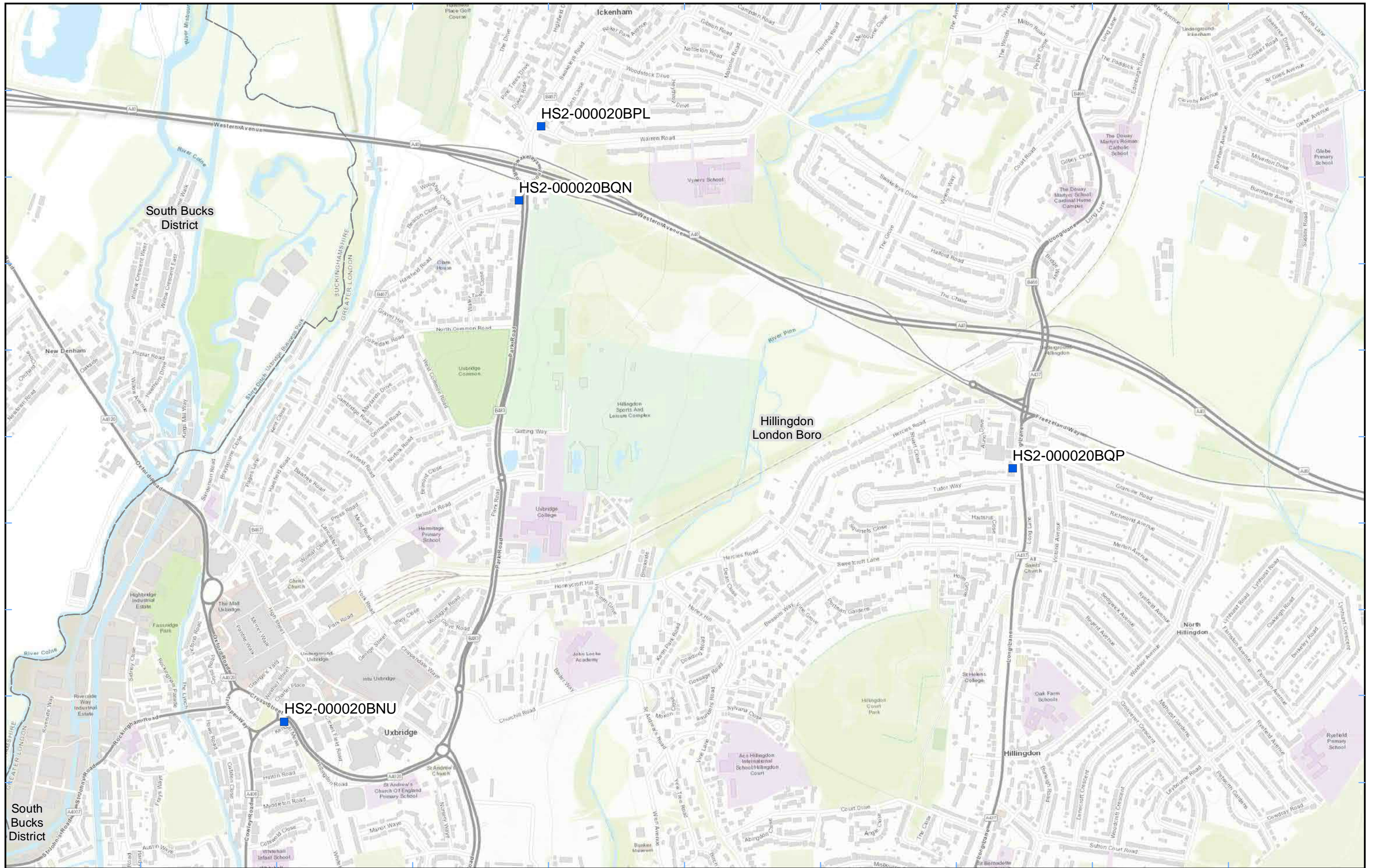
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**Legend**  
 ■ Diffusion Tube  
 □ District Borough Unitary Boundaries

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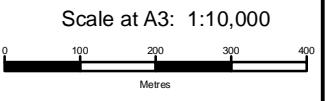
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 Map Name  
**Monitoring Locations In LBH (Sheet 3)**  
**London Borough of Hillingdon**



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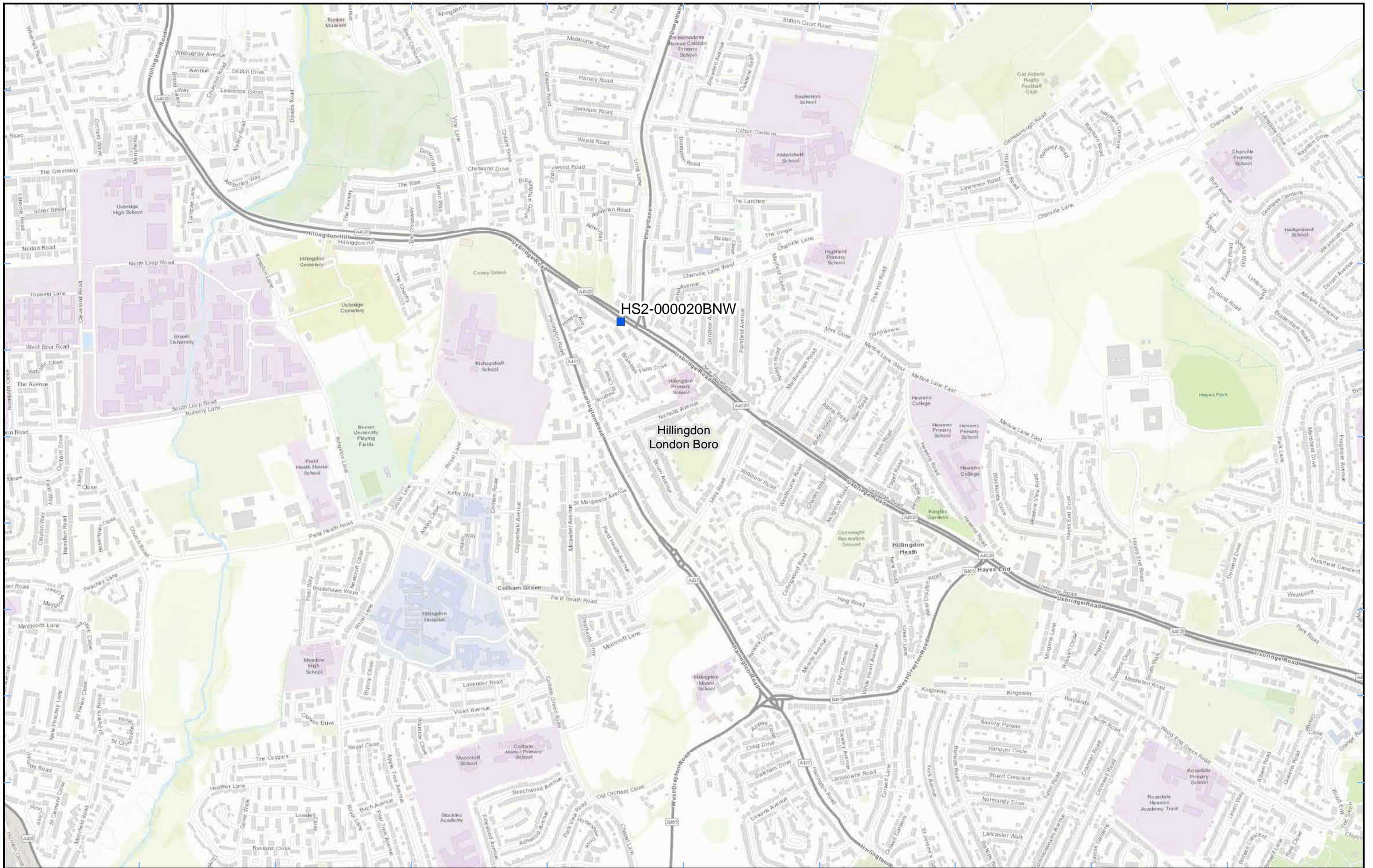


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Hillingdon  
London Boro

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

Map Number  
Map Name  
**Monitoring Locations In LBH (Sheet 4)**  
**London Borough of Hillingdon**

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## Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and September 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 <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 (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	10.0	1.8	180.9	0	98.5
AQ034	506608, 187592	Copthall Cutting	L	Yes	N	18.5	2.6	289.5	2	100.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	13.7	3	88.8	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	17.4	3.8	106.6	0	100.0
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	6.6	0.9	37.48	0	100.0
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	7.7	1.97	40.37	0	78.7
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	No data	No data	No data	No data	No data
AQ050	506531, 187865	Copthall South Compound	H	Yes	N	29.0	2.32	5239.68	4	97.4
AQ052	506433, 186725	Southern Sustainable Placement Area	H	Yes	N	No data	No data	No data	No data	No data
CVV-AQMP3	504773, 188419	Moorhall Road	M	Yes	Y	6.1	1.0	31.0	0	89

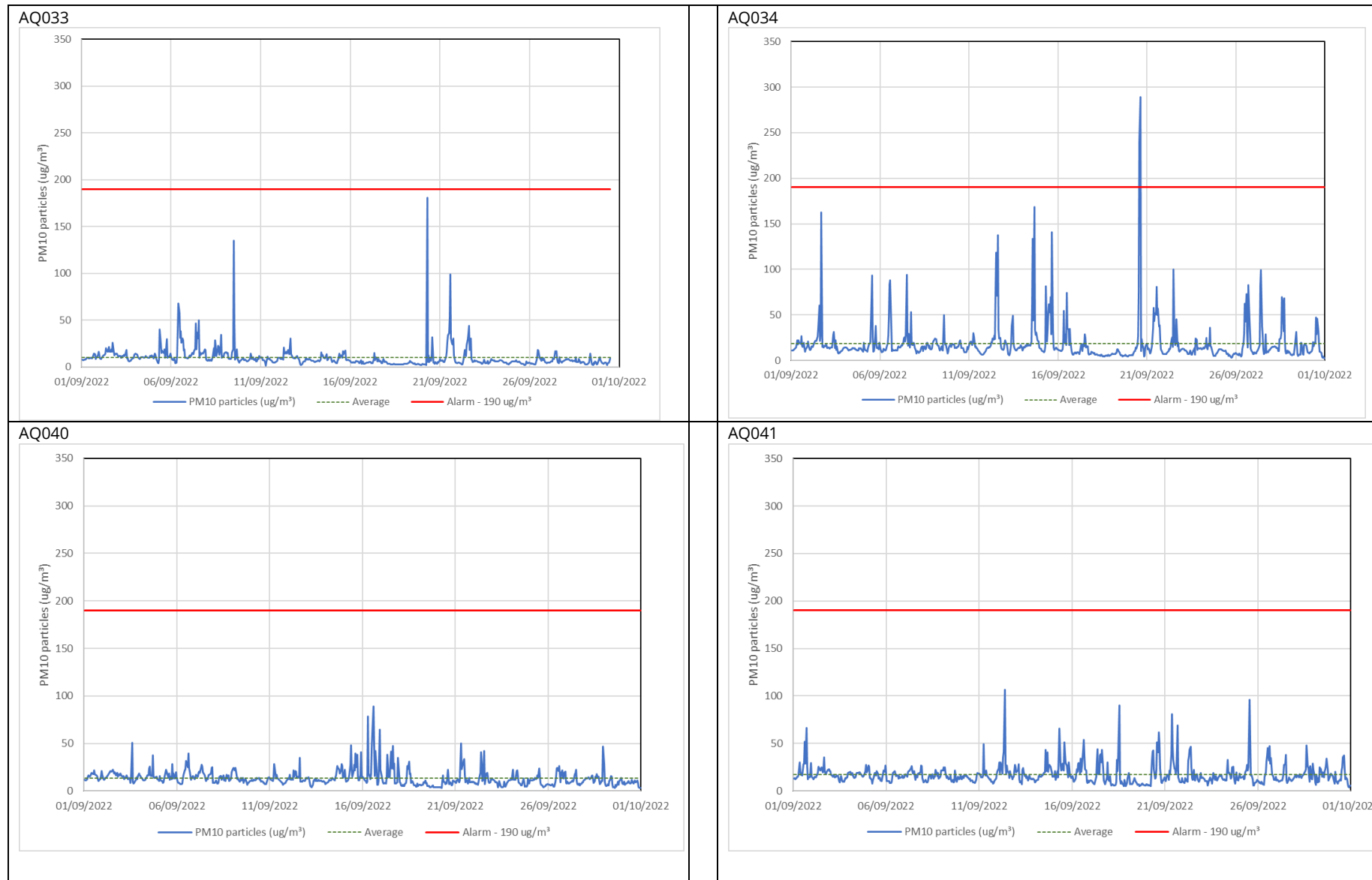
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 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 (%)
CVV-AQMP4	505589, 187793	Dews Lane	M	Yes	Y	6.1	1.0	22.0	0	97
DGT-AQMP	506124, 188025	Harvil Road.	M	Yes	Y	5.9	1.0	30.0	0	100
CVV-AQMP6	504321, 188835	Moorhall road.	M	Yes	Y	6.3	2.0	106.0	0	51

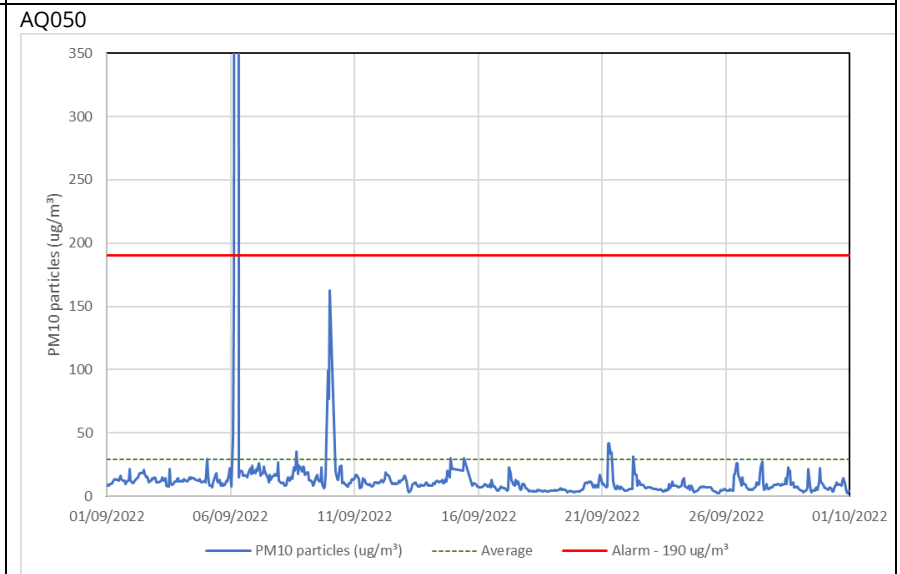
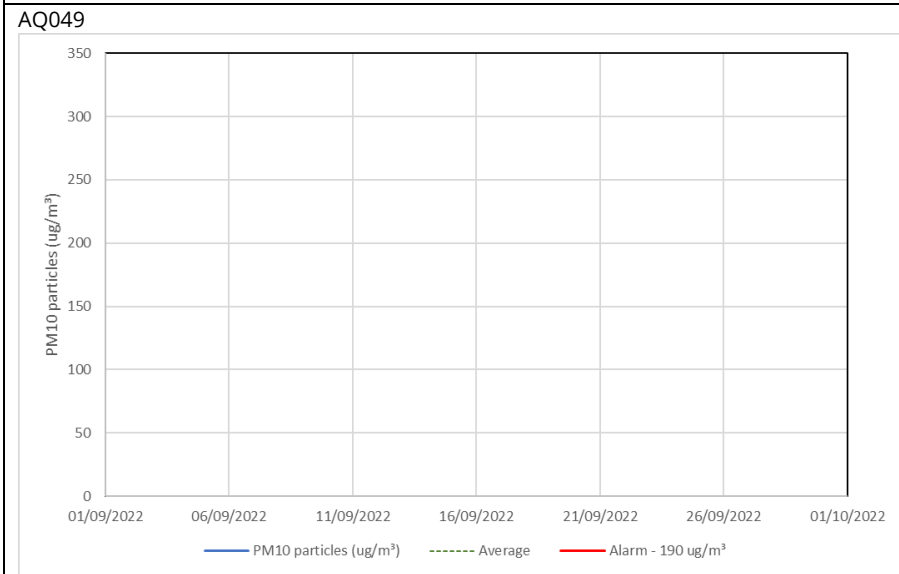
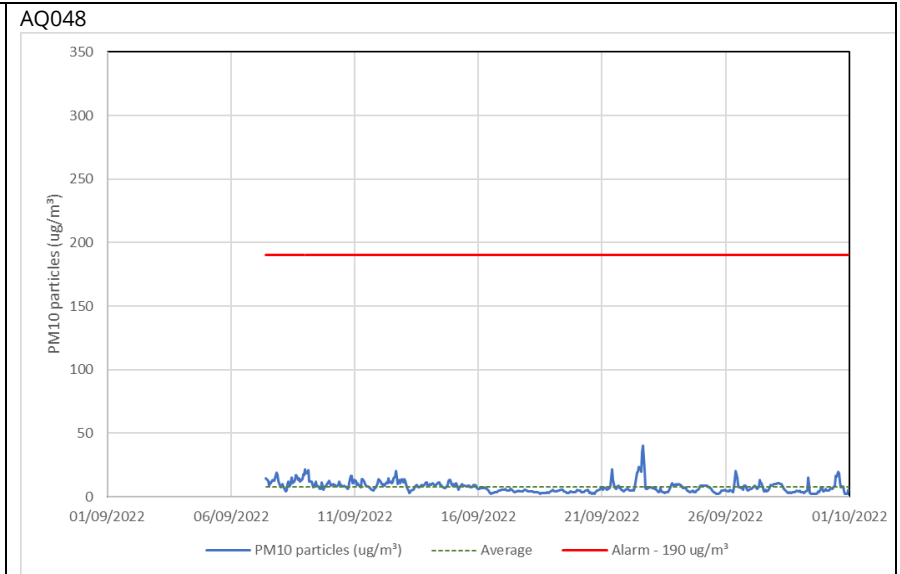
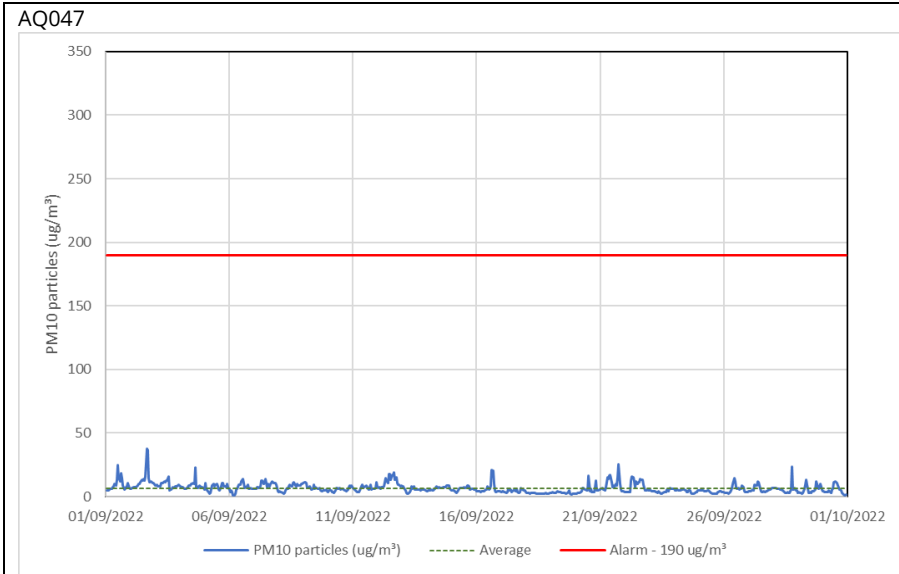


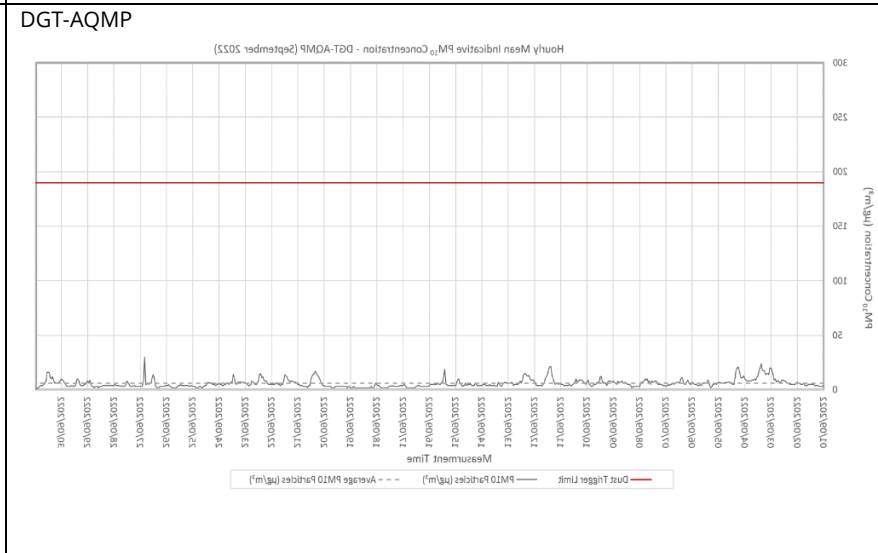
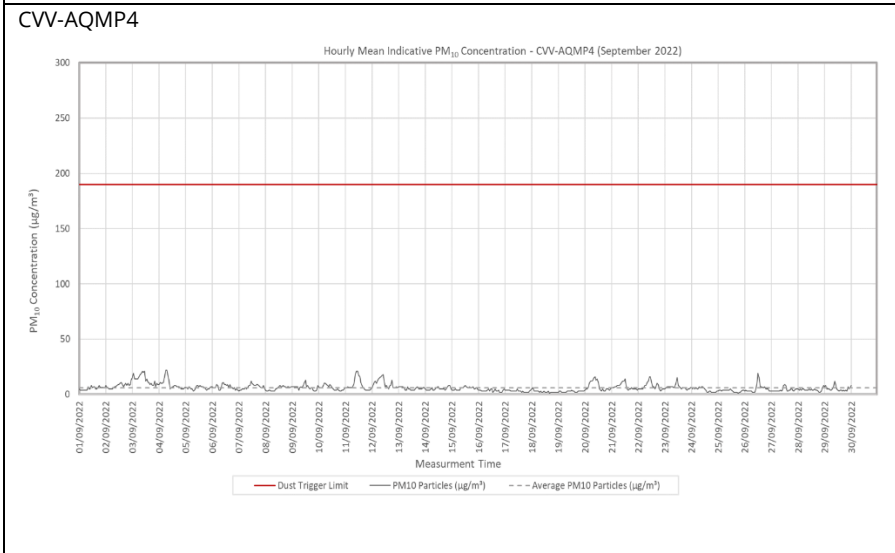
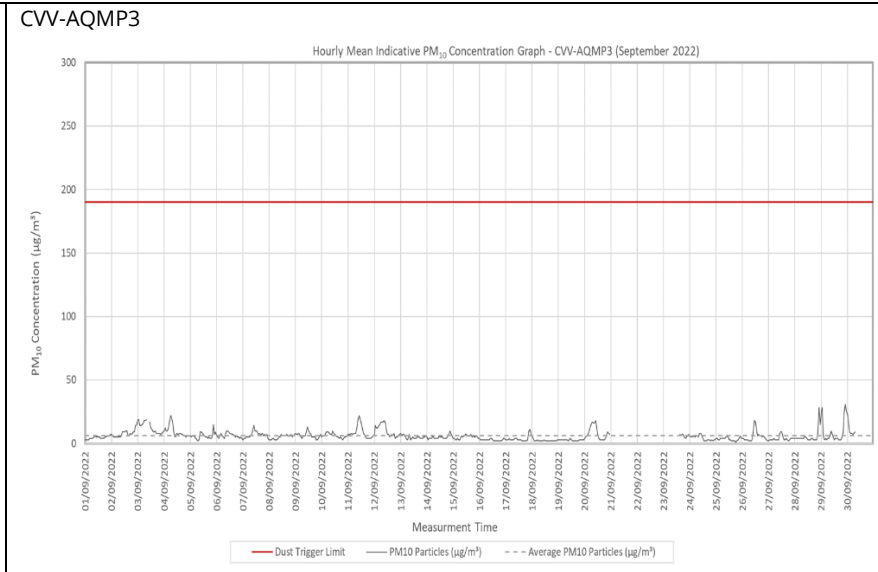
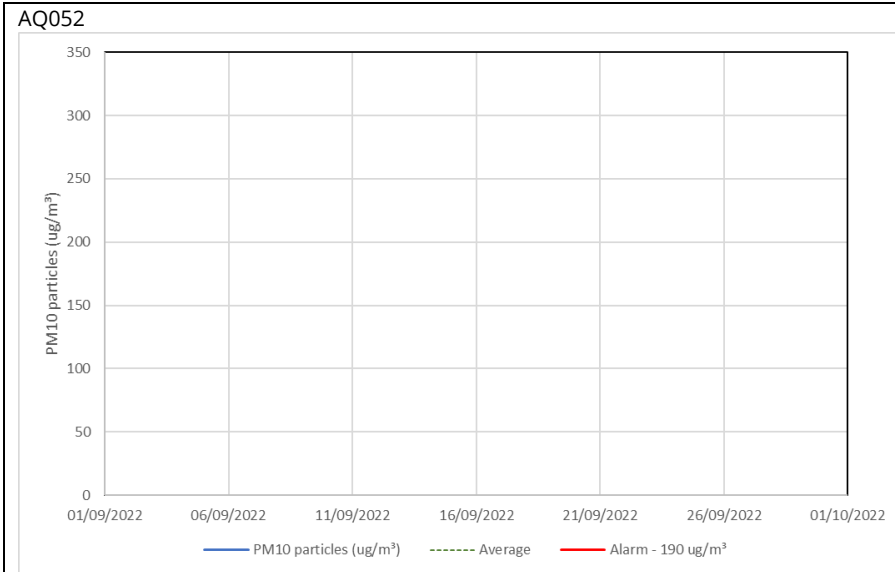
Table 2: Summary of exceedances of trigger level in September 2022

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ050	06/09/2022 03:01 – 04:00; 927.4 µg/m <sup>3</sup> 04:01 – 05:00; 4157.5 µg/m <sup>3</sup> 05:01 – 06:00; 5239.7 µg/m <sup>3</sup> 06:01 – 07:00; 2090.4 µg/m <sup>3</sup>	At the time of trigger weather conditions were damp/ wet / misty and there were no activities taking place in the area that could've caused the trigger. The excessive triggers were associated with high moisture content in the air affecting the monitors and giving false readings.	n/a
AQ034	20/09/2022 13:01 – 14:00; 240.3 µg/m <sup>3</sup> 14:01 – 15:00; 289.5 µg/m <sup>3</sup>	At the time of the trigger alert there was haulage of dump trucks along the haul road but no noticeable dusty conditions or kick up of dust observed.  The haulage road is regularly damped down throughout each day with regular circuits of the bowser and road sweeper. However, it is considered that the haul road may have experienced a brief drying out in that location	Subsequent monitored levels dropped and remained low thereafter. The site team were reminded of the need to maintain dust suppression and sweeping in all areas of the site. The on-site bowsters and road sweepers will continue to maintain circuits of all the internal haul routes throughout each day.

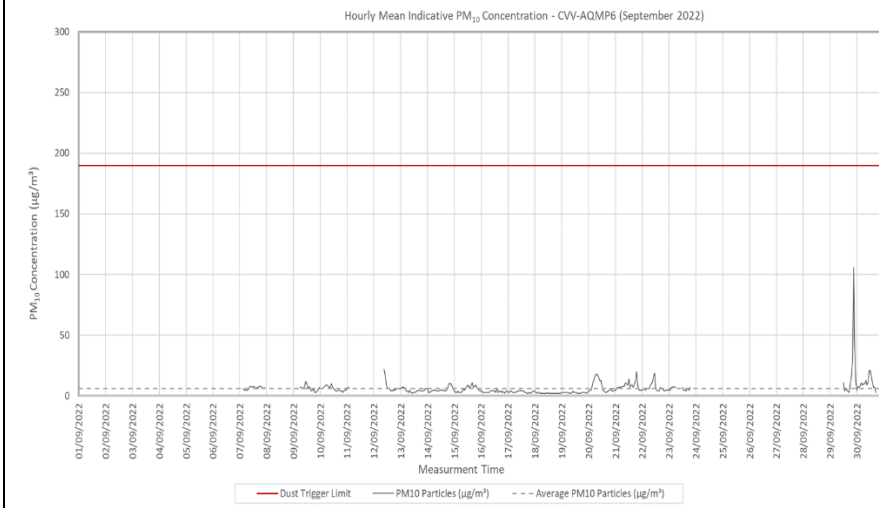
Figure 5: Construction dust 1-hour mean indicative PM<sub>10</sub> concentration for dust monitors







CVV-AQMP6





## Appendix C – Air Quality Monitoring Results

Table 2: 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>
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	39	25	33	19	16	Tube Missing	13	17					23
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	60	47	49	41	36	39	39	40					44
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	51	Tube Missing	48	35	27	28	35	36					37
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	53	29	60	41	28	33	36	47					41
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	46	30	40	33	27	25	29	34					33
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40	37	28	31	33	33	28					35
HS2-000020BPN	Lamp post on B467	506767, 186224	47	34	43	30	Tube Missing	19	29	28					33

<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 <sup>1</sup>
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	61	41	40	Tube Missing	No data	No Access	43	40					45
HS2-000020BQN	Lamp post on Park Road	506176, 185444	53	36	56	40	No data	33	36	38					36
HS2-000020BQP	Sign post on Long Lane	507614, 184663	50	36	56	37	32	33	36	40					40
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	42	32	45	33	27	26	31	32					33