

Air Quality and Dust Monitoring Monthly Report – June 2021 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 May and June 2021 respectively.
- 1.1.2 Figure 1 to Figure 5 in Appendix A present 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 works commenced within the LBH 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 Embankment, Breakspear Road South and River Pinn Underbridge groundworks and materials management;
 - Groundworks, piling and materials management at Copthall North and South;
 - West Ruislip Portal piling and groundworks and materials management;
 - South Ruislip ground works, piling operations and materials management;
 - Northern Sustainable Placement Area (NSPA) site mobilisation, set- up and groundworks; and
 - Southern Sustainable Placement Area (SSPA) site mobilisation and set- up.
- 1.1.5 The Colne Valley Viaduct (CVV), Dews Lane and CVV Moorhall Road worksites fall within the administrative boundary of the LBH. The Dews Lane phase of works commenced in July 2017 and are ongoing. The current phase of works at the CVV Moorhall Road worksites commenced within LBH in September 2020 and is currently ongoing. Activities for each worksite within June 2021, as presented in Appendix A, Figure 1 to Figure 5, include:
- Dews Lane site:
- Jetty piling: piling plant, support plant and compound;
 - HOAC Compound: compound operation and de-sanding compound;
 - Cofferdam Sheet Piling: piling plant and support plant;
 - Causeway Piling: sheet pile installation 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 Route: civil works, fishing works, fencing, earthworks and drainage; and

- Ground Investigation Works: GI works.

CVW Moorhall Road:

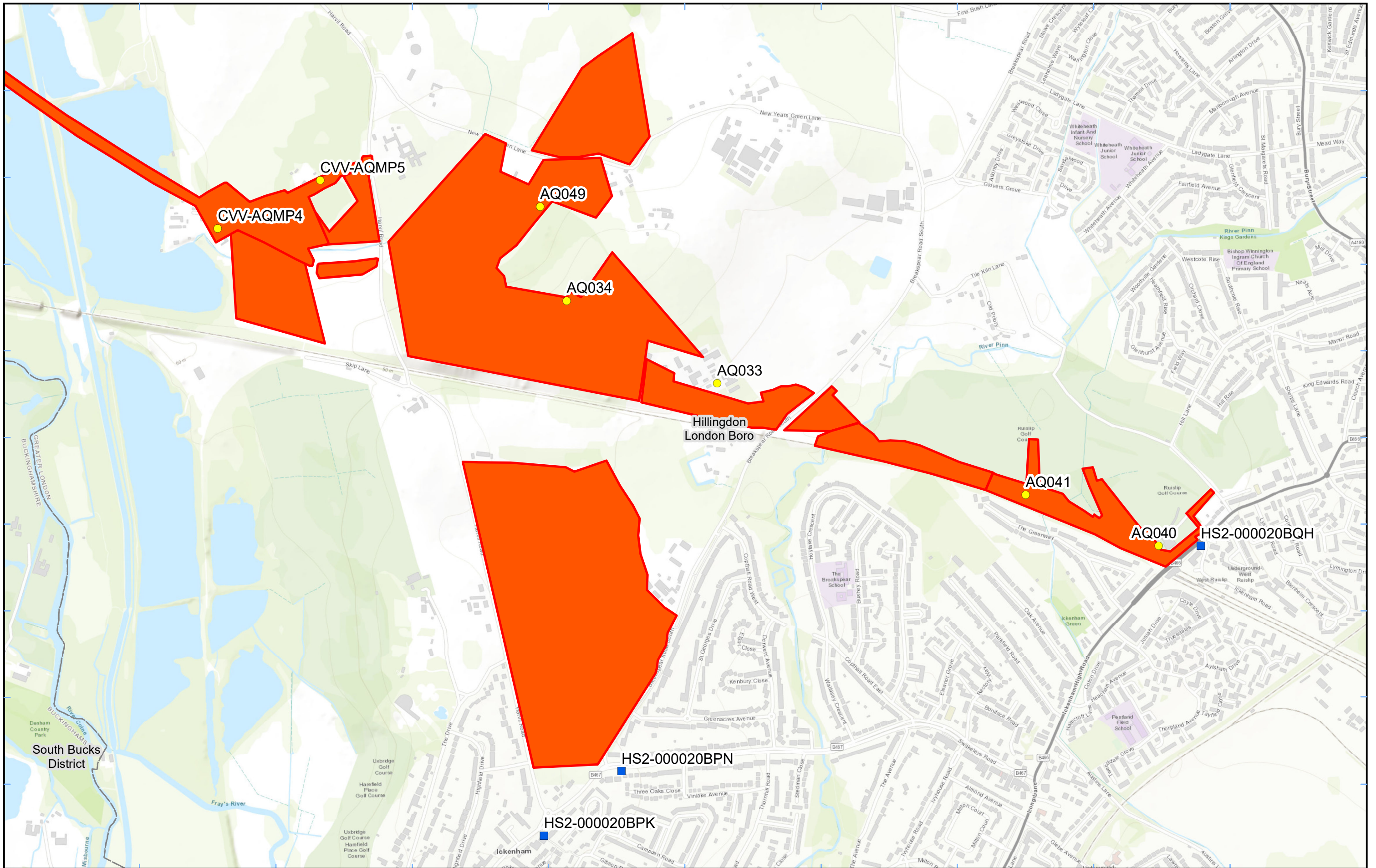
- Utilities: H7;
- Jetty piling: piling plant, support plant and compound;
- INNS-GUC to Havril road: removal;
- South Moorhall road compound: compound operation and de-sanding compound;
- North Moorhall road compound: compound operation;
- Haul Route: civil works and earthworks and drainage;
- Moorhall Road Junction crossing Tarmac;
- Ground Investigation Works: GI works;
- Causeway Piling: sheet pile installation and support plant;
- Cofferdam Sheet Piling: piling plant and support plant; and
- 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, grout curtain around viaduct pile groups maintenance plant.

- 1.1.6 Nine (9) dust monitors are installed around worksites, where demolition, earthworks, construction and trackout activities are underway. The sites returned a low to high risk 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 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.
- 1.1.9 There were seven (7) dust trigger alert recorded during the monitoring period (June 2021). Triggers are presented in Appendix B, Table 2. All other results were in line with the expected ranges.
- 1.1.10 Data capture for monitors AQ049 and CVV-AQMP3, was below 90% for the month of June 2021. Data missing at monitor AQ049 was due to an ongoing fault with the power supply (hydrogen generator). Missing data at CVV-AQMP3 was due to the monitor being temporarily moved to allow for the contractor's construction works. Any sporadic loss of data can be attributed to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using solar/wind power. All concerned issues have been or are in the process of being resolved.

- 1.1.11 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.
- 1.1.12 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.
- 1.1.13 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2021 running mean.
- 1.1.14 There were no (0) complaints received, relating to air quality or dust, during this reporting period (June 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
 Worksite and Monitoring Locations
 In LBH (Sheet 1)
 London Borough of Hillingdon

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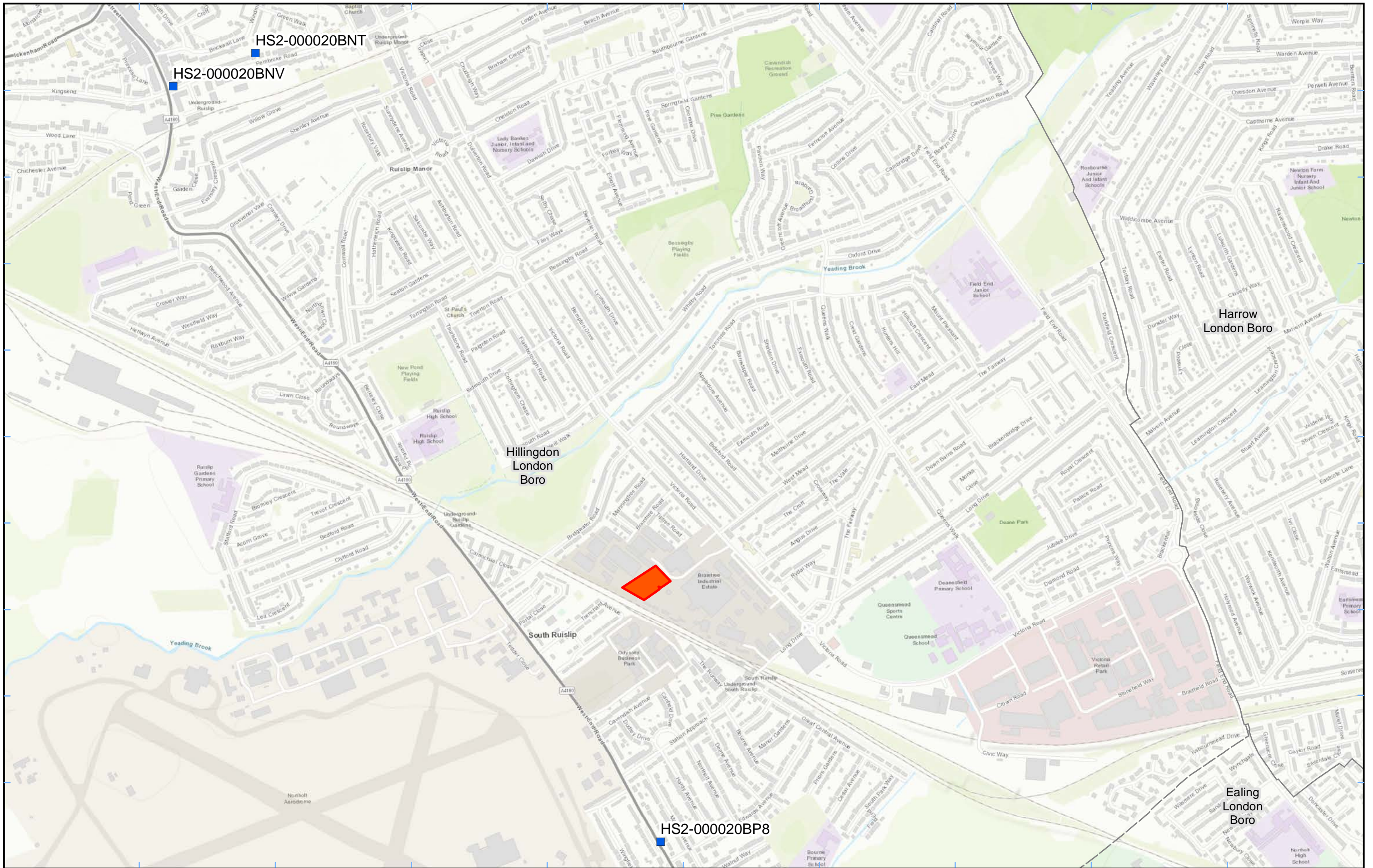
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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

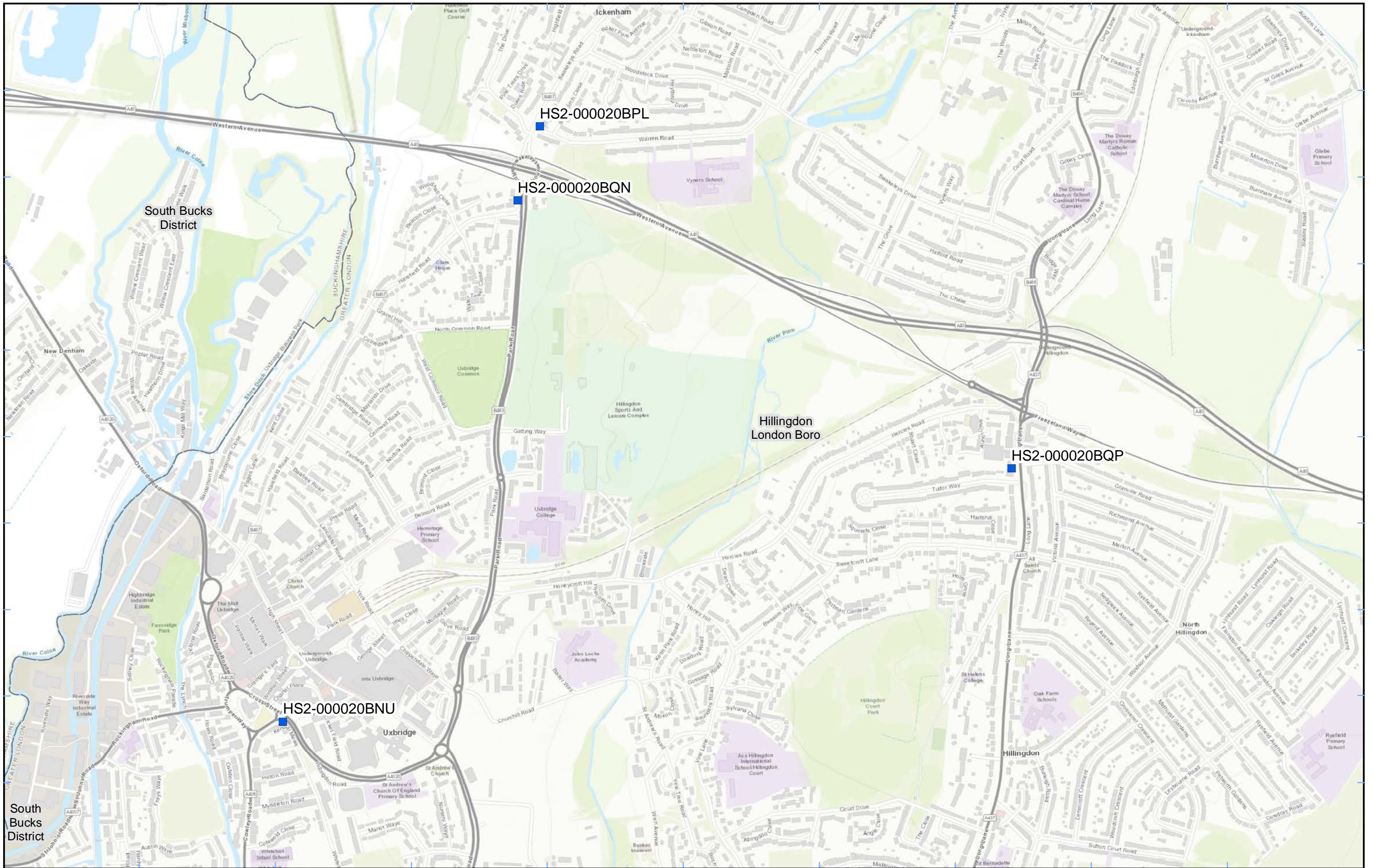
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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
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Legend
 ■ Diffusion Tube
 □ District Borough Unitary Boundaries

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

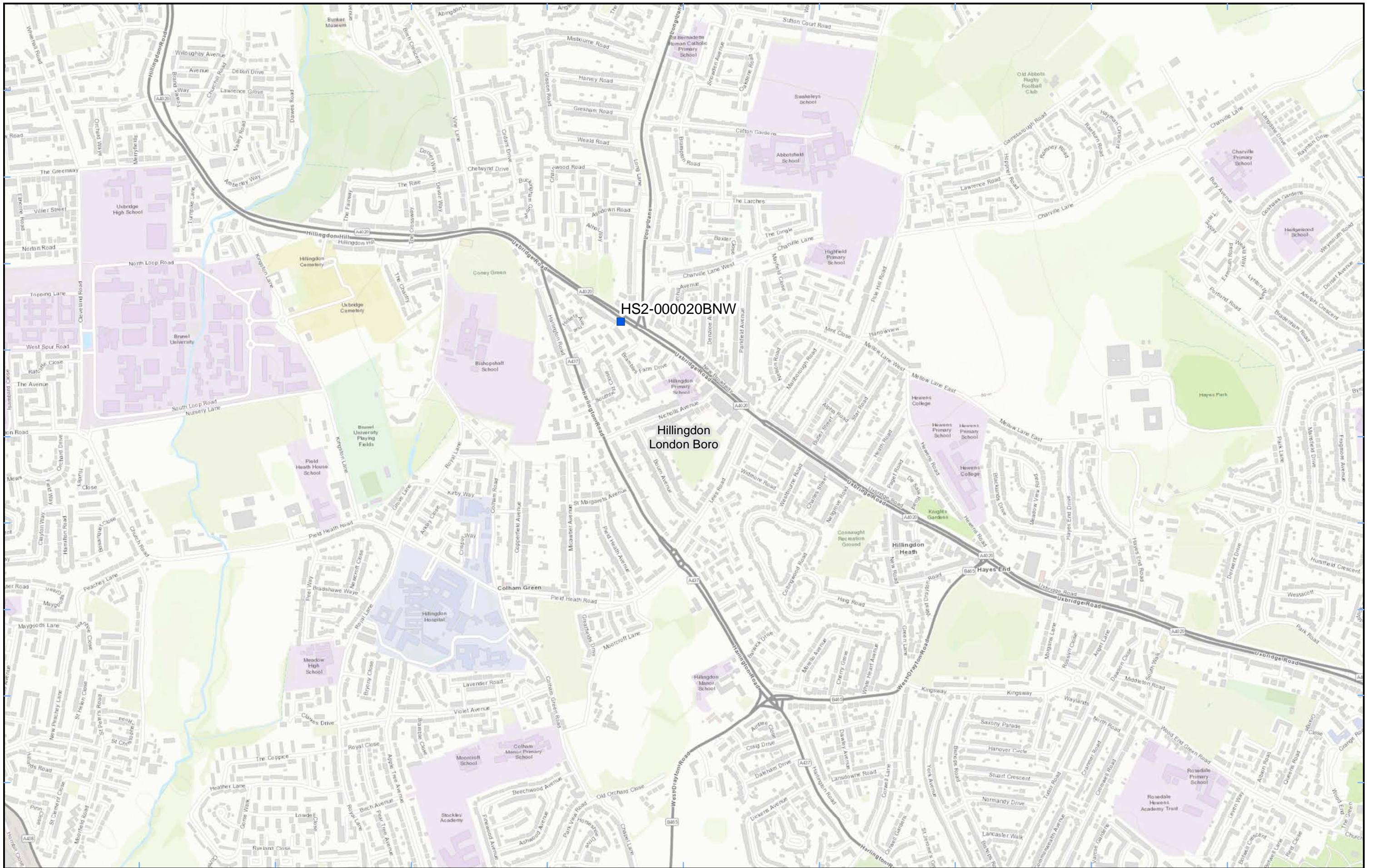
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Hillingdon
London Boro

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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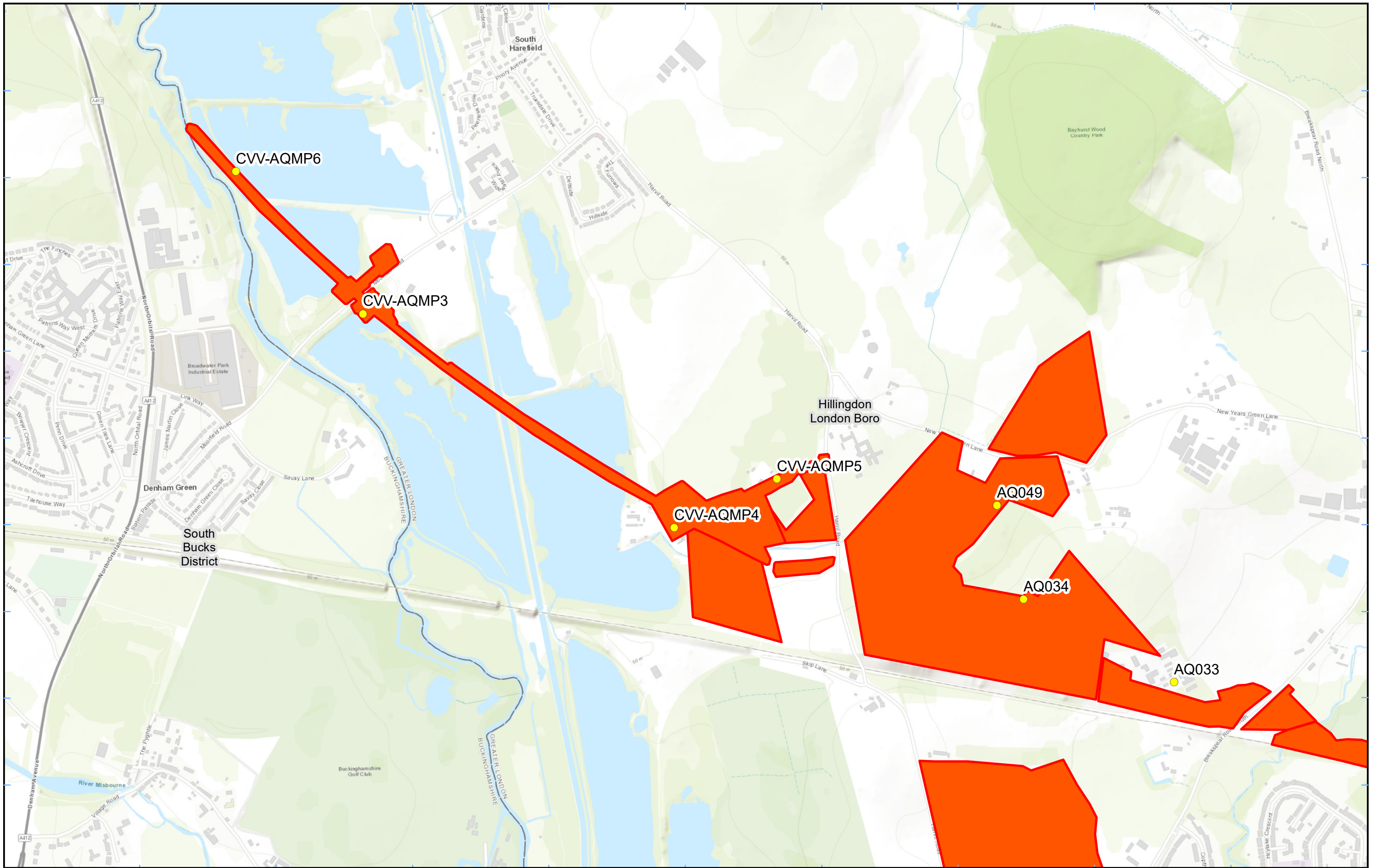
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Legend
 ● Dust Monitor
 □ District Borough Unitary Boundaries
 ■ Worksite

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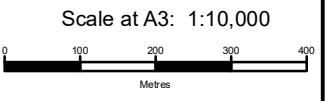
Map Number
 Worksite and Monitoring Locations
 In LBH (Sheet 5)
 London Borough of Hillingdon



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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and June 2021 Results

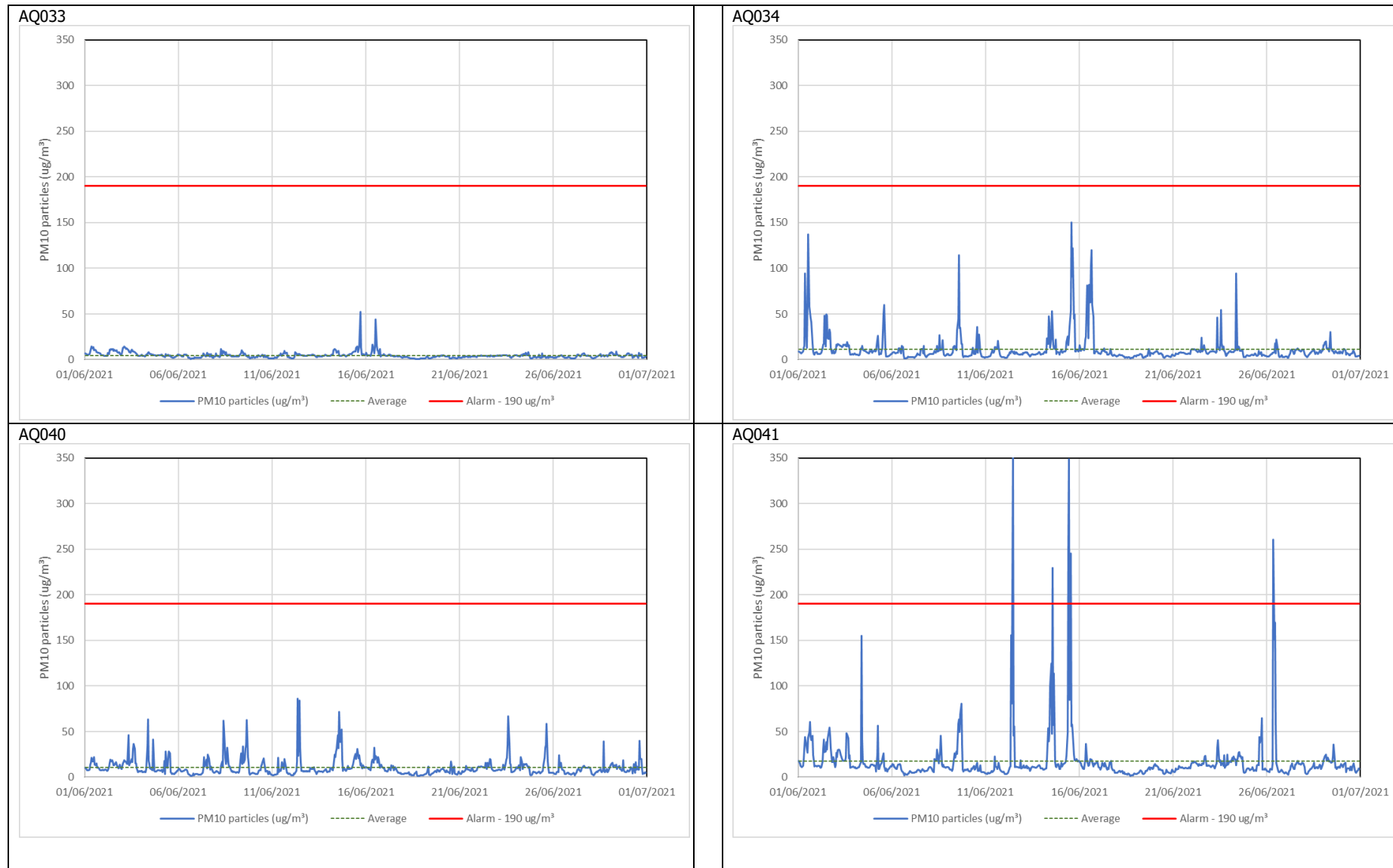
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	L	Yes	N	4.7	0.8	52.6	0	100.0
AQ034	506608, 187592	Copthall Cutting	M	Yes	N	11.4	1.4	150.4	0	100.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	10.5	1.3	86.0	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	17.6	1.7	353.8	6	100.0
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	0.0	0	0	0	0.0
AQ050	506531, 187865	Copthall South Compound	M	Yes	N	13.1	1.3	335.6	1	100.0
CVV-AQMP3	504743, 188459	On the eastern boundary along south side of Moorhall Road	M	Yes	Yes	7.8	1.0	32.0	0	69.3
CVV-AQMP4	505589, 187793	On the western boundary of HOAC at Dews Lane	M	Yes	Yes	7.0	1.0	34.0	0	99.9
DGT-AQMP	506124, 188025	At the Dog Trust on Harvil Road.	M	No	Yes	-	-	-	-	-

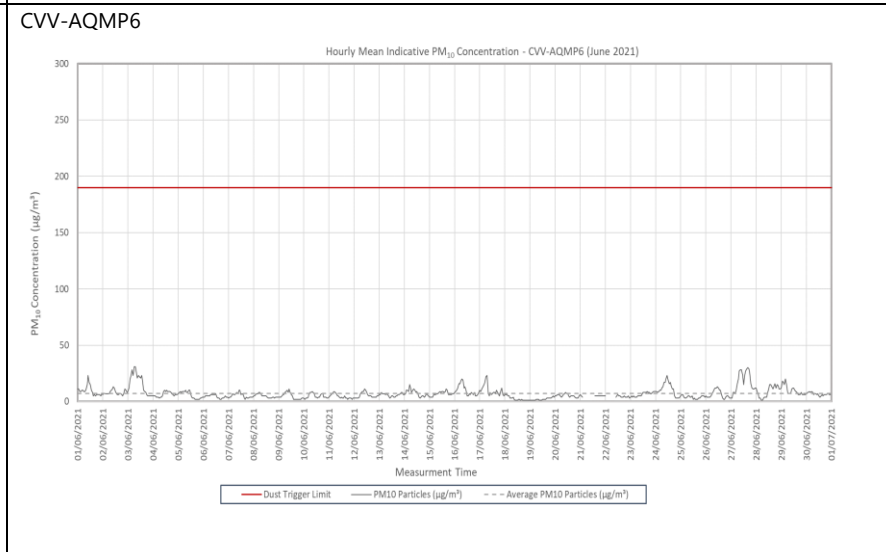
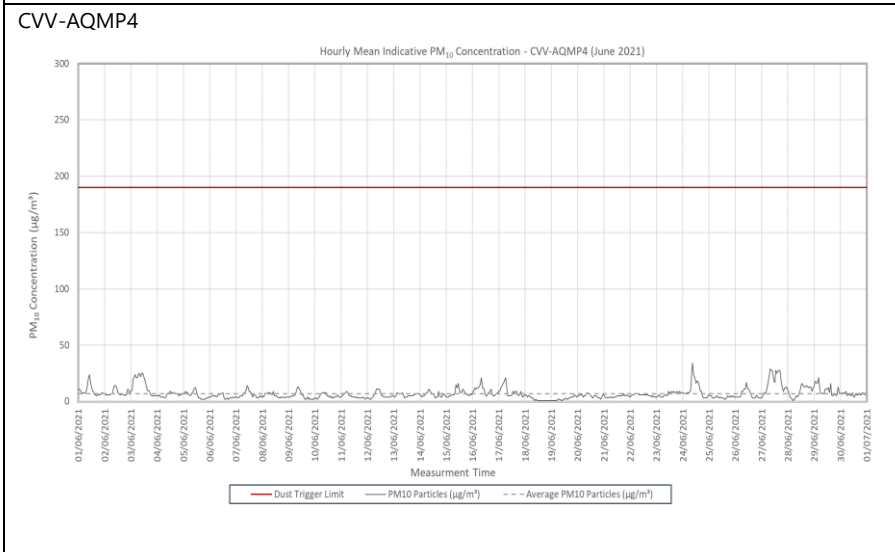
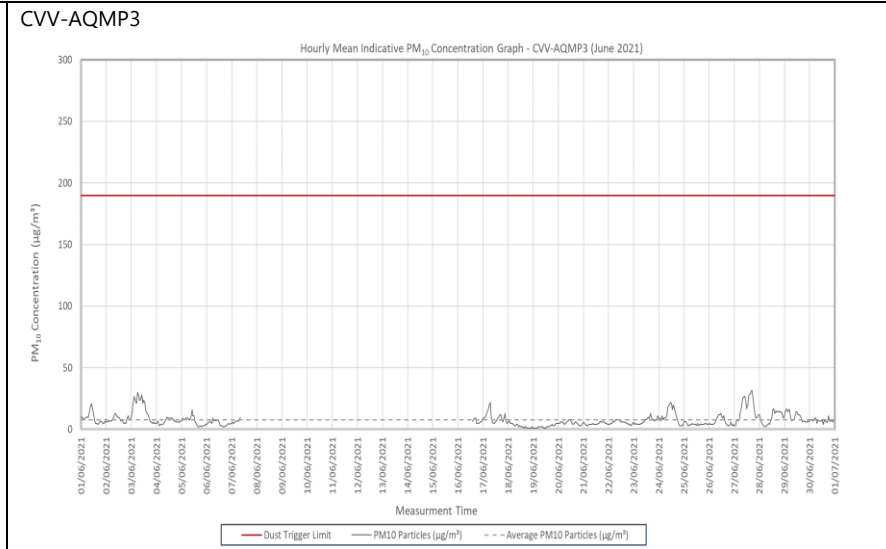
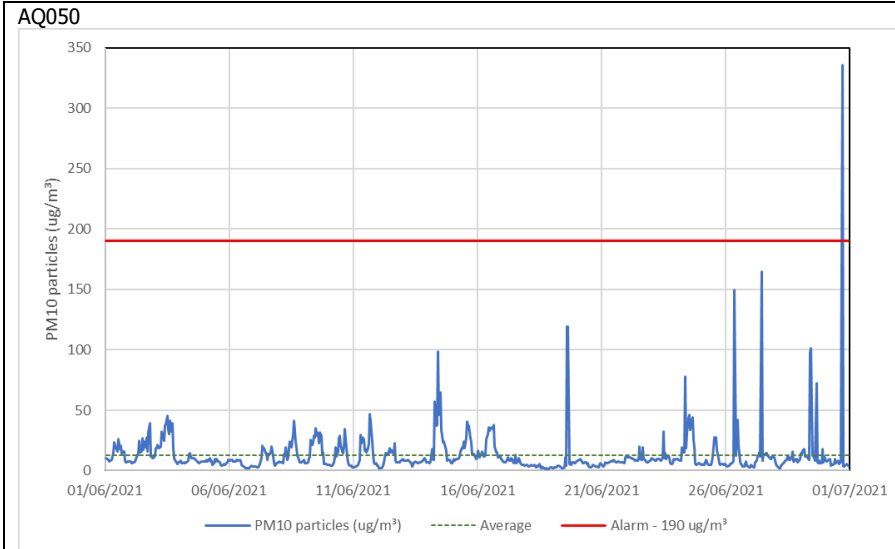
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
CVV-AQMP6	504321, 188835	Korda Lake Compound, along haul route north of Moorhall road.	M	Yes	Yes	7.1	1.0	31.0	0	97.2

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

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
<p>AQ041 West Ruislip Portal</p>	<p>12/06/2021 10:01 – 11:00; 353.8 µg/m³ 14/06/2021 12:01-13:00; 229.3 µg/m³ 15/06/2021 09:01 – 13:00 (x3 triggers); 253.3 µg/m³, 348.5 µg/m³, 245.1 µg/m³ 26/06/2021 09:01 – 10:00; 260.3 µg/m³</p>	<p>AQ041 is currently located at the former western site boundary with the railway (opposite The Greenway), but due to the extension of the western boundary over the previous few months the monitor is now well within the site itself rather than at the site perimeter.</p> <p>Saturday 12th At the time of the trigger alert from dust monitor (AQ041), there were no specific activities occurring in the vicinity of the monitor and it is considered that the trigger was associated with nearby machinery movements where the ground had dried out.</p> <p>Monday 14th At the time of the trigger alert two excavators had been moved to the area adjacent to the monitor and were operational managing the nearby stockpile, ready for loading of wagons.</p> <p>Tuesday 15th On this occasion the vehicle and machinery movements and loading of wagons was occurring in the area directly adjacent to the monitor despite a dust canon operational at the location which was observed to be effective.</p> <p>Saturday 26th Again, vehicle and machinery movements and loading of wagons was again occurring in the area near to the monitor (after it had been previously been moved) despite a dust canon operational at the location which again was observed to be effective.</p>	<p>Dust suppression was deployed to the location before and during the operations and visually observed to be effective. There are five dust canons deployed to this south eastern section of the site and moved around according to the activities taking place. In addition, the on-site bowser and road sweeper maintain circuits of internal haul routes throughout each day.</p> <p>The dust monitor is currently on a stand within the works area and in close proximity of these site operations (even unavoidable machinery and materials movements) which means it's within metres of current site activities in the area.</p> <p>The monitor was moved after the 15th to the site boundary.</p> <p>The site team will continue to remain vigilant of the need to maintain dust suppression in all areas of the site, including previously undisturbed locations, and consideration will be given to the deployment of larger dust canons if deemed necessary during the continued dry weather.</p> <p>Dust monitor AQ040 located nearer the south eastern boundary of the site, near to the golf course club house, showed no similar elevated dust levels.</p>
<p>AQ050 Cophthall South Compound</p>	<p>30/06/2021 16:01 - 17:00</p>	<p>AQ050 is currently located near the Cophthall South compound near Harvil Road.</p> <p>At the time of the trigger there were no works or vehicle movements associated with the HS2 site and the weather was wet.</p> <p>A number of subsequent erratic data spikes and trigger alerts during the early hours of the morning and wet weather in July (reported in subsequent reports) indicate the monitor is potentially being affected by high humidity and moisture due to a faulty internal heater.</p>	<p>The monitor is being serviced and calibrated in early July.</p>

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





Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2021 (µg/m³)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	30	30	24	23	20								25
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	45	46	44	38	45								44
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	Tube Missing	40	37	36	36								37
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	40	48	39	46	43								43
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40	40	38	36	31								37
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	Tube Missing	39	37	30	34								35
HS2-000020BPN	Lamp post on B467	506767, 186224	36	38	32	32	32								34
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	Tube Missing	Tube Missing	42	42	41								42

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
HS2-000020BQN	Lamp post on Park Road	506176, 185444	40	52	31	42	47								43
HS2-000020BQP	Sign post on Long Lane	507614, 184663	38	39	36	41	39								39
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39	40	33	33	32								36