

Air Quality and Dust Monitoring Monthly Report – May 2022 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 April 2022 and May 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, 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) materials movements and groundworks;
 - 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;
- INNS-GUC to Harvil Road: removal works;
- Ground Investigation Works: GI works;
- Pier Construction: yard supporting activities, 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;
- Maintenance of the Haul Road: maintenance of the haul road ch 25.900 to 29.500;

- Satellite Welfares;
- Generator Farms;
- North Abutment: completion work at bearing shelf / parapet and yard supporting activities;
- South Abutment: earthworks/stabilisation, driven/CFA piling, pile trimming & pile hat installation and drainage works;
- Core Drilling of Concrete;
- Pile Trimming;
- Grand Union Canal Work: haul road, 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;
- Dewatering at P11;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;
- HOAC car park construction: civilisation works in the NGET area;
- 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
- Utilities-H3.

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;
- INNS-River Colne to GUC: removal;
- Ground Investigation Works: GI works;
- River Colne Realignment;
- Crossings Tarmac: Moorhall Road Junction;
- CFA Pile Caps at P22 & P30: CFA piling, FRC to pile caps and earthworks;
- Pier Construction: arch form deck pier 33 and straight pier P38 – FRC works for pile cap and pier, yard supporting activities, post tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts 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;
- Cofferdam Excavation;
- 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
- Utilities.

1.1.5 Twelve (12) dust monitors are installed around worksites, where works are underway. The 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 PM₁₀ concentrations of 190µg/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.

1.1.8 Dust trigger alerts were recorded during the monitoring period (May 2022) and are reported in Appendix B, Table 2.

1.1.9 Data capture was below 90% for multiple monitors in May 2022 due to power supply issues which have since been resolved.

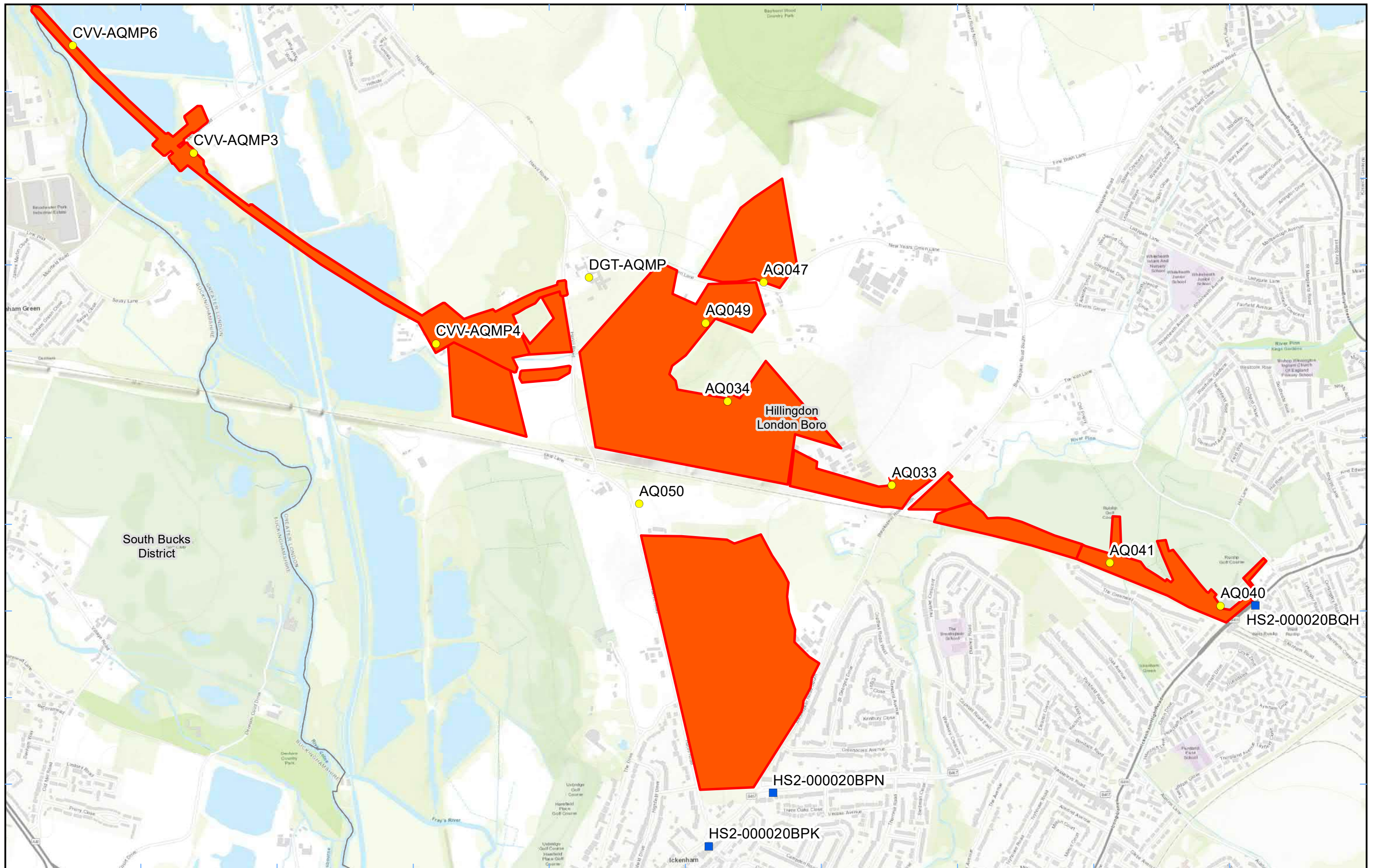
1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects may occur as a result of the scheme.

1.1.11 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.

- 1.1.12 NO₂ 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
 - Dust Monitor
 - District Borough Unitary Boundaries
 - Worksite

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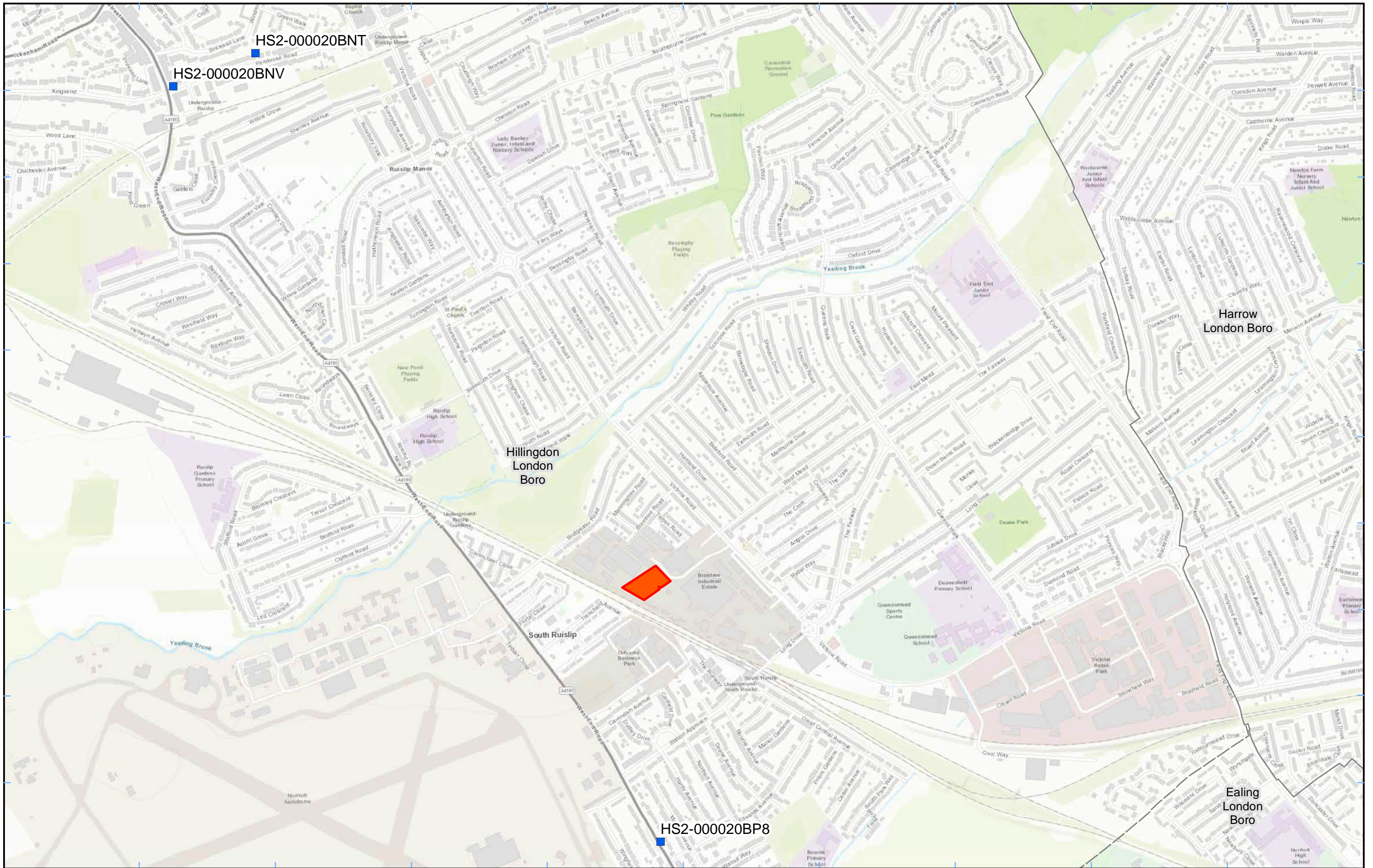
Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 1)**
 London Borough of Hillingdon

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0 120 240 360 480
 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)**
 London Borough of Hillingdon

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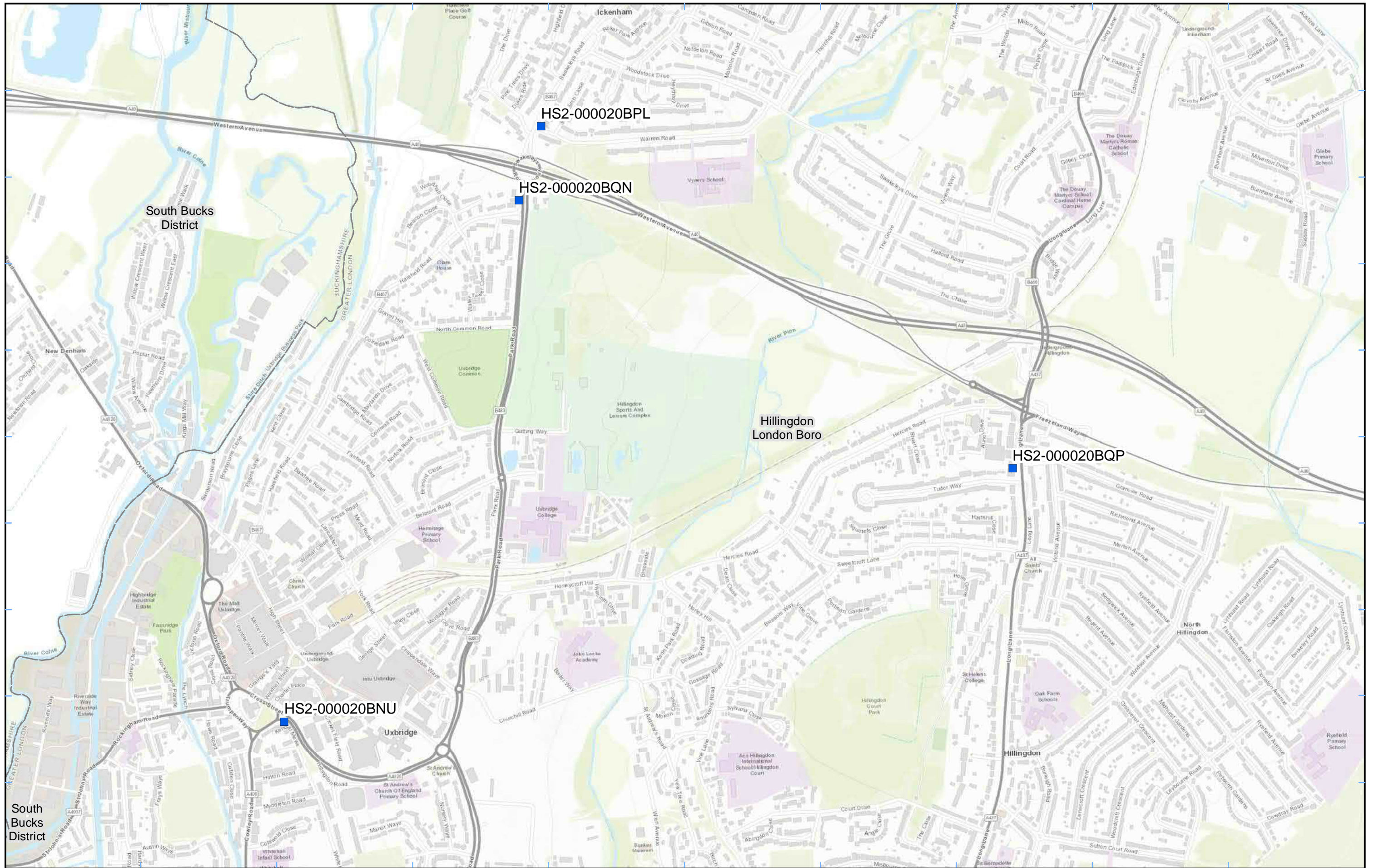
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Scale at A3: 1:10,000

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

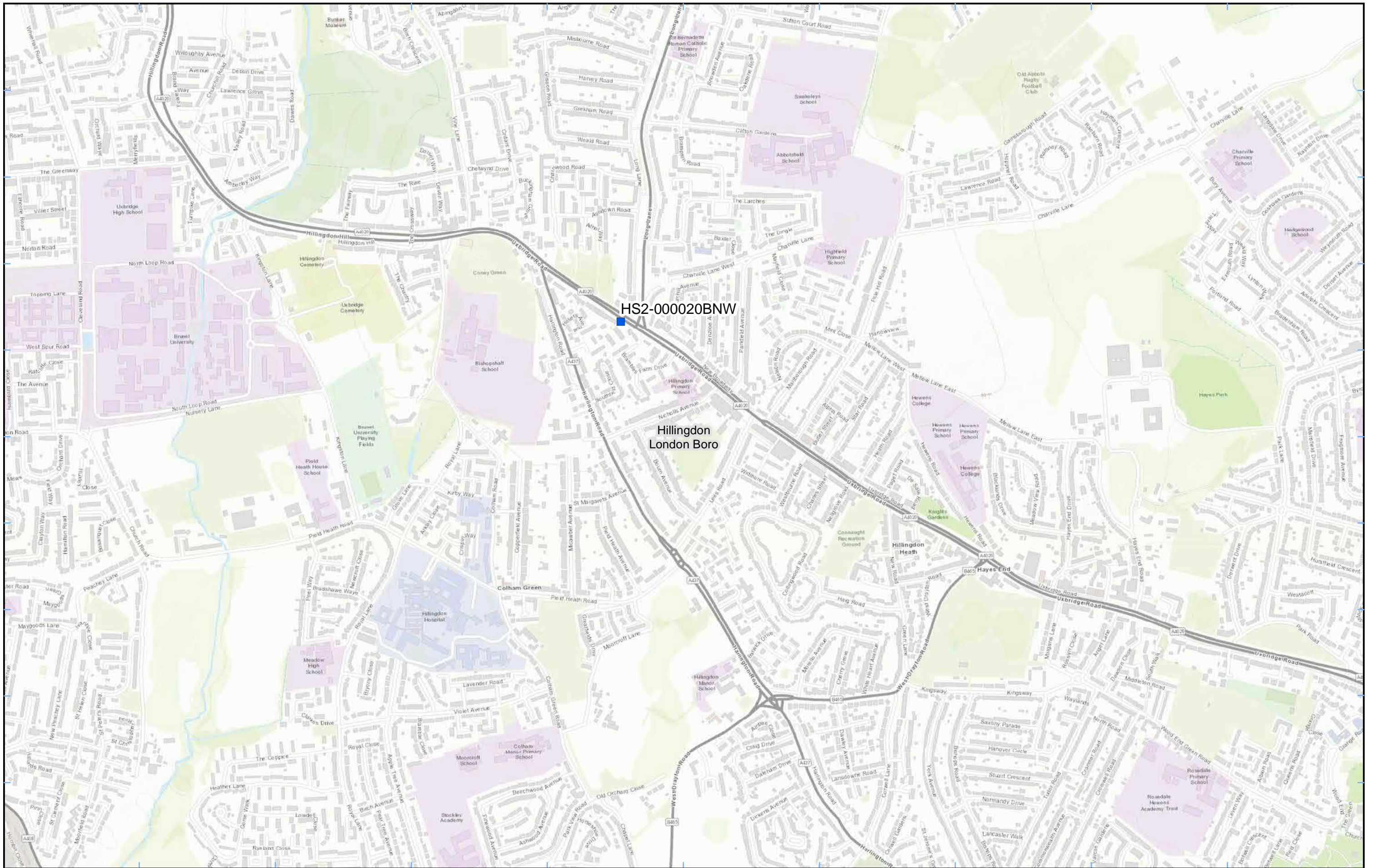
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HS2-000020BNW

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 May 2022 Results

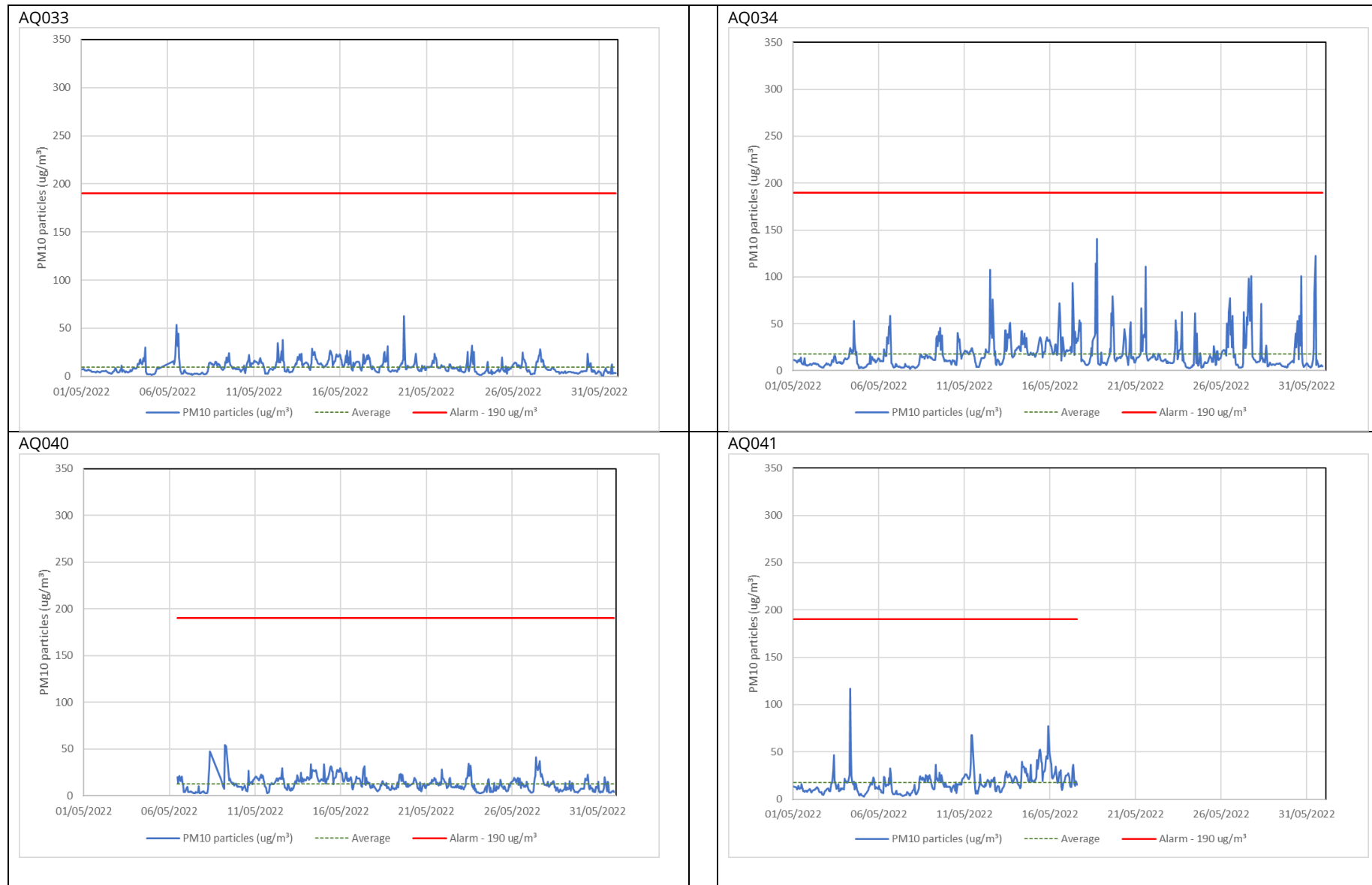
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	9.7	0.8	62.4	0	97.3
AQ034	506608, 187592	Copthall Cutting	L	Yes	N	17.8	2.3	140.6	0	100.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	12.8	2.5	54.6	0	80.2
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	17.5	2.8	116.9	0	53.2
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	9.8	1	60.5	0	99.3
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	20.7	1.4	2142.8	7	86.8
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	14.3	1.6	151.8	0	100.0
AQ050	506531, 187865	Copthall South Compound	M	Yes	N	13.6	2.4	53.2	0	82.6
CVV-AQMP3	504773, 188419	On the eastern boundary along south side of Moorhall	M	Yes	Y	6.7	1.0	71.0	0	89

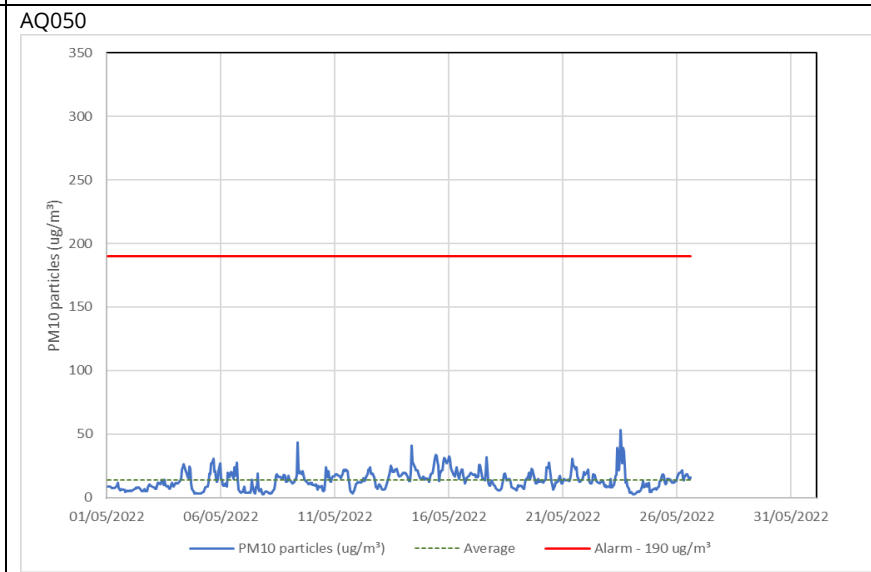
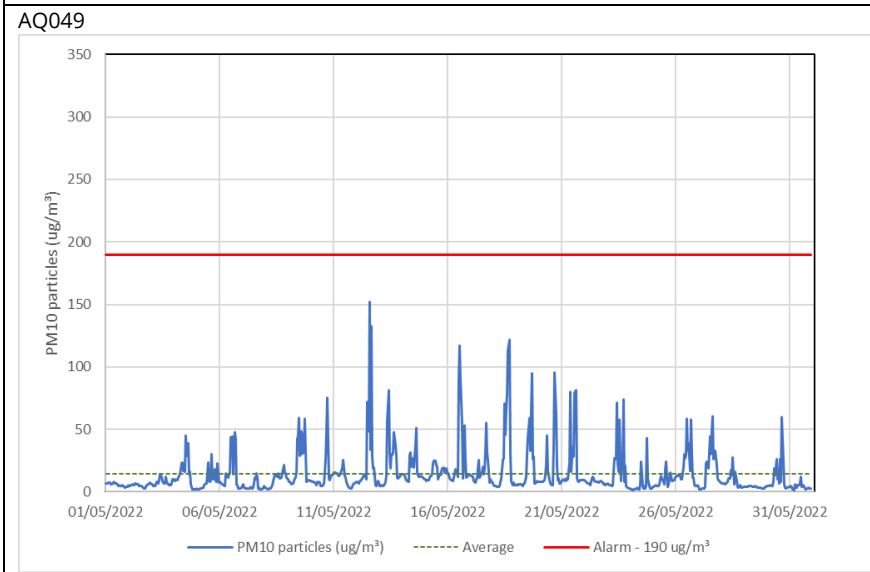
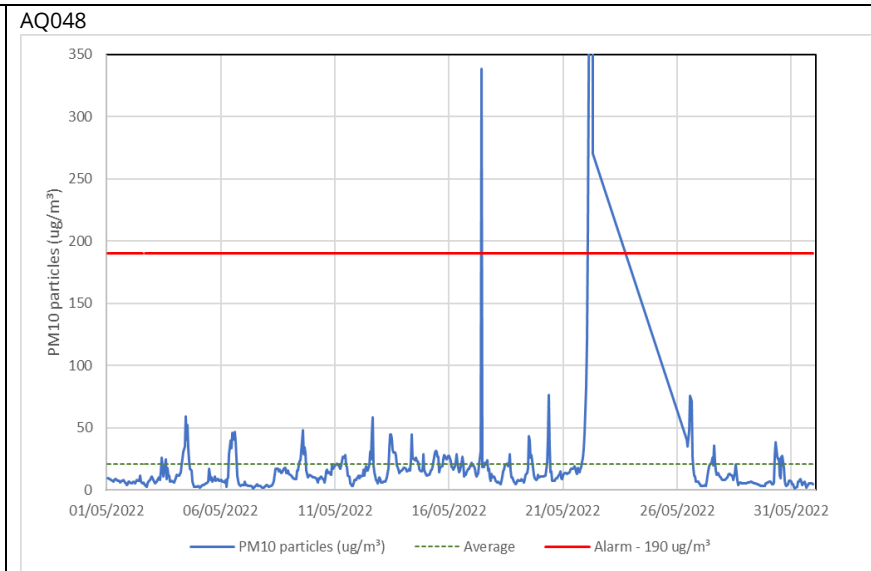
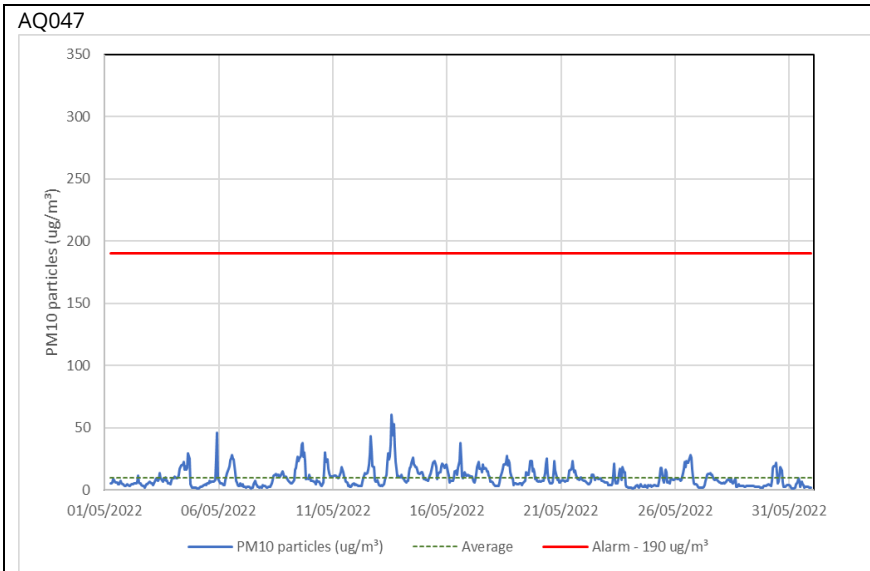
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
		Road								
CVV-AQMP4	505589, 187793	On the western boundary of HOAC at Dews Lane	M	Yes	Y	8.0	1.0	85.0	0	100
DGT-AQMP	506124, 188025	At the Dog Trust on Harvil Road.	M	Yes	Y	6.9	1.0	31.0	0	90
CVV-AQMP6	504321, 188835	Korda Lake Compound, along haul route north of Moorhall road.	M	Yes	Y	7.9	1.0	66.0	0	100

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

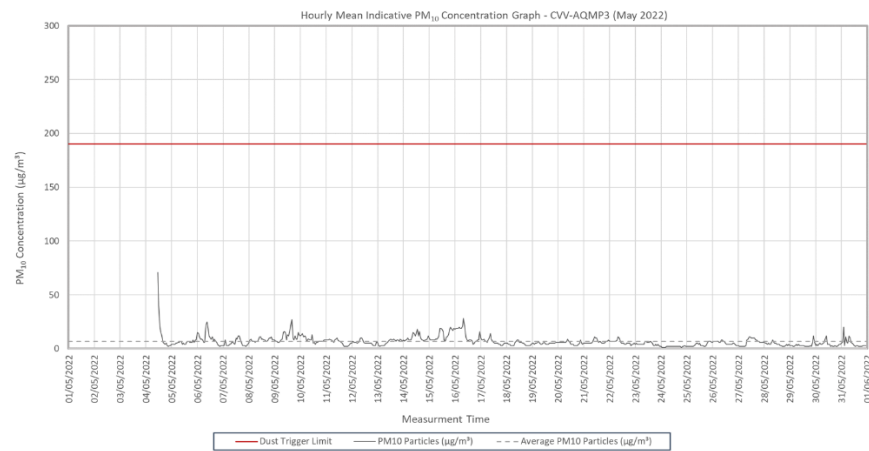
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ048	17/05/2022 09:00 -10:00; 338.1 µg/m ³	At the time of the trigger alert grass strimming was being undertaken in the area around the monitor to enable the completion of perimeter fencing to be installed. It is considered that this was the cause of the trigger alert. Works in the wider area included machinery and vehicle movements along the new internal haul road and material movements / placement of spoil. Dust suppression is readily available and was being deployed in these areas in the form of a tractor-pulled bowser, driven 10,000l bowser and dust cannons. Subsequent monitored levels dropped again following the completion of the grass strimming in the area.	It is considered the elevated level was limited to the immediate vicinity of the grass strimming and the monitor and not a wider reflection of levels on or beyond the site. Monitored dust levels as well as the works themselves will be constantly checked to ensure dust suppression continue to be effectively applied.
AQ048	22/05/2022 01:01 - 02:00; 206.7 µg/m ³ 02:01 - 03:00; 328.2 µg/m ³ 03:01 - 04:00; 459.2 µg/m ³ 04:01 - 05:00; 600.0 µg/m ³ 05:01 - 06:00; 2142.8 µg/m ³ 06:01 - 07:00; 270.3 µg/m ³	The dust triggers were due to a power loss to the monitor which is powered by a hydrogen generator. With the loss in power due to the hydrogen cylinders running out of gas the pump and heater slowly stopped operating with subsequent false readings.	Power was restored a few days later with the replenishment of the hydrogen gas cylinders.

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

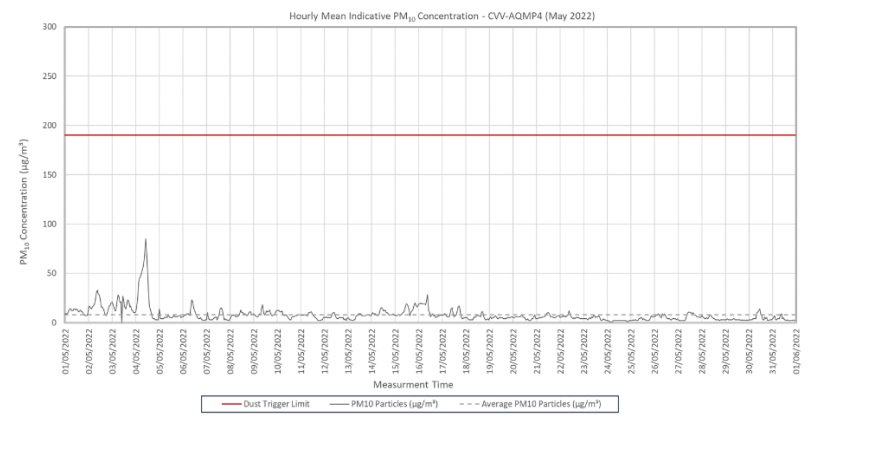




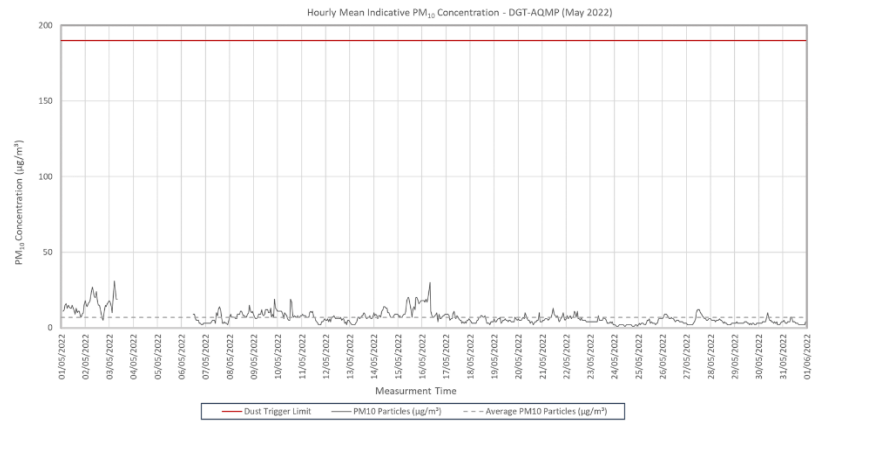
CVW-AQMP3



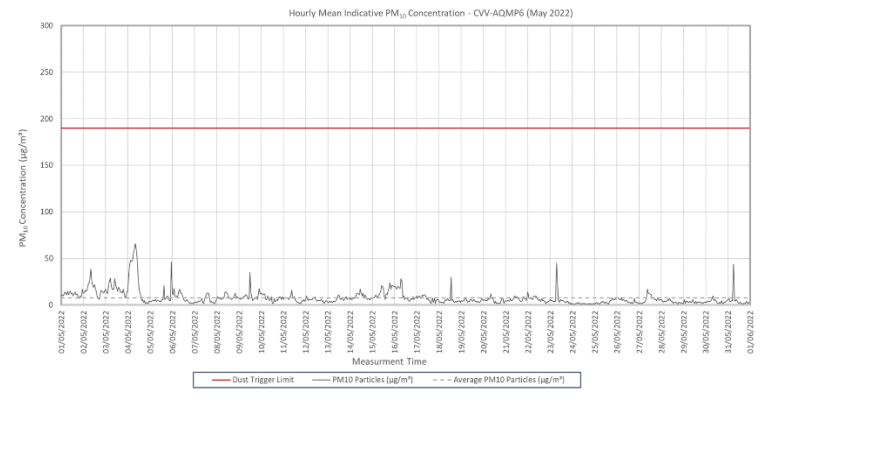
CVW-AQMP4



DGT-AQMP



CVW-AQMP6



Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2022 (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	39	25	33	19									29
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	60	47	49	41									49
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	51	Tube Missing	48	35									45
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	53	29	60	41									46
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	46	30	40	33									37
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40	37	28									39
HS2-000020BPN	Lamp post on B467	506767, 186224	47	34	43	30									39

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
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	61	41	40	Tube Missing									47
HS2-000020BQN	Lamp post on Park Road	506176, 185444	53	36	56	40									46
HS2-000020BQP	Sign post on Long Lane	507614, 184663	50	36	56	37									45
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	42	32	45	33									38