

Air Quality and Dust Monitoring Monthly Report – January 2021

London Borough of Hillingdon



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 Hillingdon (LBH) during December 2020 and January 2021 respectively.
- 1.1.2 Figure 1 to Figure 5 in Appendix A indicate the current worksites, together with dust and 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, 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 which commenced within the LBH in May 2018 and are expected to be completed in early 2021. The next phase of construction 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 5, include:
- Gatemead Embankment, Breakspear Road South and River Pinn Underbridge haul road creation;
 - Utility diversions, haul road creation and groundworks at Copthall North and Copthall South;
 - West Ruislip Portal haul road creation, piling and groundworks;
 - South Ruislip mobilisation, ground works;
 - Northern Sustainable Placement Area (NSPA) site mobilisation, set- up and archaeological dig; and
 - Southern Sustainable Placement Area (SSPA) site mobilisation, set- up and archaeological dig.
- 1.1.5 The Colne Valley Viaduct (CVV) and Dews Lane worksites also fall within the administrative boundary of LBH. The Dews Lane phase of works commenced in July 2017 and is expected to be completed by the end of April 2021. The current phase of works at the CVV South Moorhall Road worksite commenced within LBH in September 2020 and is ongoing. Activities for each worksite within December 2020, as presented in Appendix A, Figure 1 to Figure 5, include:
- Dews Lane site:
- Utilities: Sections H1, H2 and H3;
 - HOAC Compound: Earthworks, drainage, road, hardstanding and civil works;
 - INNS-GUC to Harvil Road: Removal works;
 - Dews Lane Compound: Compound operation;
 - Dews Lane Demolition;

- Dews Lane Earthworks: Soil strip and stockpile management; and
- Drainage Works.

CVV South Moorhall Road worksite:

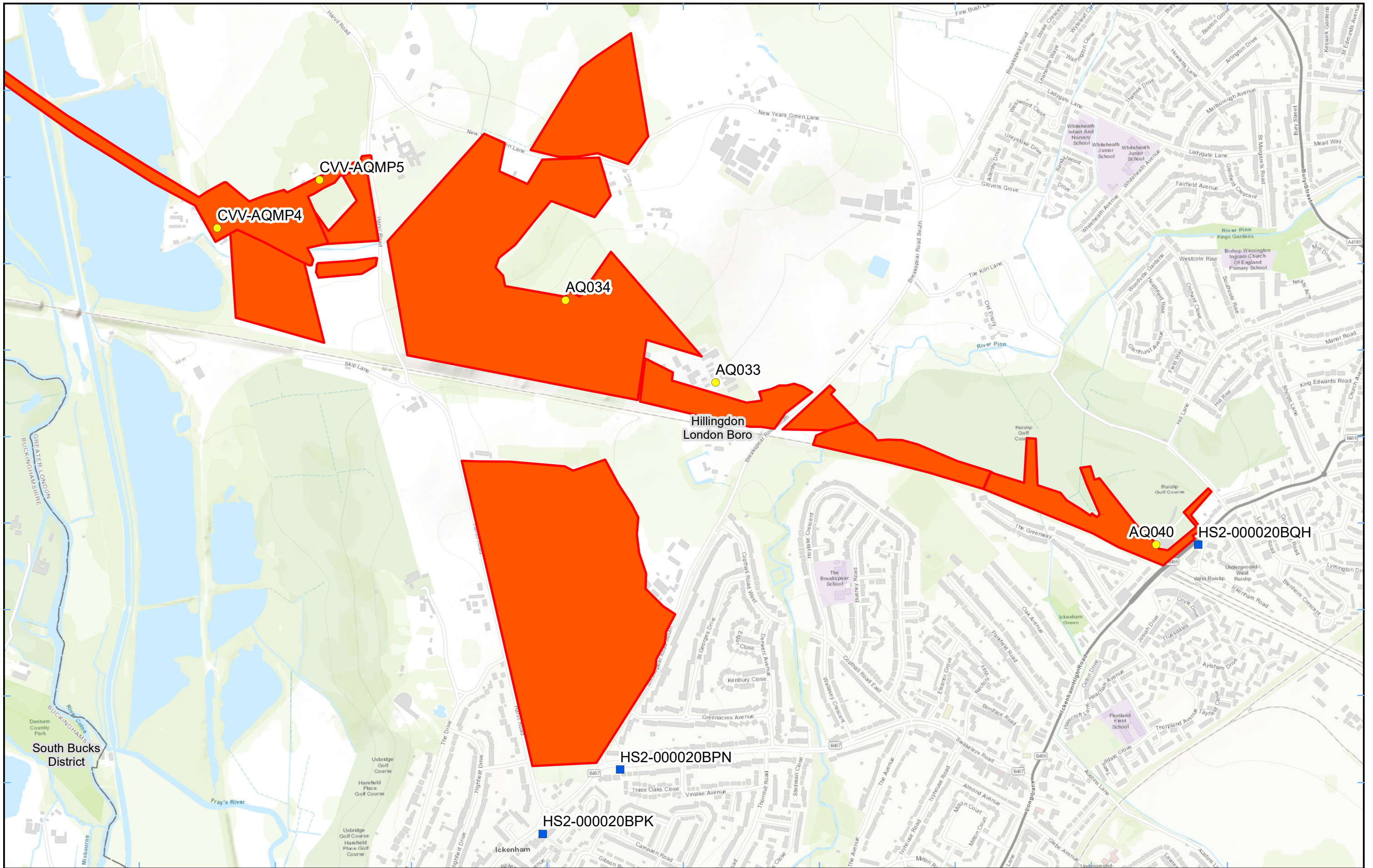
- Utilities: Sections H5, and H9;
- North and South Moorhall Road Compounds: Earthworks, drainage, road, hardstanding and civil works;
- North Moorhall Road Hall Route: Preparation works, civil works and earthworks and drainage;
- INNS- River Colne to GUC: Removal works;
- Moorhall Road Stockpile: Stockpile management;
- Haul Route: Preparation works, earthworks and drainage; and
- Ground investigation and overwater ground investigation works.

- 1.1.6 Six (6) dust monitors are installed around worksites, where demolition, earthworks, construction and trackout activities are underway. The sites returned a low to medium dust risk rating.
- 1.1.7 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 6. 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.
- 1.1.8 In this reporting period, the dust monitors related to the CVV South Moorhall Road worksite have been replaced. Dust monitor CVV-AQMP3 was originally monitor CVV-AQMP1 and has been relocated from opposite the Moorhall Road South compound, to within the compound as the works there were completed. CVV-AQMP4 and CVV-AQMP5 are in the same location but have had their ID's updated from HOAC-AQMP1 and DEWS-AQMP2 respectively.
- 1.1.9 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.
- 1.1.10 There were multiple dust trigger alerts recorded during the monitoring period (January 2021). However, following investigations it was noted that these alerts were not related to HS2 site activities, as no dusty activities were being undertaken at the time. Trigger alerts are presented in Appendix B, Table 2. All other results were in line with expected ranges.
- 1.1.11 Data capture for monitors AQ034, CVV-AQMP3, CVV-AQMP4 and CVV-AQMP5 was below 90% for the month of January 2021. This was due to loss of power during this reporting period. Additionally, CVV-AQMP5, CVV-AQMP4 and CVV-AQMP3 were only installed on the 5th, 6th and 9th of January respectively, so data is not available prior to these dates.

- 1.1.12 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) 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.
- 1.1.13 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.
- 1.1.14 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2020 running mean.
- 1.1.15 There were no (0) complaints received, relating to air quality, during this reporting period (January 2021).

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 5: 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

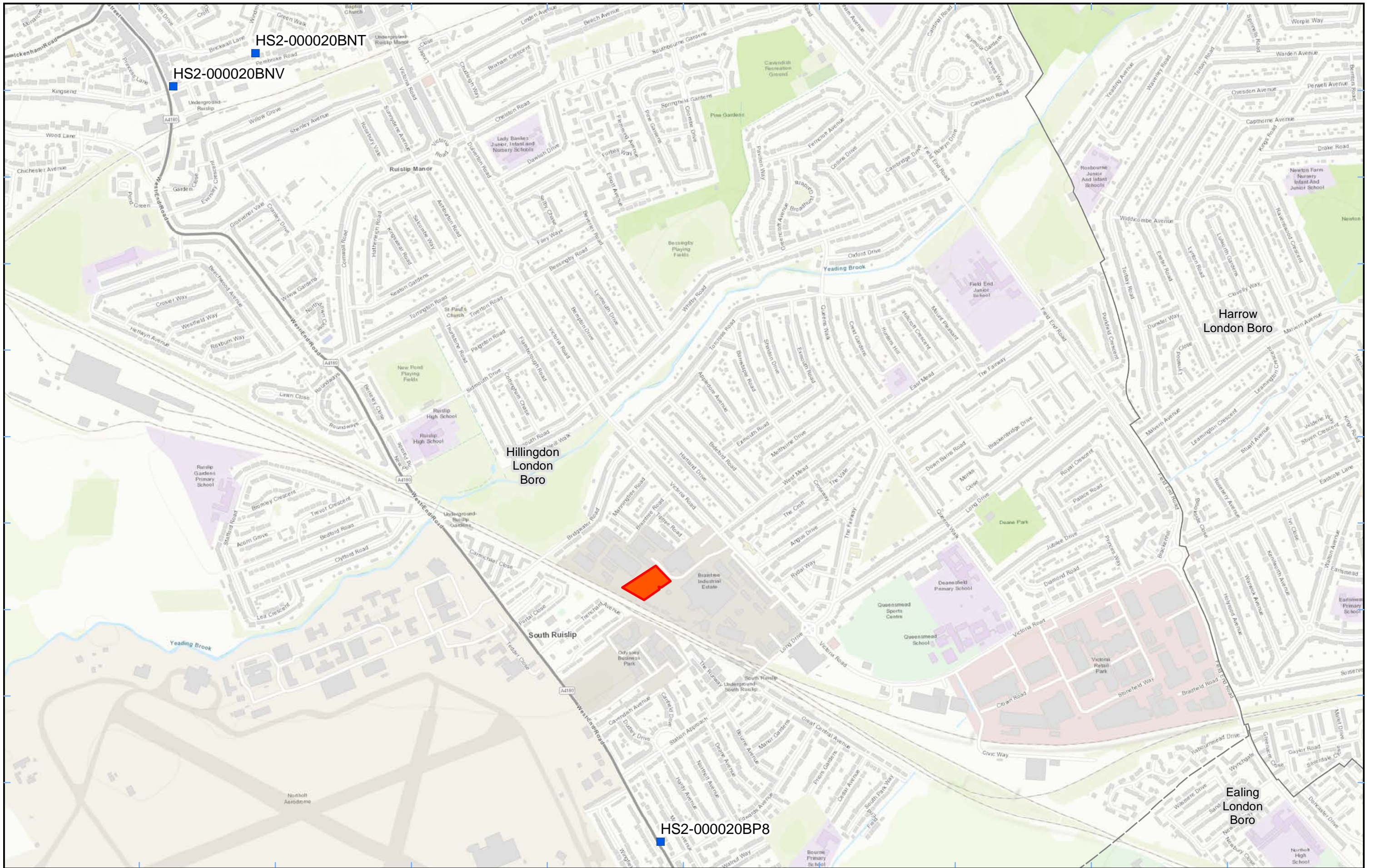
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 Metres

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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

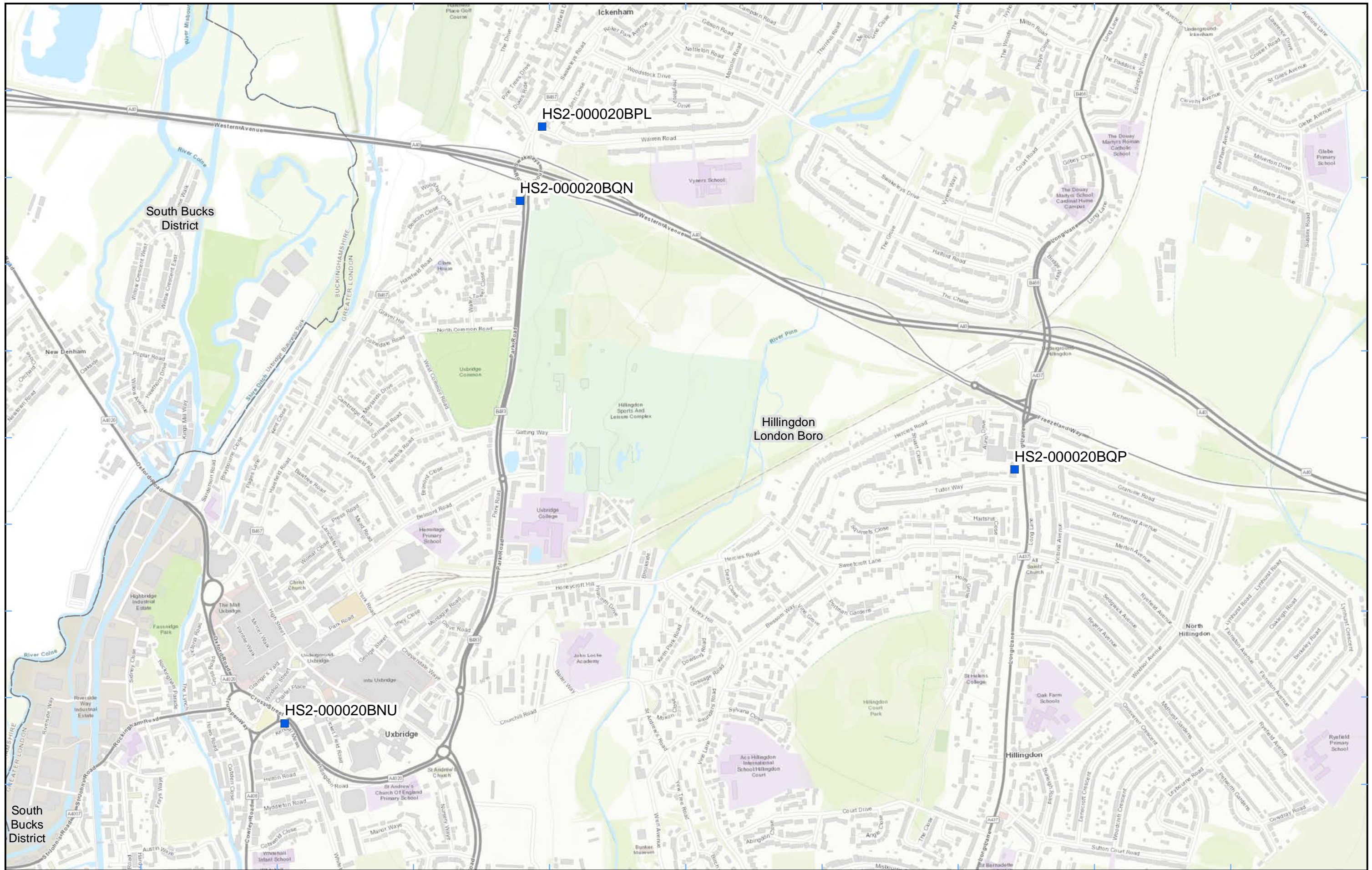
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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
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Legend
 Diffusion Tube
 District Borough Unitary Boundaries

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

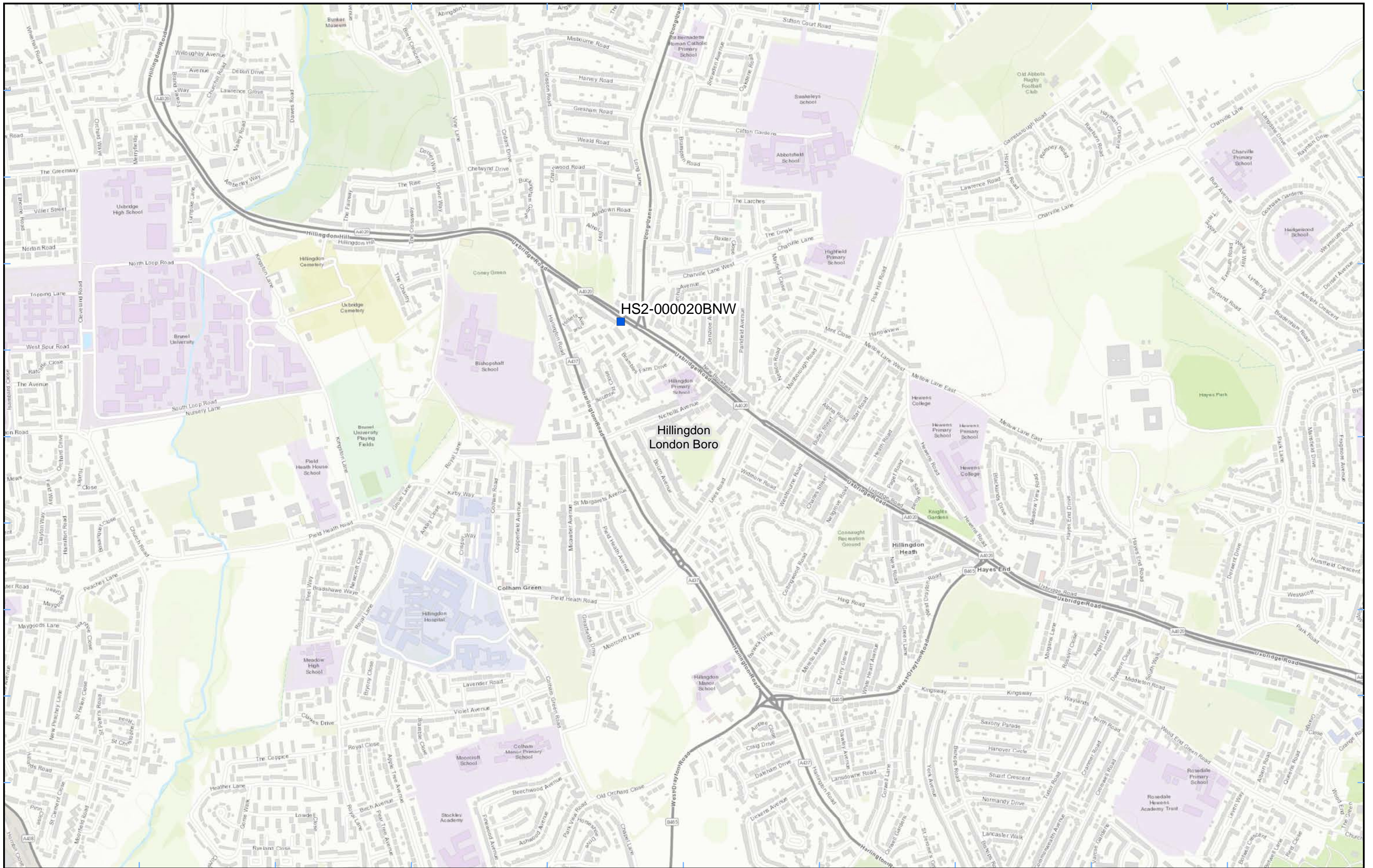
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- Legend**
- Diffusion Tube
 - District Borough Unitary Boundaries


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



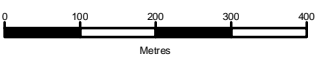
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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and January 2021 Results

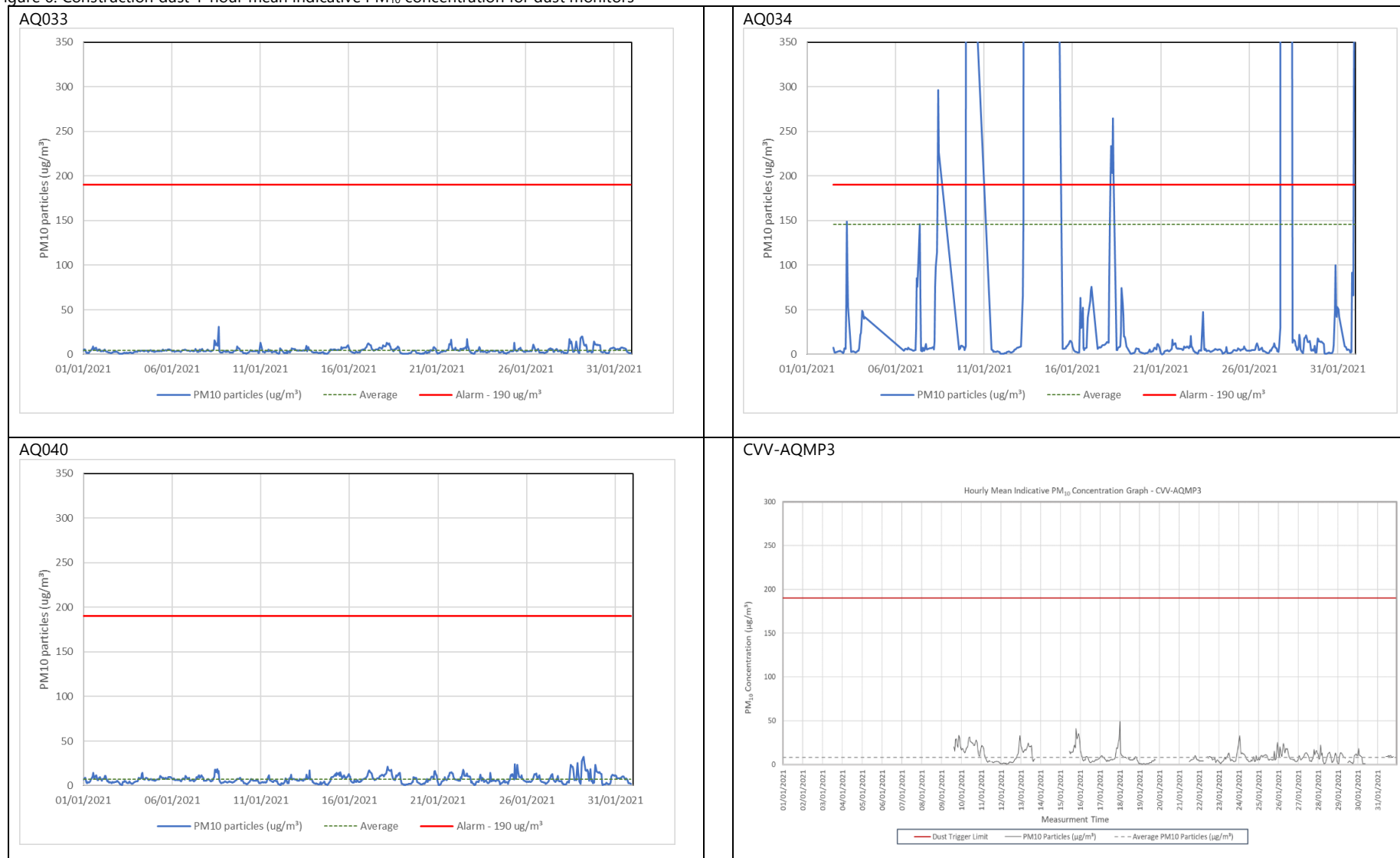
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspears Road South	M	Yes	No	4.5	0.4	31.1	0	99.2
AQ034	506608, 187592	Copthall Cutting	L	Yes	No	145.5	0.3	6,527.9 ¹	25	69.8
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	No	7.2	0.5	32.1	0	100.0
CVV-AQMP3	504690, 188421	On the eastern boundary along south side of Moorhall Road	M	Yes	Yes	8.1	0.1	49.0	0	56.6
CVV-AQMP4	505594, 187801	On the western boundary of HOAC at Dews Lane	M	Yes	Yes	9.4	0.5	57.8	0	81.0
CVV-AQMP5	505892, 187942	Adjacent to Dew's Farm Cottages on Dews Lane.	M	Yes	Yes	9.4	0.6	57.0	0	84.0

¹ Please see Table for a summary of the trigger alerts received. Following an investigations, it was noted that these exceedances alerts were not related to HS2 site activities

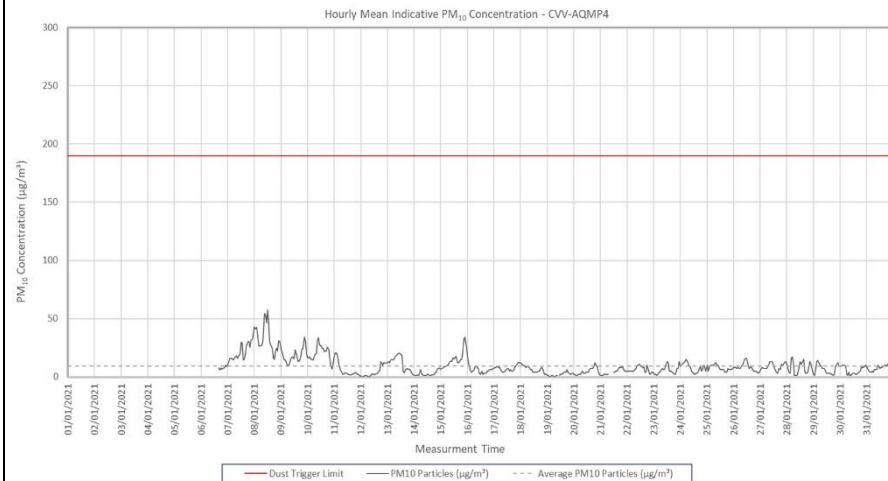
Table 2: Summary of exceedances of trigger level in January 2021

Monitoring site ID	Period exceeding trigger level and concentration recorded	Investigation	Outcomes / Resolution / Remedial measured implemented
AQ034	08/01/2021 09:00-10:00 296.1 µg/m ³ 08/01/2021 10:00-11:00 2,267 µg/m ³ 09/01/2021 23:00-00:00 2,138.2 µg/m ³ 10/01/2021 00:00-01:00 5,101.3 µg/m ³ 10/01/2021 01:00-02:00 1,534.2 µg/m ³ 10/01/2021 02:00-03:00 1,611.1 µg/m ³ 10/01/2021 03:00-04:00 3,343.7 µg/m ³ 10/01/2021 04:00-05:00 2,709.5 µg/m ³ 10/01/2021 05:00-06:00 526.7 µg/m ³ 13/01/2021 06:00-07:00 2,612.2 µg/m ³ 13/01/2021 07:00-08:00 5,944.5 µg/m ³ 13/01/2021 08:00-09:00 4,168.1 µg/m ³ 18/01/2021 03:00-04:00 195.8 µg/m ³ 18/01/2021 04:00-05:00 233.6 µg/m ³ 18/01/2021 05:00-06:00 203.6 µg/m ³ 18/01/2021 06:00-07:00 264.6 µg/m ³ 18/01/2021 18:00-19:00 199.6 µg/m ³ 27/01/2021 18:00-19:00 5,125.1 µg/m ³ 27/01/2021 19:00-20:00 6,527.9 µg/m ³ 27/01/2021 20:00-21:00 6,523.4 µg/m ³ 27/01/2021 21:00-22:00 6,324.1 µg/m ³ 27/01/2021 22:00-23:00 6,527.9 µg/m ³ 27/01/2021 23:00-00:00 6,167.8 µg/m ³ 31/01/2021 21:00-22:00 301.2 µg/m ³ 31/01/2021 22:00-23:00 459.2 µg/m ³	<p>Due to the large number of triggers being associated with power losses (from the renewable energy power supply - solar panels and wind turbine) to the monitor and many being during the early hours of the morning and during inclement weather conditions, it is considered that the triggers were not associated with high dust levels on site.</p> <p>A lack of power to both the internal pump and heater meant a steady, dry air flow drawn through the monitor was not possible. Moisture within the monitor inlet and then subsequent pump failure which can cause false readings is considered to be the most likely cause of the trigger alerts.</p>	<p>Follow up investigations with the suppliers confirmed the assumptions that these alerts were false readings.</p> <p>An additional alternative supplementary power supply is being considered during winter months if issue persists.</p>

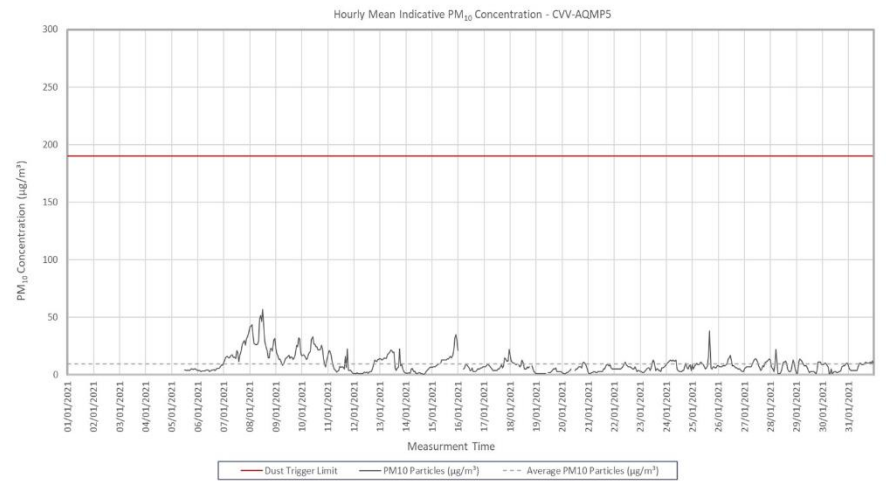
Figure 6: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors



CVV-AQMP4



CVV-AQMP5



Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2020 (µg/m³)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar ²	Apr ²	May ²	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ³
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	35	26	No data			19	14	18	22	24	34	28	24
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	49	46	No data			33	31	33	37	37	51	39	40
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	45	33	No data			32	26	30	32	31	49	44	36
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	43	32	No data			35	22	36	36	35	53	45	37
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40	34	No data			27	28	29	35	31	42	28	33
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40	No data			28	28	30	33	35	49	38	37
HS2-000020BPN	Lamp post on B467	506767, 186224	41	30	No data			24	21	Tube missing	30	29	38	34	31

² Note: Due to the Covid-19 pandemic and government lockdown it was not possible to conduct diffusion tube air quality monitoring in March, April and May 2020.

³ 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 ²	Apr ²	May ²	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ³
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	44	37	No data			27	24	29	39	30	44	41	35
HS2-000020BQN	Lamp post on Park Road	506176, 185444	47	34	No data			34	26	35	39	36	Tube missing	47	37
HS2-000020BQP	Sign post on Long Lane	507614, 184663	45	33	No data			30	24	34	38	32	48	41	36
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39	32	No data			29	22	28	31	22	44	37	32