

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



## 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 Hillingdon (LBH) during February 2022 and March 2022 respectively.
- 1.1.2 Figure 1 to Figure 4 in Appendix A indicate the current worksites, together with air quality 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 July 2017 and is expected to be completed by 2025. The current worksites, as presented in Appendix A, Figure 1 to Figure 4, include:
- Gatemead Embankment, Breakspear Road South and River Pinn Underbridge piling operations, groundworks and materials management;
  - Groundworks, piling and materials management, concreting and shuttering works at Copthall North and South;
  - West Ruislip Portal piling and groundworks, concreting and materials management;
  - South Ruislip ground works, piling operations, concrete works and materials management;
  - Northern Sustainable Placement Area (NSPA) conveyor construction and groundworks; and
  - Southern Sustainable Placement Area (SSPA) site mobilisation and set- up, spoil treatment area construction.

## **CVV Dews Lane**

- Jetty piling: piling plant, support plant, platform and compound;
- HOAC Compound: compound operation;
- 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, bored pile break-down to prepare the pile surface, grout curtain around viaduct pile groups maintenance plant;
- Haul Road 26,000-26,600: earthworks and drainage;
- INNS-GUC to Harvil Road: removal works;
- Ground Investigation Works: GI works;
- North Abutment: slab & wall construction, backfilling at abutment walls;
- South Abutment: earthworks, driven pile mobilisation, CFA piling-mobilisation & installation and test piling;

- Core Drilling of Concrete;
- Pile Trimming;
- Grand Union Canal Work: pontoon installation and condition survey;
- Harefield Lake No.2: compensation pond;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- NYGB River Crossing;
- Cofferdam Excavation; and
- Utilities.

### **CVV Moorhall Road**

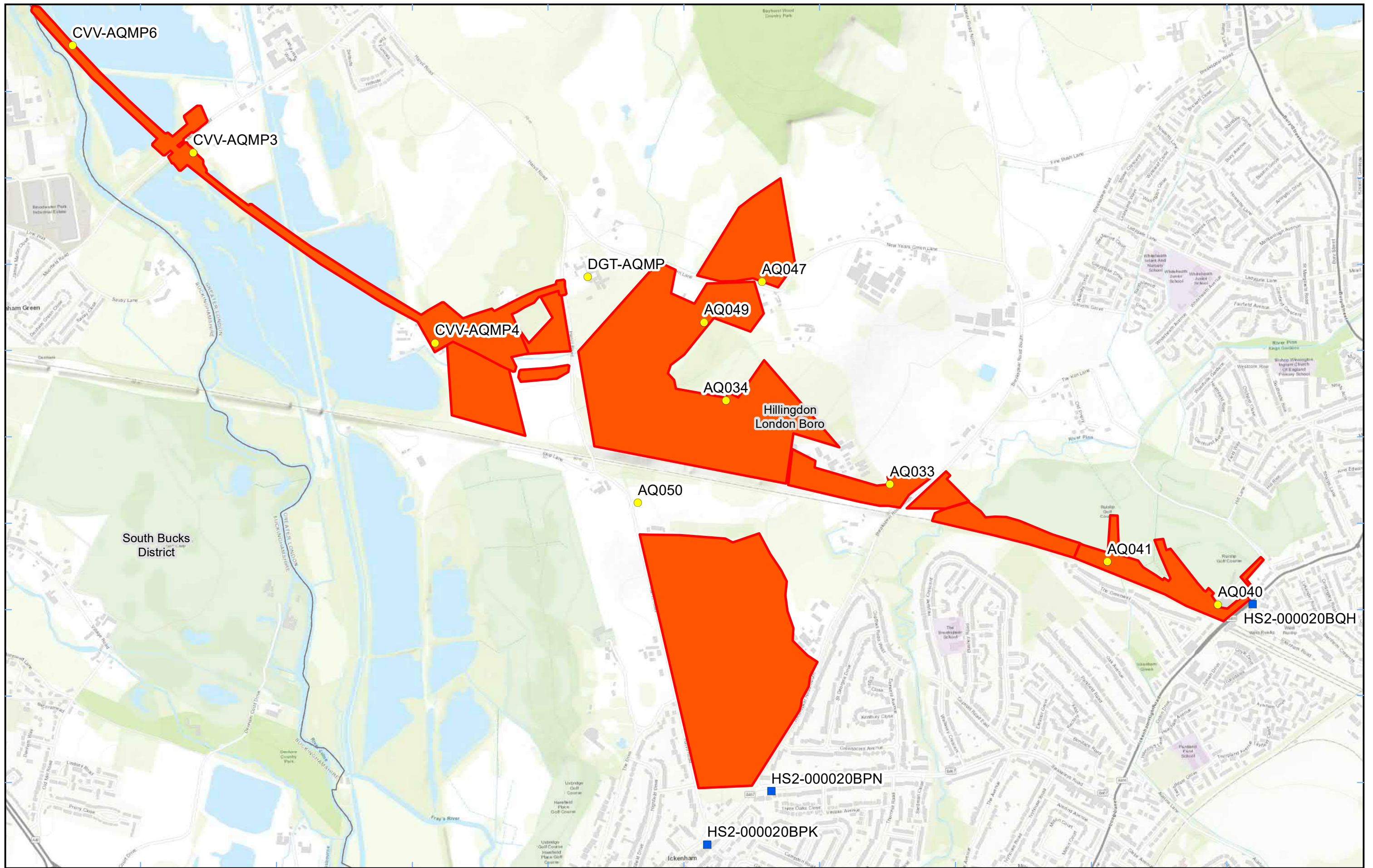
- Jetty Piling: piling plant, support plant, platform and compound;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, desanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pile break-down to prepare the pile surface and grout curtain around viaduct pile groups maintenance plant;
- South & North Moorhall Road Compound: compound operation and de-sanding compound;
- Haul Route: preparation works, finishing works and fencing;
- INNS-River Colne to GUC: removal;
- Ground Investigation Works: GI works;
- River Colne Realignment;
- Crossings Tarmac: A412 & Moorhall Road Junction;
- CFA Pile Caps at P22 & P30: CFA piling, FRC to pile caps and earthworks;
- Pumping water management from ch 25.900 to 29.500;
- Maintenance of the haul road from ch 25.900 to 29.500;
- Satellite welfares;
- Generator farms;
- Core drilling of concrete;
- Pile Trimming;
- A412 Gas Crossing: emergency dismantling;
- Grand Union Canal Work: pontoon installation and condition survey;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversion;
- Environmental Maintenance;
- Arch Form Deck Pier 33 and straight Pier P38: pile cap construction
- Cofferdam Excavation; and
- Utilities.

1.1.5 Eleven (11) dust monitors are installed around worksites, where works are underway. These sites returned a low to 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 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 (March 2022) and are reported in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in March 2022 due to power supply issues and monitor faults.
- 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 may 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 4: Current monitoring locations within the LBH



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

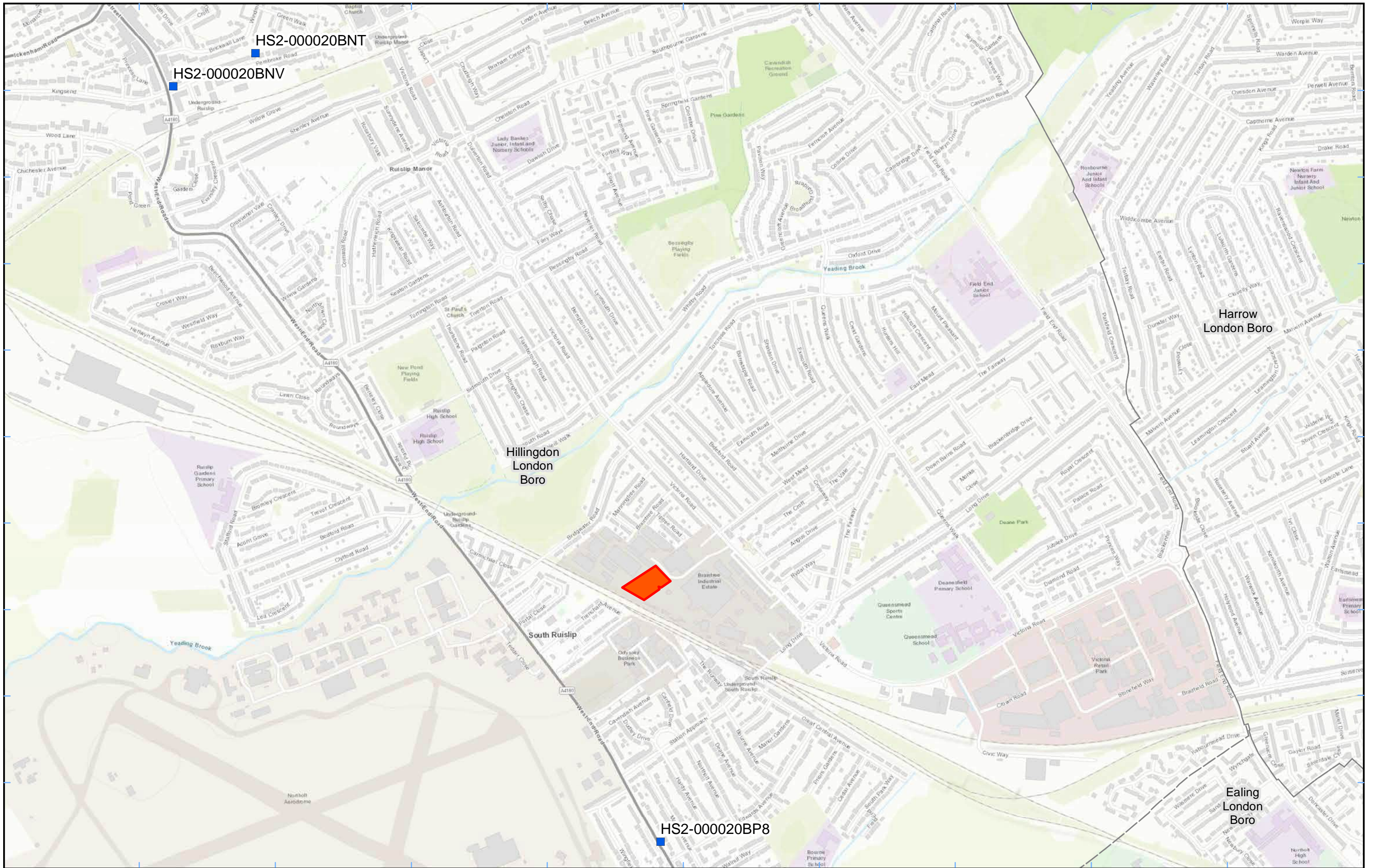
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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

**hs2**  
 Registered in England. Registration number 06791686.  
 Registered office: 2 Snowhill, Queensway,  
 Birmingham B4 6GA.

Scale at A3: 1:12,000  
 0 120 240 360 480  
 Metres


Doc Number: Date: 03/11/21



**Legend**  
■ Diffusion Tube  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 and Monitoring Locations  
 In LBH (Sheet 2)**  
 London Borough of Hillingdon



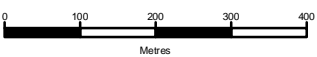
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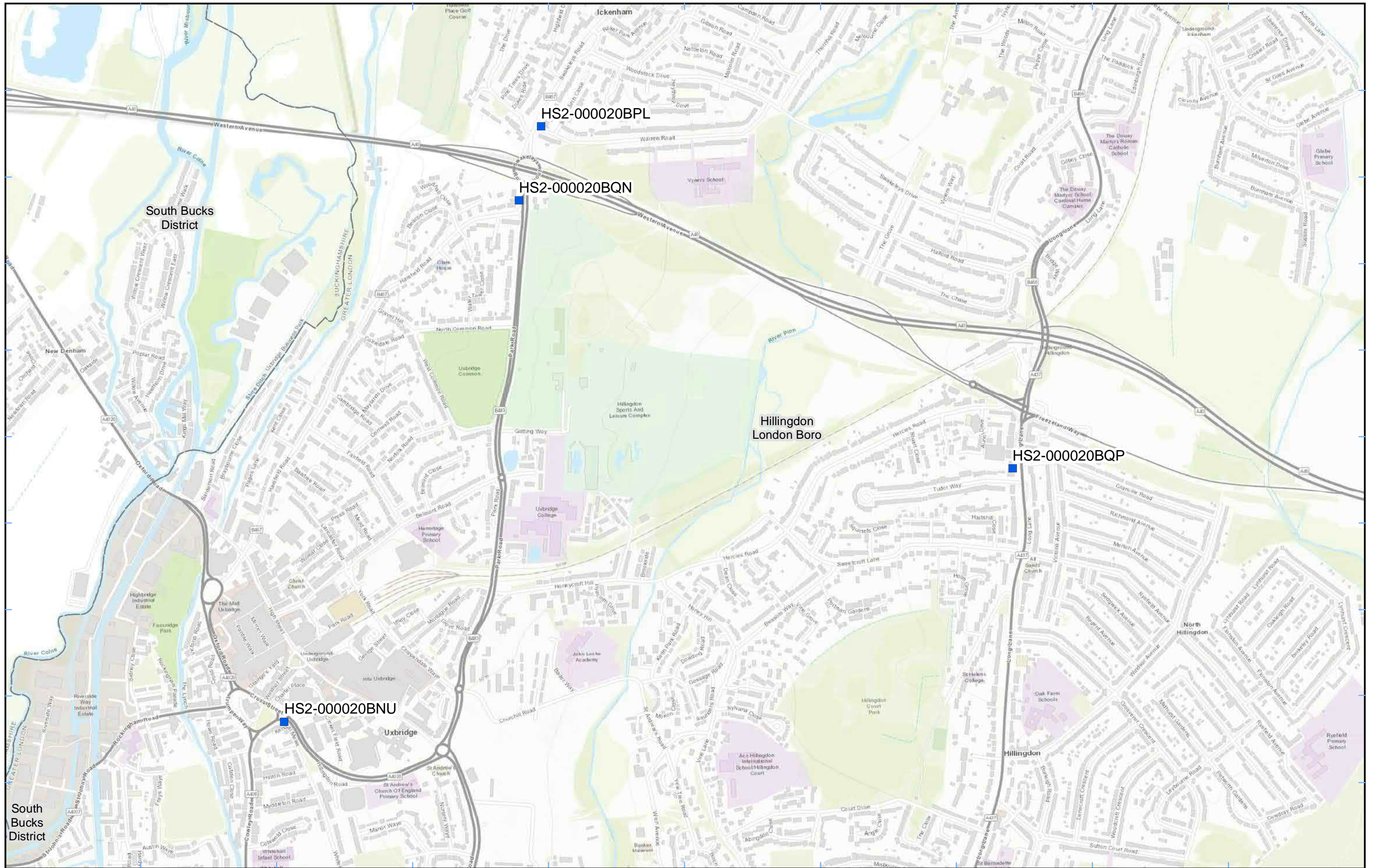
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Metres

**Date: 08/12/20**





**Legend**  
 Diffusion Tube  
 District Borough Unitary Boundaries

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

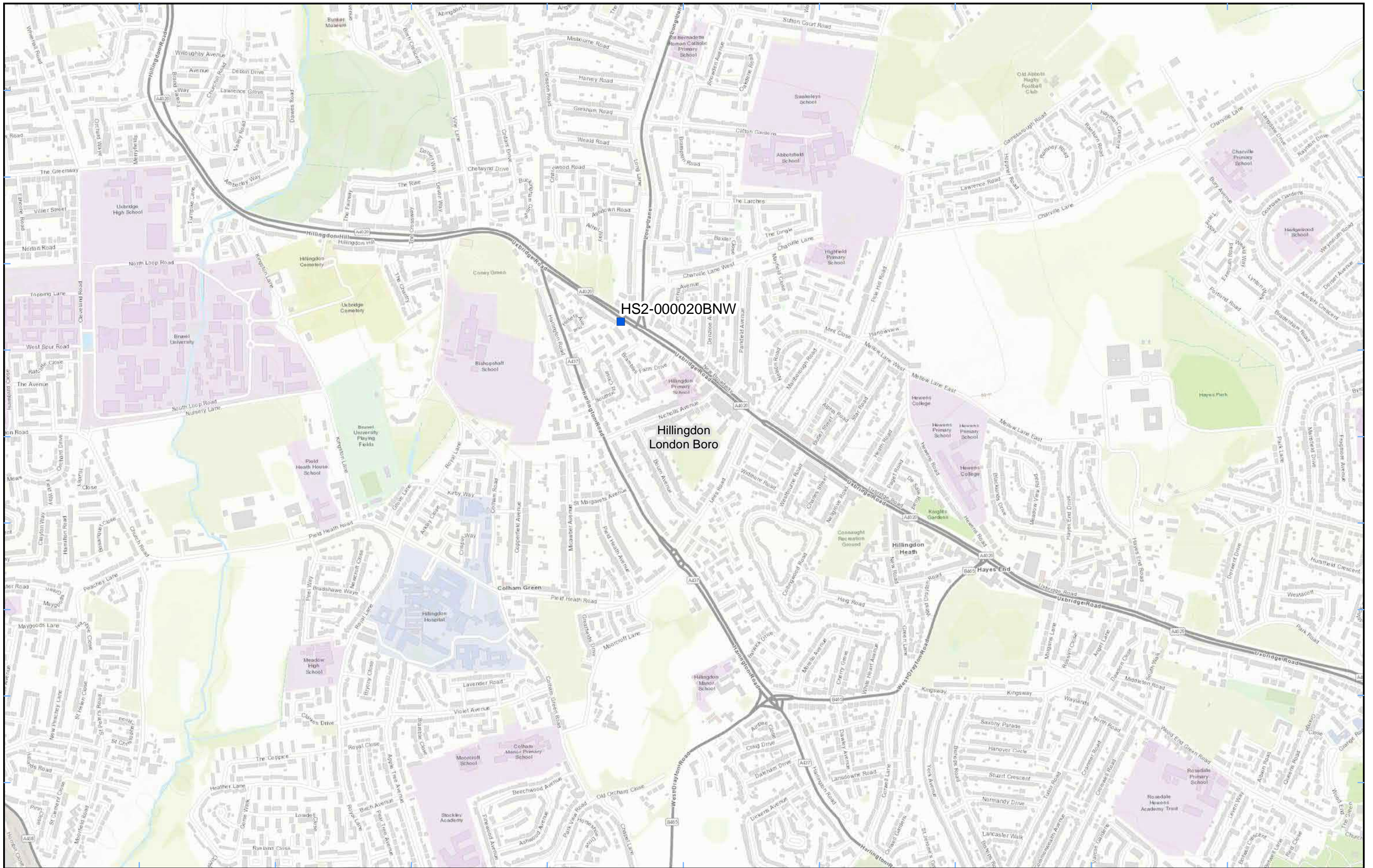
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**Legend**  
■ Diffusion Tube  
 District Borough Unitary Boundaries

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

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**Doc Number:**

Scale at A3: 1:10,000

Metres

**Date: 08/12/20**

## Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and March 2022 Results

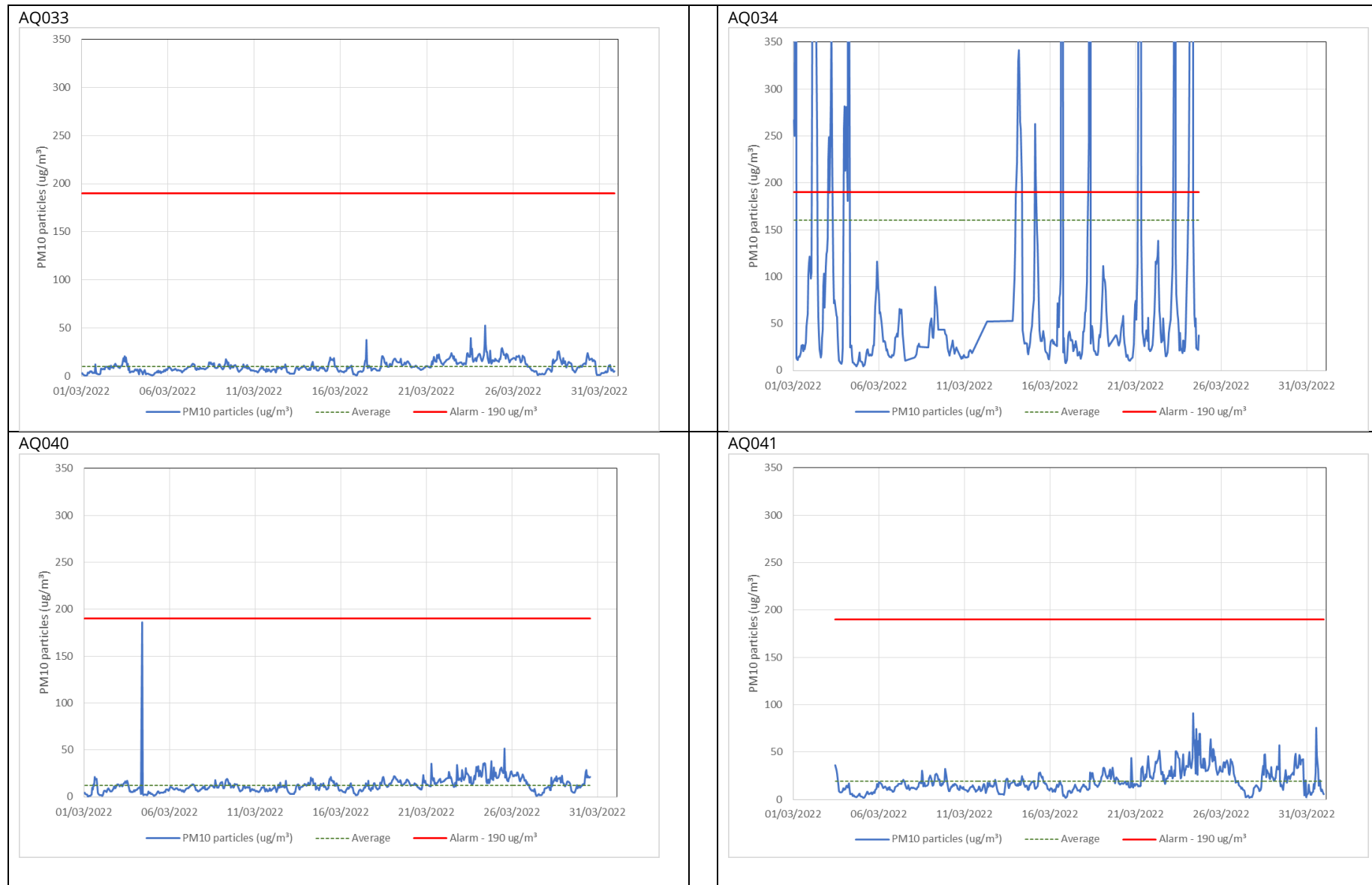
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 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	10.2	0.5	52.4	0	100.0
AQ034	506608, 187592	Copthall Cutting	L	Yes	N	160.1	4.1	6527.9	54	62.8
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	12.5	0.6	186	0	95.4
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	19.6	1.5	91.4	0	92.2
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	6.0	0.5	16	0	9.6
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	13.5	0.6	107.4	0	80.7
AQ050	506531, 187865	Copthall South Compound	M	Yes	N	-	-	-	-	-
CVW-AQMP3	504773, 188419	Moorhall Road	M	Yes	Y	17.2	1.0	106.0	0	47.0
CVW-AQMP4	505589, 187793	Dews Lane	M	Yes	Y	18.1	1.0	102.0	0	99.0
DGT-AQMP	506124, 188025	Harvil Road.	M	Yes	Y	17.9	1.0	106.0	0	100.0
CVW-AQMP6	504321, 188835	Moorhall road.	M	Yes	Y	24.5	1.0	102.0	0	56.0

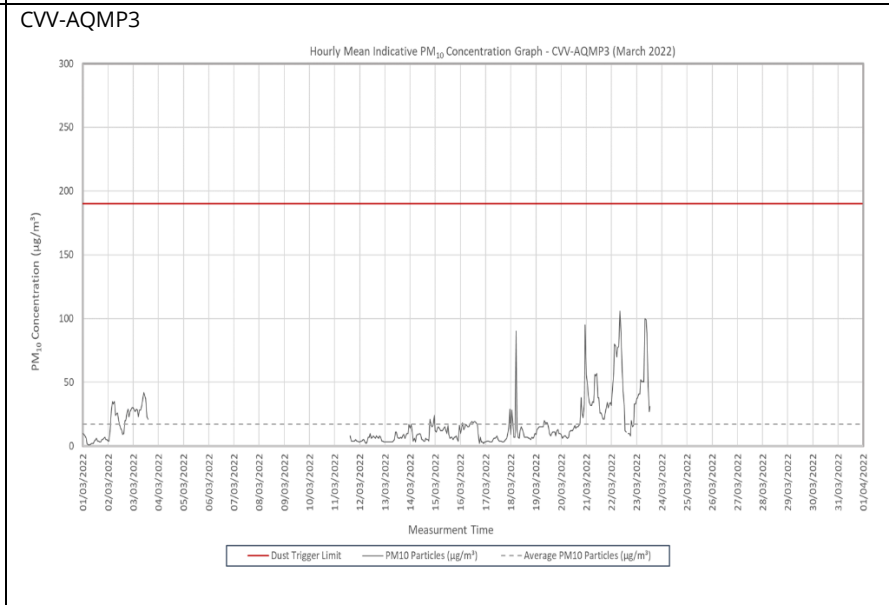
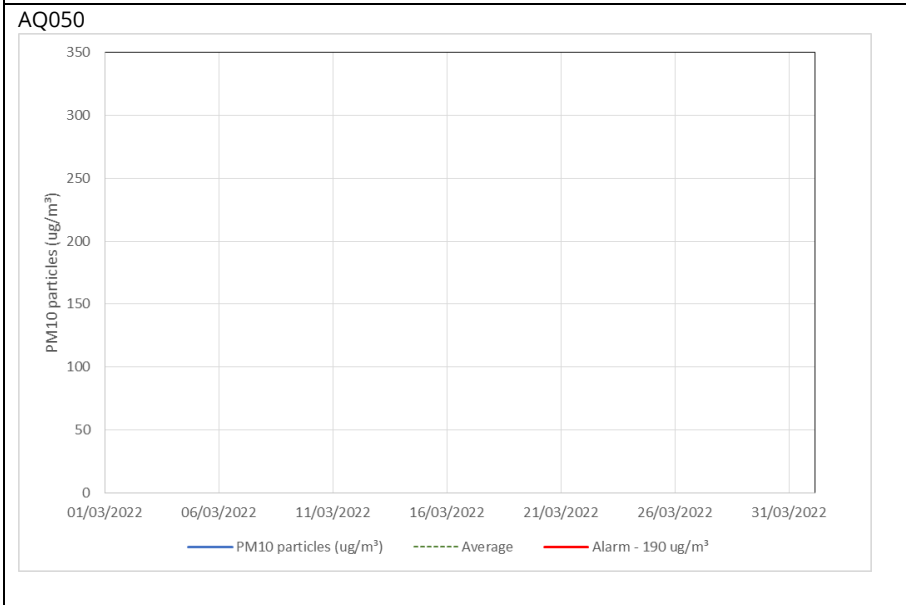
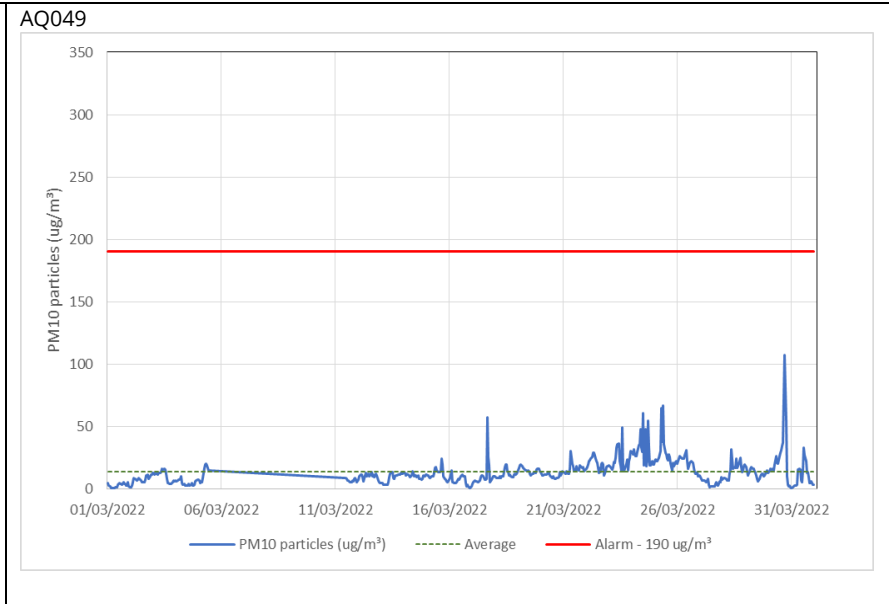
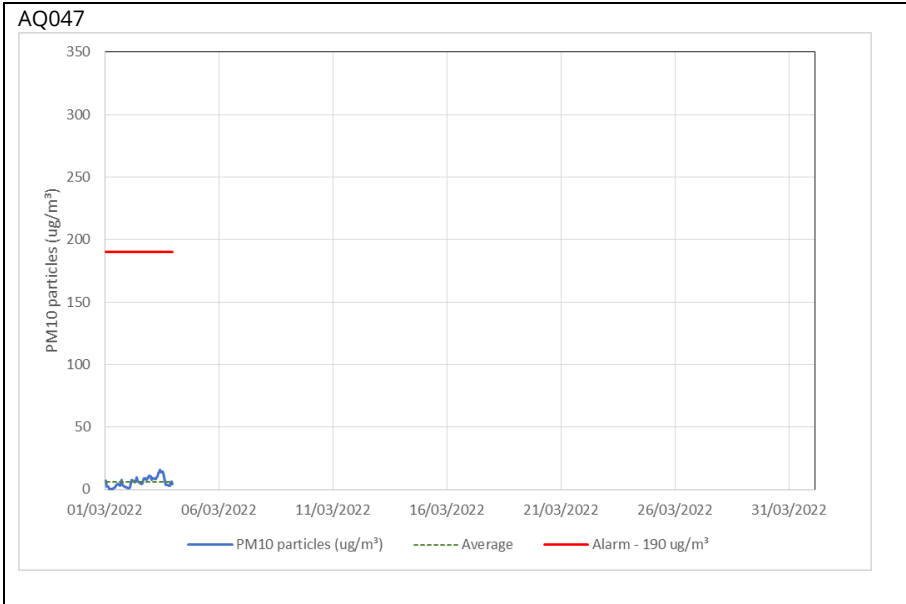
Table 2: Summary of exceedances of trigger level in March 2022

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	01/03/2022 00:01 – 01:00; 267.0 µg/m <sup>3</sup> 01:01 – 02:00; 250.1 µg/m <sup>3</sup> 02:01 – 03:00; 1501.7 µg/m <sup>3</sup>	<p>Triggers were only received during the early hours of the morning or at night when the site was shut, no activities were taking place and weather conditions were damp/ wet / misty.</p> <p>Triggers associated with high moisture content in the air affecting the monitors and giving false readings.</p> <p>The Solar/ wind power arrangement for the monitor has struggled over the winter months due to a lack of wind and sun. The monitor subsequently developed a fault in the latter half of the month.</p>	<p>Monitor to be repaired during April and the solar/wind power performance should improve as the spring /summer months approach.</p>
AQ034	02/03/2022 01:01 – 02:00; 293.8 µg/m <sup>3</sup> 02:01 – 03:00; 555.7 µg/m <sup>3</sup> 03:01 – 04:00; 989.6 µg/m <sup>3</sup> 04:01 – 05:00; 3902.3 µg/m <sup>3</sup> 05:01 – 06:00; 5550.5 µg/m <sup>3</sup> 06:01 – 07:00; 414.5 µg/m <sup>3</sup> 07:01 – 08:00; 333.3 µg/m <sup>3</sup> 08:01 – 09:00; 257.9 µg/m <sup>3</sup>		
AQ034	03/03/2022 00:01 – 01:00; 225.7 µg/m <sup>3</sup> 01:01 – 02:00; 248.9 µg/m <sup>3</sup>  03:01 – 04:00; 287.6 µg/m <sup>3</sup> 04:01 – 05:00; 377.3 µg/m <sup>3</sup> 05:01 – 06:00; 247.3 µg/m <sup>3</sup>  22:01 – 23:00; 258.5 µg/m <sup>3</sup>		
AQ034	04/03/2022 23:01 – 00:00; 281.8 µg/m <sup>3</sup> 00:01 – 01:00; 213.2 µg/m <sup>3</sup> 01:01 – 02:00; 281.3 µg/m <sup>3</sup> 02:01 – 03:00; 219.9 µg/m <sup>3</sup>  04:01 – 05:00; 930.0 µg/m <sup>3</sup> 05:01 – 06:00; 441.3 µg/m <sup>3</sup> 06:01 – 07:00; 294.5 µg/m <sup>3</sup>		
AQ034	14/03/2022 00:01 – 01:00; 221.1 µg/m <sup>3</sup>		

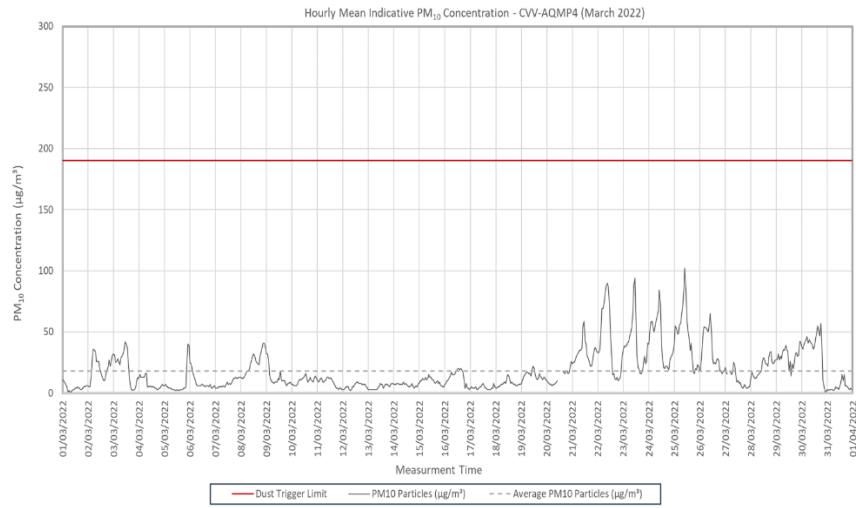
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
	01:01 – 02:00; 274.7 µg/m <sup>3</sup> 02:01 – 03:00; 329.9 µg/m <sup>3</sup> 03:01 – 04:00; 341.5 µg/m <sup>3</sup> 04:01 – 05:00; 312.3 µg/m <sup>3</sup> 05:01 – 06:00; 265.1 µg/m <sup>3</sup> 06:01 – 07:00; 257.6 µg/m <sup>3</sup> 07:01 – 08:00; 199.6 µg/m <sup>3</sup>		
AQ034	15/03/2022 02:01 - 03:00; 262.8 µg/m <sup>3</sup> 03:01 – 04:00; 207.2 µg/m <sup>3</sup>		
AQ034	16/03/2022 15:01 – 16:00; 1543.8 µg/m <sup>3</sup> 16:01 – 17:00; 1089.6 µg/m <sup>3</sup>		
AQ034	18/03/2022 04:01 – 05:00; 190.6 µg/m <sup>3</sup> 05:01 – 06:00; 241.9 µg/m <sup>3</sup> 06:01 – 07:00; 3512.7 µg/m <sup>3</sup> 07:01 – 08:00; 4663 µg/m <sup>3</sup>		
AQ034	21/03/2022 02:01 – 03:00; 303.8 µg/m <sup>3</sup> 03:01 – 04:00; 704.8 µg/m <sup>3</sup> 04:01 – 05:00; 1912.8 µg/m <sup>3</sup> 05:01 – 06:00; 636.8 µg/m <sup>3</sup> 06:01 – 07:00; 771.2 µg/m <sup>3</sup>		
AQ034	23/03/2022 04:01 – 05:00; 325.7 µg/m <sup>3</sup> 05:01 – 06:00; 632.4 µg/m <sup>3</sup> 06:01 – 07:00; 2345.7 µg/m <sup>3</sup>		
AQ034	24/03/2022 01:01 – 02:00; 205.3 µg/m <sup>3</sup> 02:01 – 03:00; 319.7 µg/m <sup>3</sup> 03:01 – 04:00; 521.9 µg/m <sup>3</sup> 04:01 – 05:00; 4269.6 µg/m <sup>3</sup> 05:01 – 06:00; 6527.9 µg/m <sup>3</sup> 06:01 – 07:00; 5000.0 µg/m <sup>3</sup>		

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

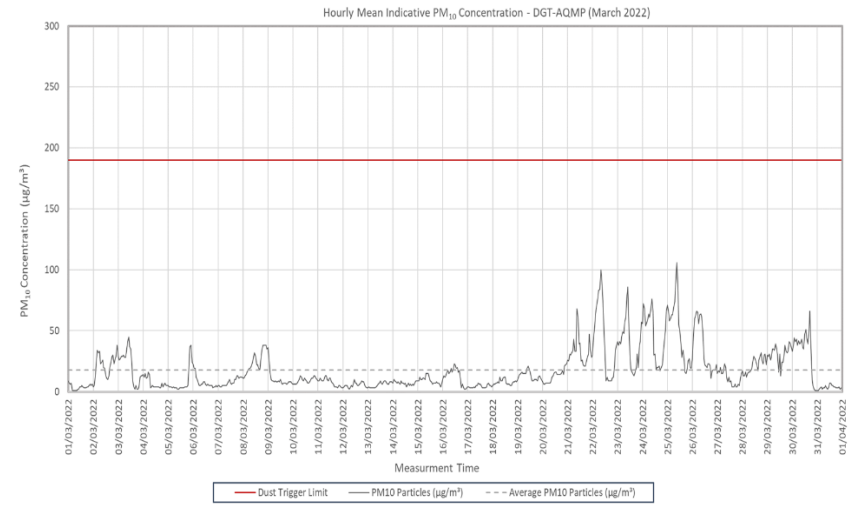




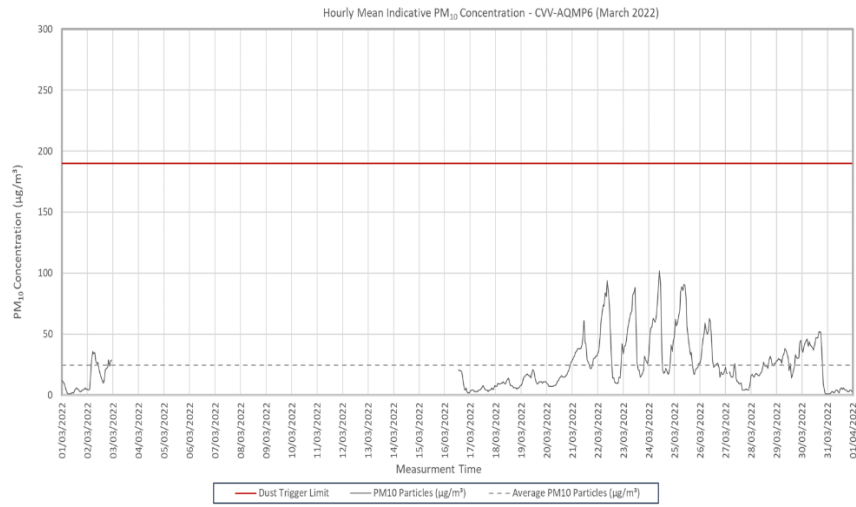
CVV-AQMP4



DGT-AQMP



CVV-AQMP6





## 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>
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	39	25											32
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	60	47											54
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	51	Tube Missing											51
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	53	29											41
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	46	30											38
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40											45
HS2-000020BPN	Lamp post on B467	506767, 186224	47	34											41

<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											51
HS2-000020BQN	Lamp post on Park Road	506176, 185444	53	36											44
HS2-000020BQP	Sign post on Long Lane	507614, 184663	50	36											43
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	42	32											37