

Air Quality and Dust Monitoring Monthly Report – April 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 March 2022 and April 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) 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;
- 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.

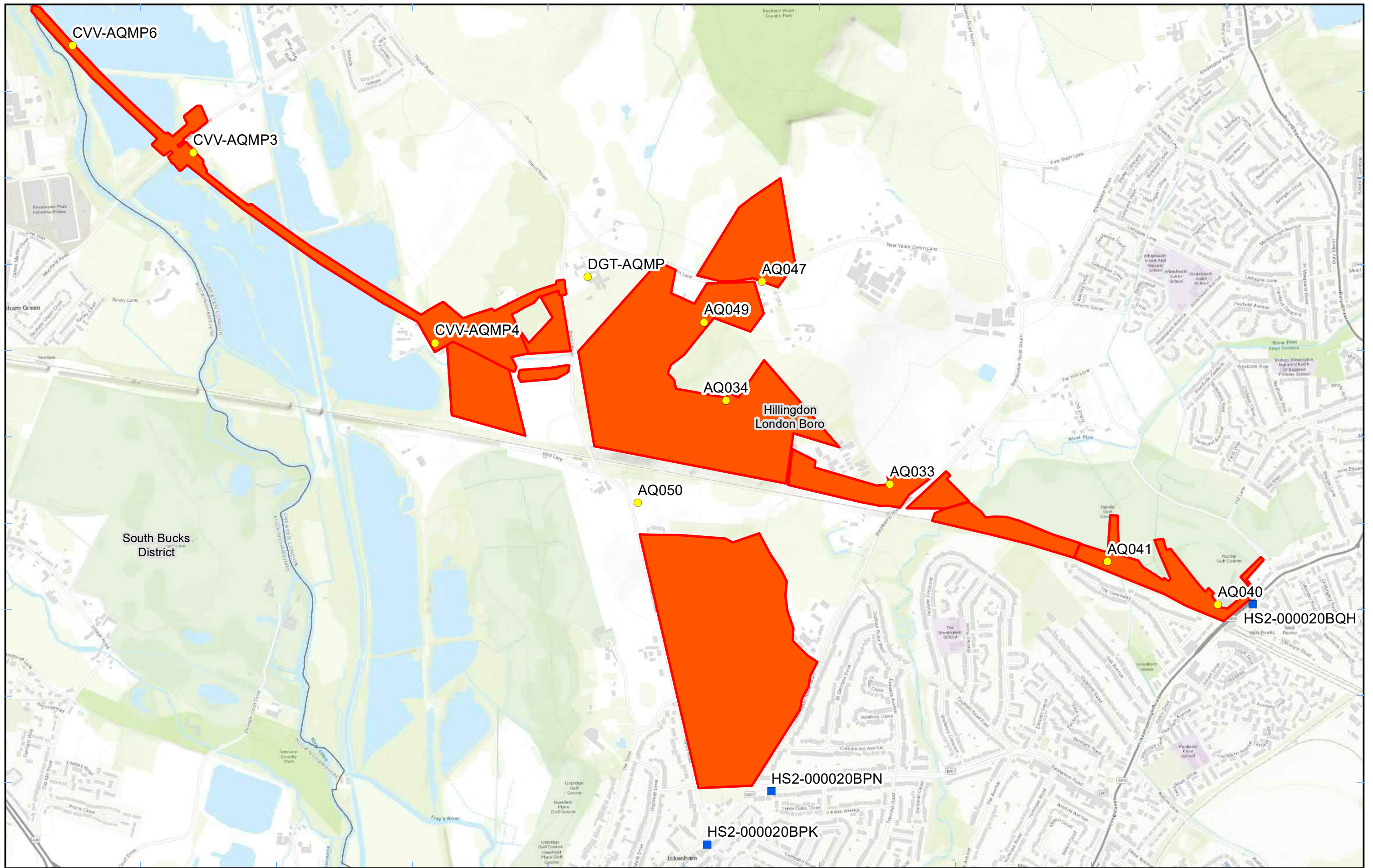
- 1.1.5 Twelve (12) dust monitors are installed around worksites, where works are underway. These sites returned a medium to high dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor in Figure 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 One (1) dust trigger alert was recorded during the monitoring period (April 2022) and is reported in Appendix B, Table 3.
- 1.1.9 Data capture was below 90% for multiple monitors April 2022 due to power supply issues, access issues, monitor faults, and installation processes.
- 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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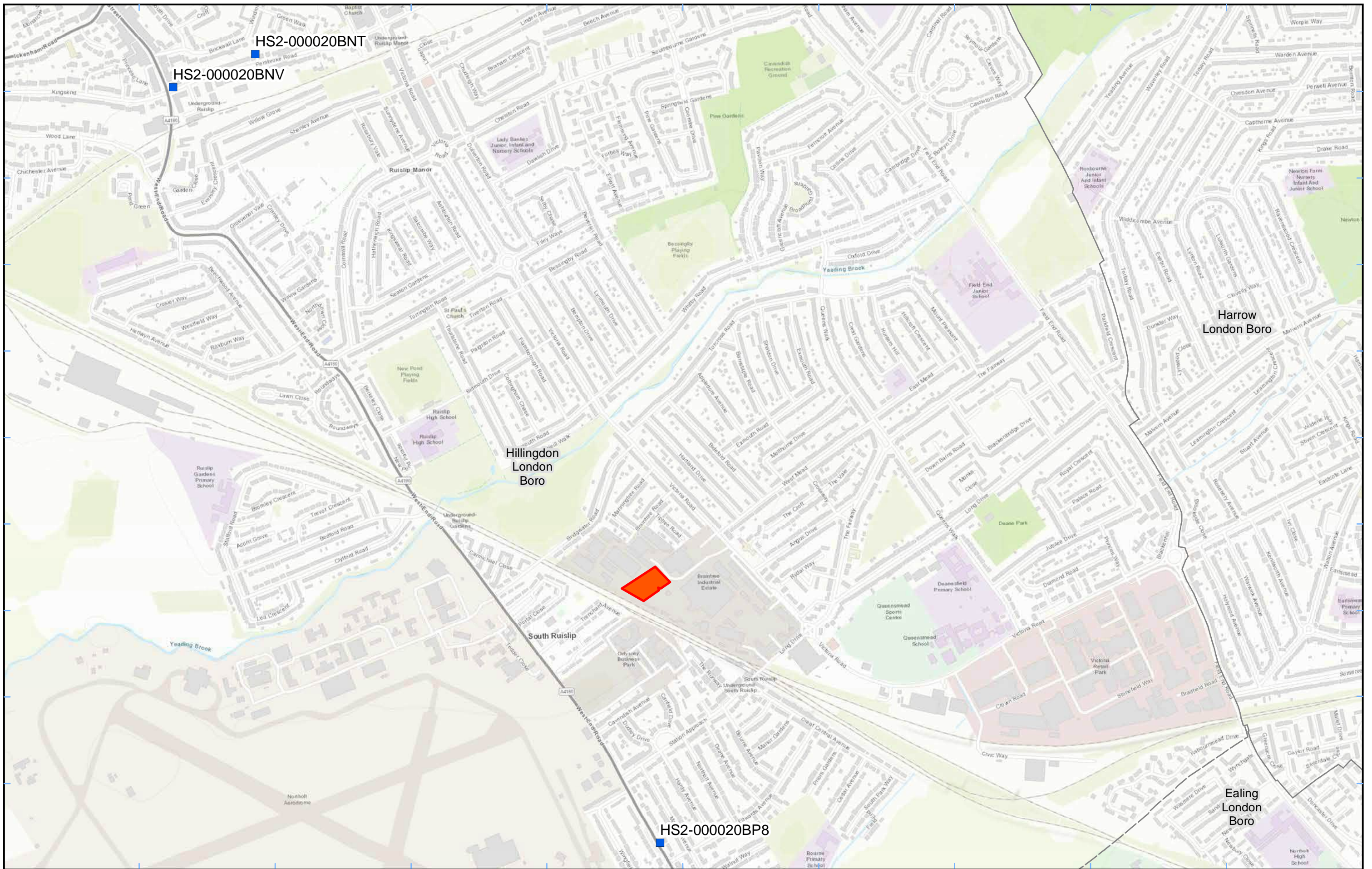
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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

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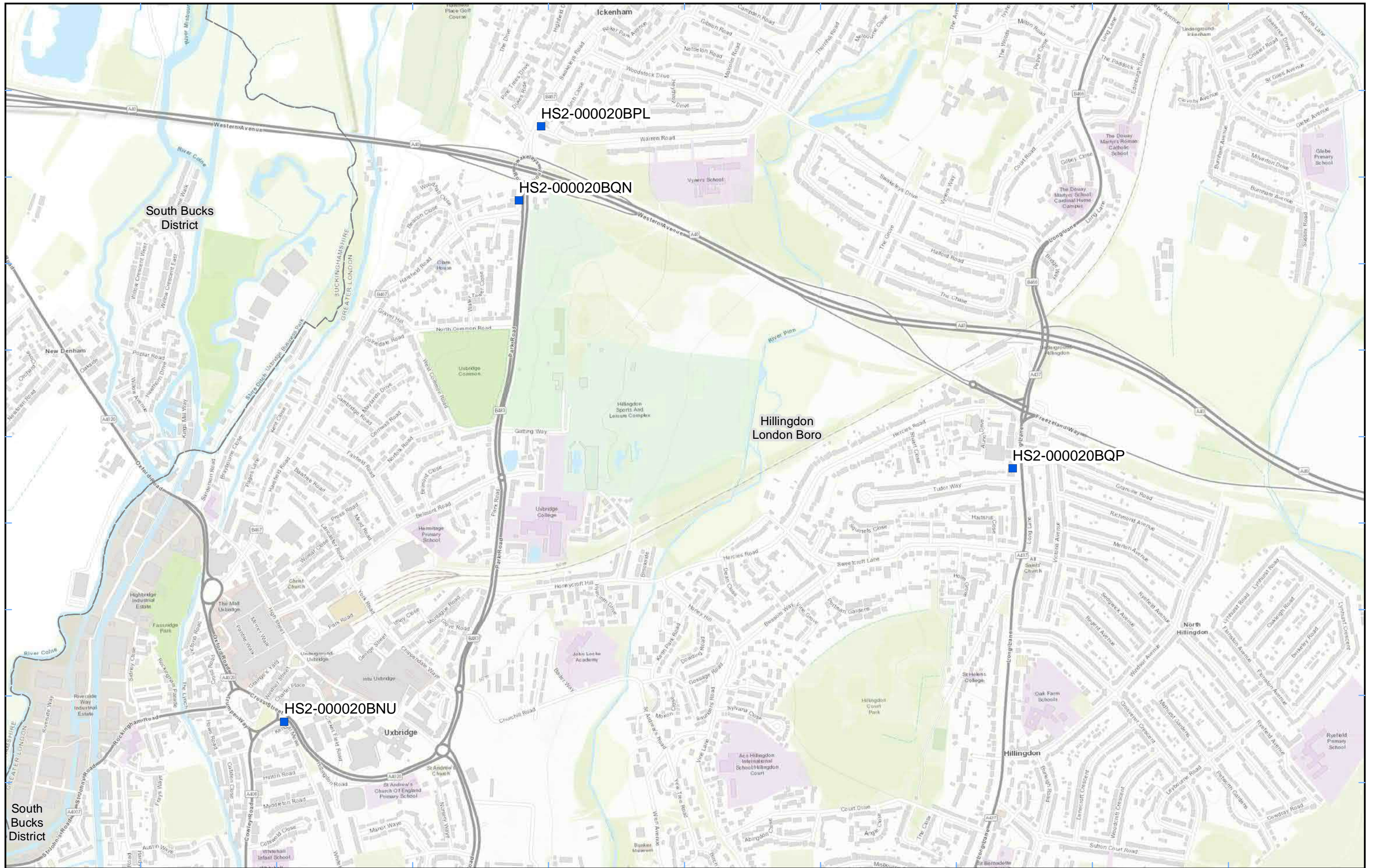
Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
 London Borough of Hillingdon

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Legend
 Diffusion Tube
 District Borough Unitary Boundaries

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

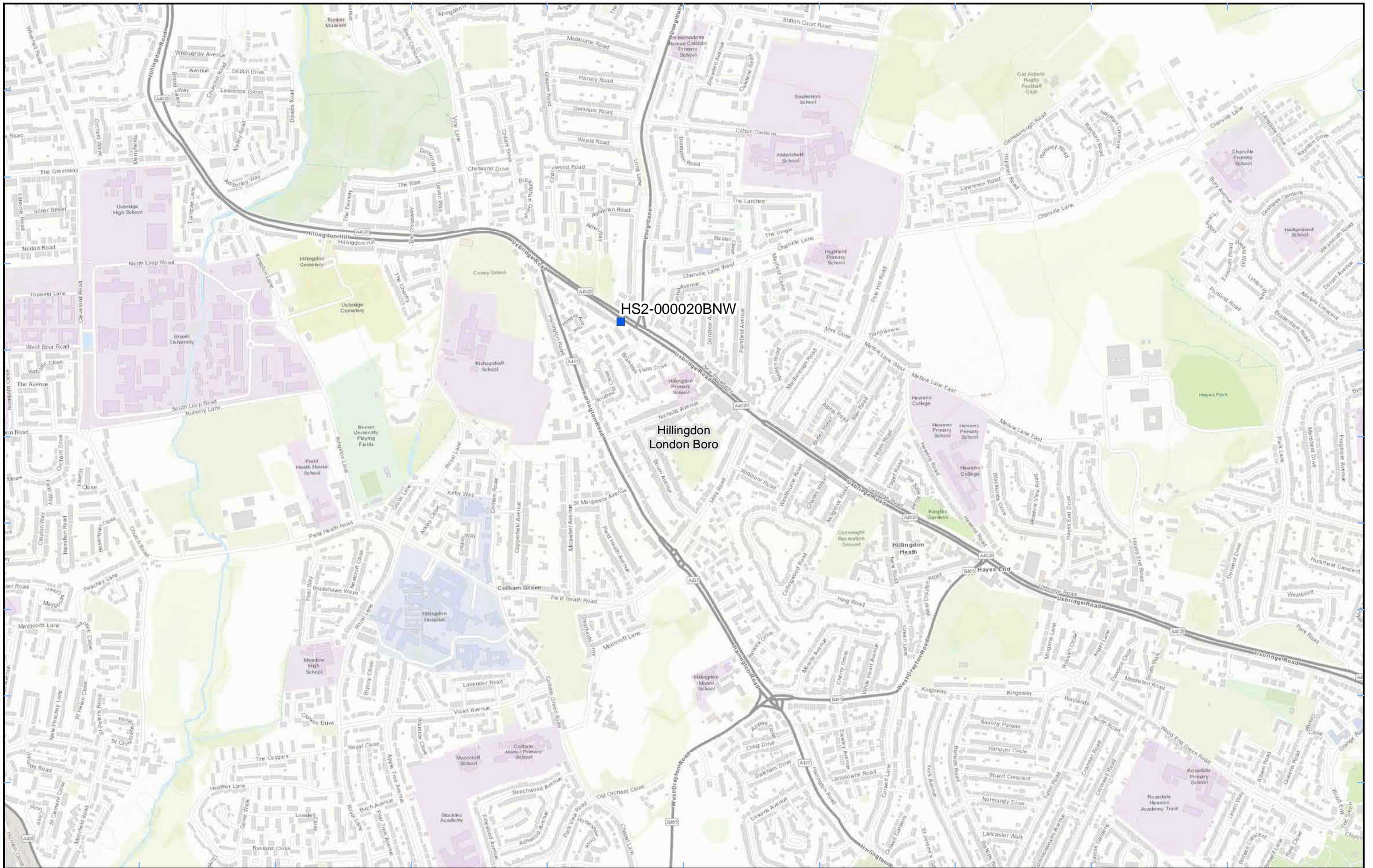
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Hillingdon
London Boro

- 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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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and April 2022 Results

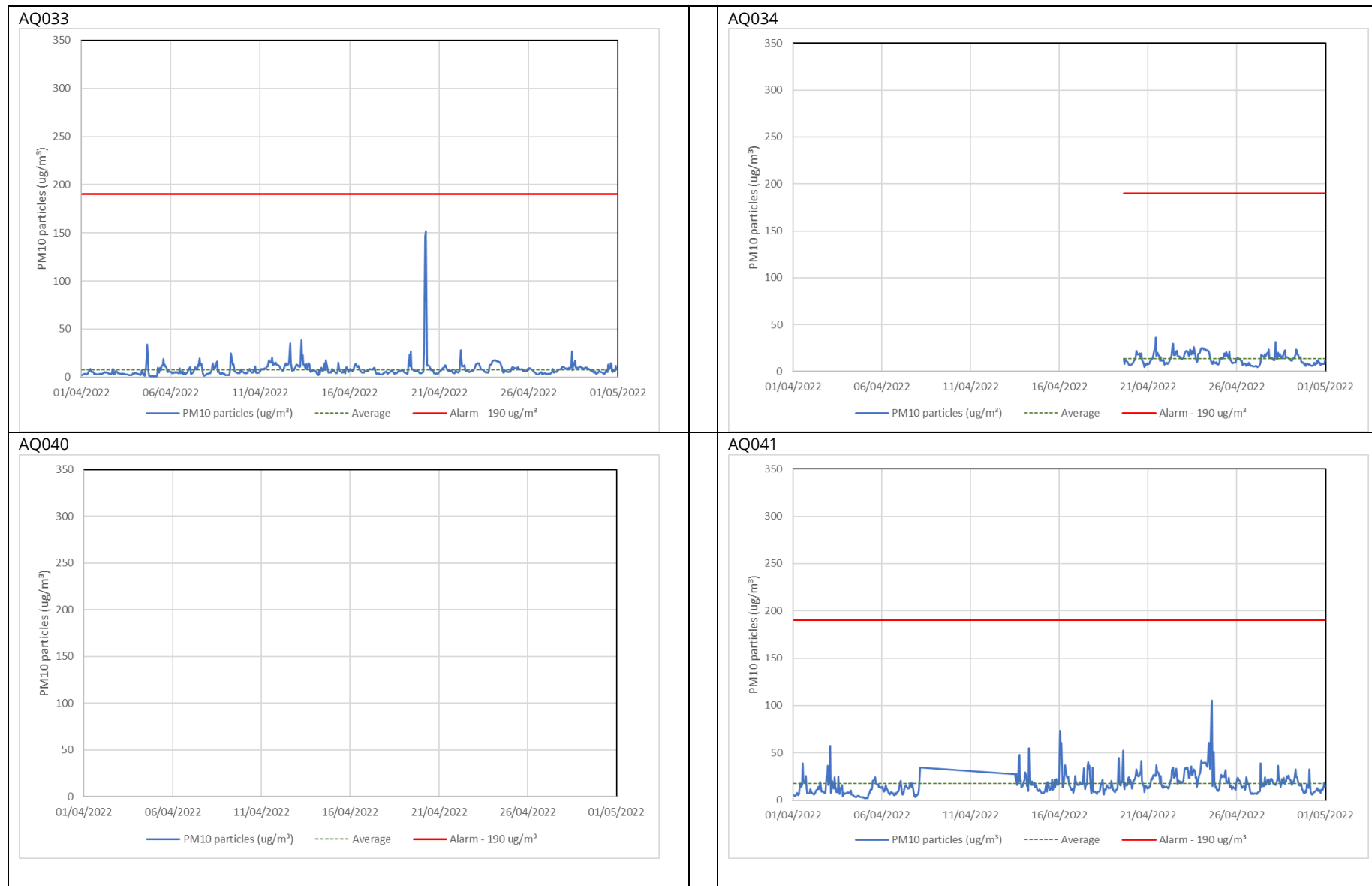
| Monitoring site ID | Coordinates (X,Y) | Location description | Dust risk rating for site | Monitoring site active during period | Change to site since previous period report | Mean 1-hour PM ₁₀ concentration (µg/m ³) | Minimum 1-hour PM ₁₀ concentration (µg/m ³) | Maximum 1-hour PM ₁₀ concentration (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 | 8.0 | 0.7 | 152.0 | 0.0 | 99.9 |
| AQ034 | 506608, 187592 | Copthall Cutting | H | Yes | N | 13.7 | 5 | 36.6 | 0 | 38.0 |
| AQ040 | 508328, 186880 | West Ruislip Golf Course | M | Yes | N | - | - | - | - | - |
| AQ041 | 507942, 187028 | West Ruislip Portal | M | Yes | N | 17.4 | 1.7 | 105.2 | 0 | 82.5 |
| AQ047 | 507942, 187029 | West Ruislip Portal | M | Yes | N | 9.6 | 1.9 | 39.4 | 0 | 85.0 |
| AQ048 | 507243, 188349 | Northern Sustainable Placement Area | M | Yes | N | 13.0 | 4.1 | 80.1 | 0 | 35.0 |
| AQ049 | 506531, 187865 | Copthall North, Ancient Woodland | M | Yes | N | 8.5 | 0.9 | 47.4 | 0 | 100.0 |
| AQ050 | 506531, 187865 | Copthall South Compound | M | Yes | N | 11.8 | 4.1 | 62.8 | 0 | 20.6 |
| CVV-AQMP3 | 504773, 188419 | Moorhall Road | M | Yes | Yes | 7.3 | 2.0 | 14.0 | 0 | 18.0 |
| CVV-AQMP4 | 505589, 187793 | Dews Lane | M | Yes | Yes | 9.8 | 1.0 | 101.0 | 0 | 99.0 |
| DGT-AQMP | 506124, 188025 | Harvil Road. | M | Yes | Yes | 10.3 | 1.0 | 552.0 | 1 | 64.0 |

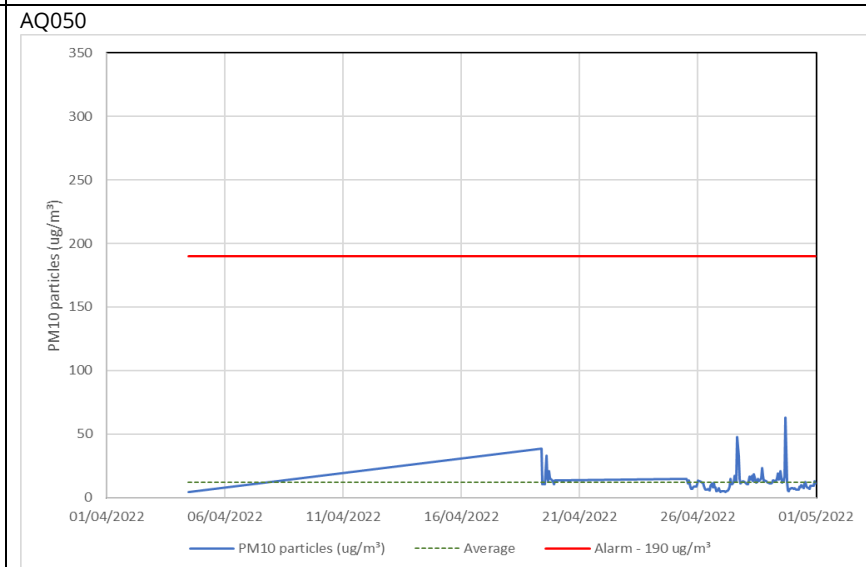
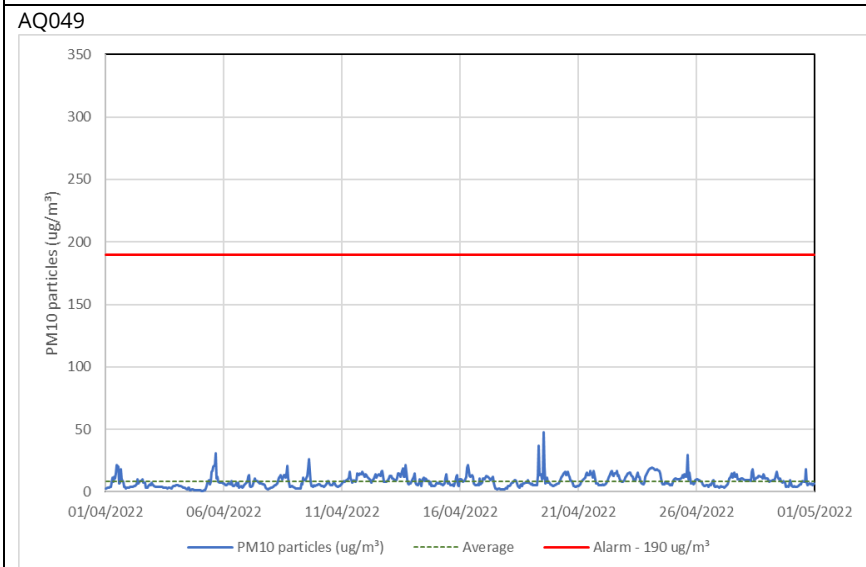
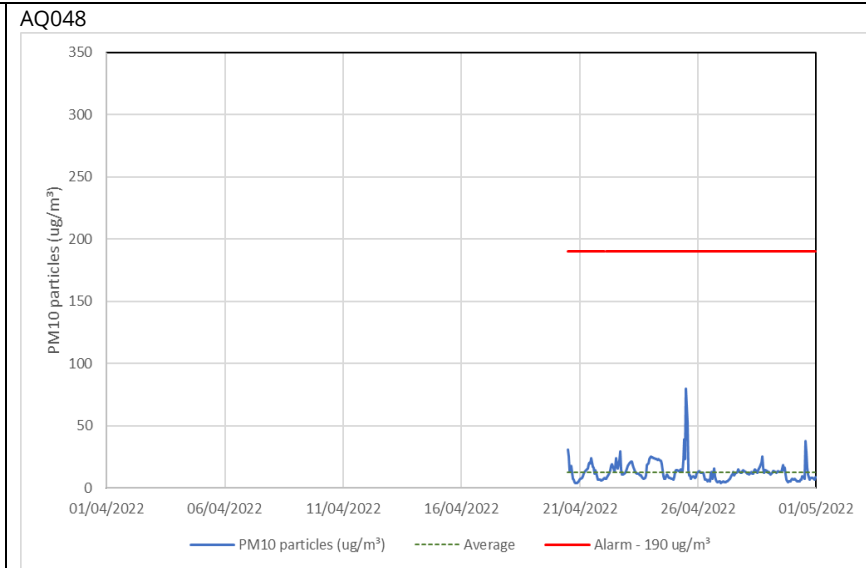
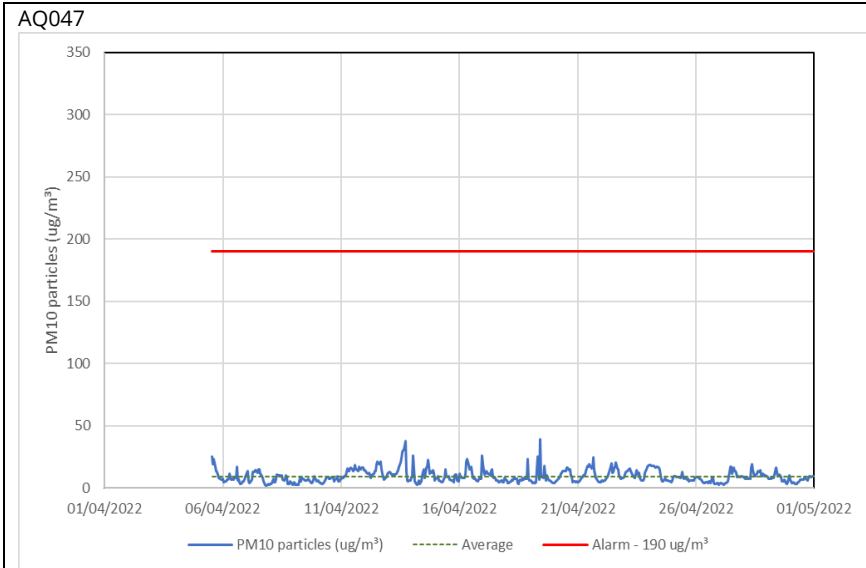
| Monitoring site ID | Coordinates (X,Y) | Location description | Dust risk rating for site | Monitoring site active during period | Change to site since previous period report | Mean 1-hour PM ₁₀ concentration (µg/m ³) | Minimum 1-hour PM ₁₀ concentration (µg/m ³) | Maximum 1-hour PM ₁₀ concentration (µg/m ³) | Number of 1- hour periods exceeding trigger level of 190 µg/m ³ | Data capture (%) |
|--------------------|-------------------|----------------------|---------------------------|--------------------------------------|---|---|--|--|--|------------------|
| CVV-AQMP6 | 504321, 188835 | Moorhall road. | M | Yes | Yes | 6.3 | 2.0 | 13.0 | 0 | 14.0 |

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

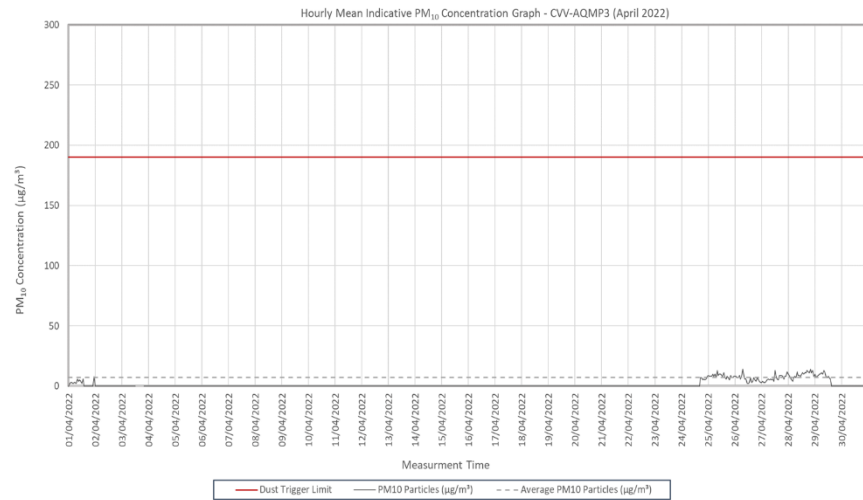
| Monitoring site ID | Period exceeding trigger level | Investigation | Outcomes / Resolution / Remedial measures implemented |
|--------------------|---|---|---|
| DGT-AQMP | 13/04/2022 22:00 – 23:00; 552.00 µg/m ³ | Reviewed dust readings from other monitors in close proximity for the same time and date and concluded that the trigger was a result of a local disturbance (e.g., nearby idling vehicles, lawn mowing, someone smoking) and not a result of works. | N/A |

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

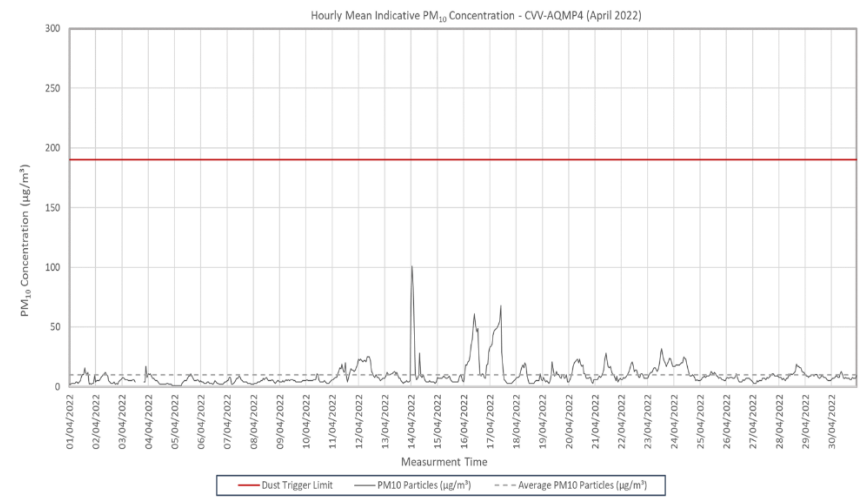




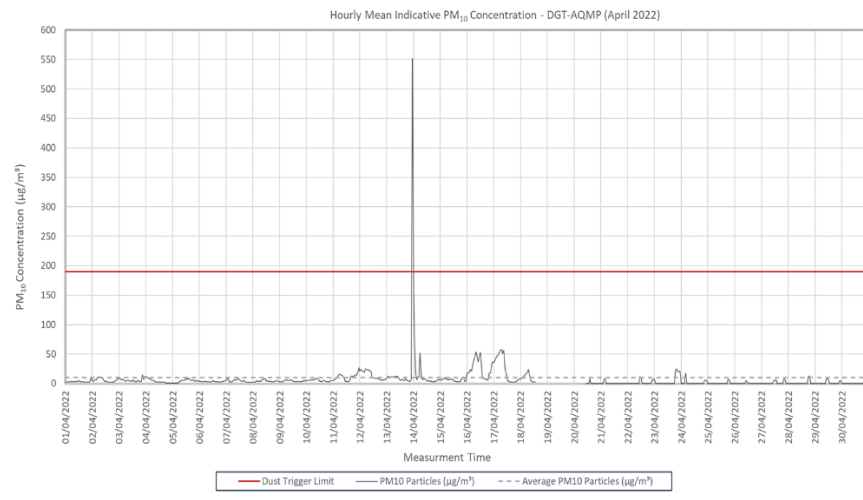
CVW-AQMP3



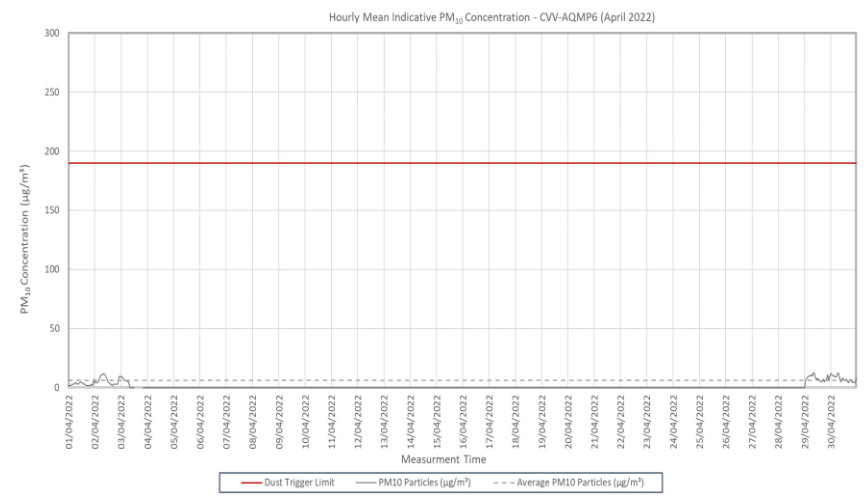
CVW-AQMP4



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 | | | | | | | | | | 32 |
| HS2-000020BNU | Cowley Road sign post at junction with Hillingdon Road | 505492, 183926 | 60 | 47 | 49 | | | | | | | | | | 52 |
| HS2-000020BNV | High Street sign post at junction with Pembroke Road | 509439, 187117 | 51 | Tube Missing | 48 | | | | | | | | | | 49 |
| HS2-000020BNW | Signpost on A4020 Uxbridge Road at junction with Long Lane | 507365, 182687 | 53 | 29 | 60 | | | | | | | | | | 47 |
| HS2-000020BPK | Lamp post in crescent off Swakeleys Road | 506542, 186037 | 46 | 30 | 40 | | | | | | | | | | 39 |
| HS2-000020BPL | Warren Road sign post on corner of Swakeleys Road and Warren Road | 506240, 185660 | 51 | 40 | 37 | | | | | | | | | | 43 |
| HS2-000020BPN | Lamp post on B467 | 506767, 186224 | 47 | 34 | 43 | | | | | | | | | | 41 |

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 | | | | | | | | | | 47 |
| HS2-000020BQN | Lamp post on Park Road | 506176, 185444 | 53 | 36 | 56 | | | | | | | | | | 48 |
| HS2-000020BQP | Sign post on Long Lane | 507614, 184663 | 50 | 36 | 56 | | | | | | | | | | 47 |
| HS2-000020BP8 | Triplicate site at South Ruislip roadside automatic monitoring station | 510858, 184916 | 42 | 32 | 45 | | | | | | | | | | 39 |