HS2

February 2021

Air Quality and Dust Monitoring Monthly Report – February 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 January and February 2021 respectively.

1.1.2 Figure 1 to Figure 5 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 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 5, 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 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) 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 February, as presented in Appendix A, Figure 1 to Figure 5, include:

Dews Lane site:

- Utilities: Sections H2 and H3;
- HOAC Compound: Finishing works, fencing, road, hardstanding and civil works;
- INNS-GUC to Harvil Road: Removal works;
- Dews Lane Compound: Compound operation;
- Dews Lane Earthworks: Stockpile management, cutting/bulk excavation; and
- Drainage Works.

CVV South Moorhall Road worksite:

- Utilities: Sections H5, and H12;
- North and South Moorhall Road Compounds: Road, hardstanding and civil works;
- North Moorhall Road Hall Route: Earthworks, drainage and civil works;
- INNS- River Colne to GUC: Removal works;
- Moorhall Road Stockpile: Stockpile management;
- Haul Route: Civil works, earthworks and drainage; and
- Ground investigation.

1.1.6 Seven (7) 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 The trigger level for PM_{10} concentrations of 190 µg/m^3, 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 multiple dust trigger alerts recorded during the monitoring period (February 2021). However, following investigations it was noted that these exceedances were not related to HS2 site activities, as no dusty activities were programmed or being undertaken at the time. Exceedances are presented in Appendix B, Table 2. All other results were in line with expected ranges.

1.1.10 Data capture for monitors AQ034, AQ041 and CVV-AQMP3 was below 90% for the month of February 2021. Missing data was due to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using renewable power. Technical issues have been or are in the process of being resolved and an alternative power source is being explored to resolve the intermittent solar power losses.

1.1.11 Diffusion tube monitoring of Nitrogen Dioxide (NO_2) 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.

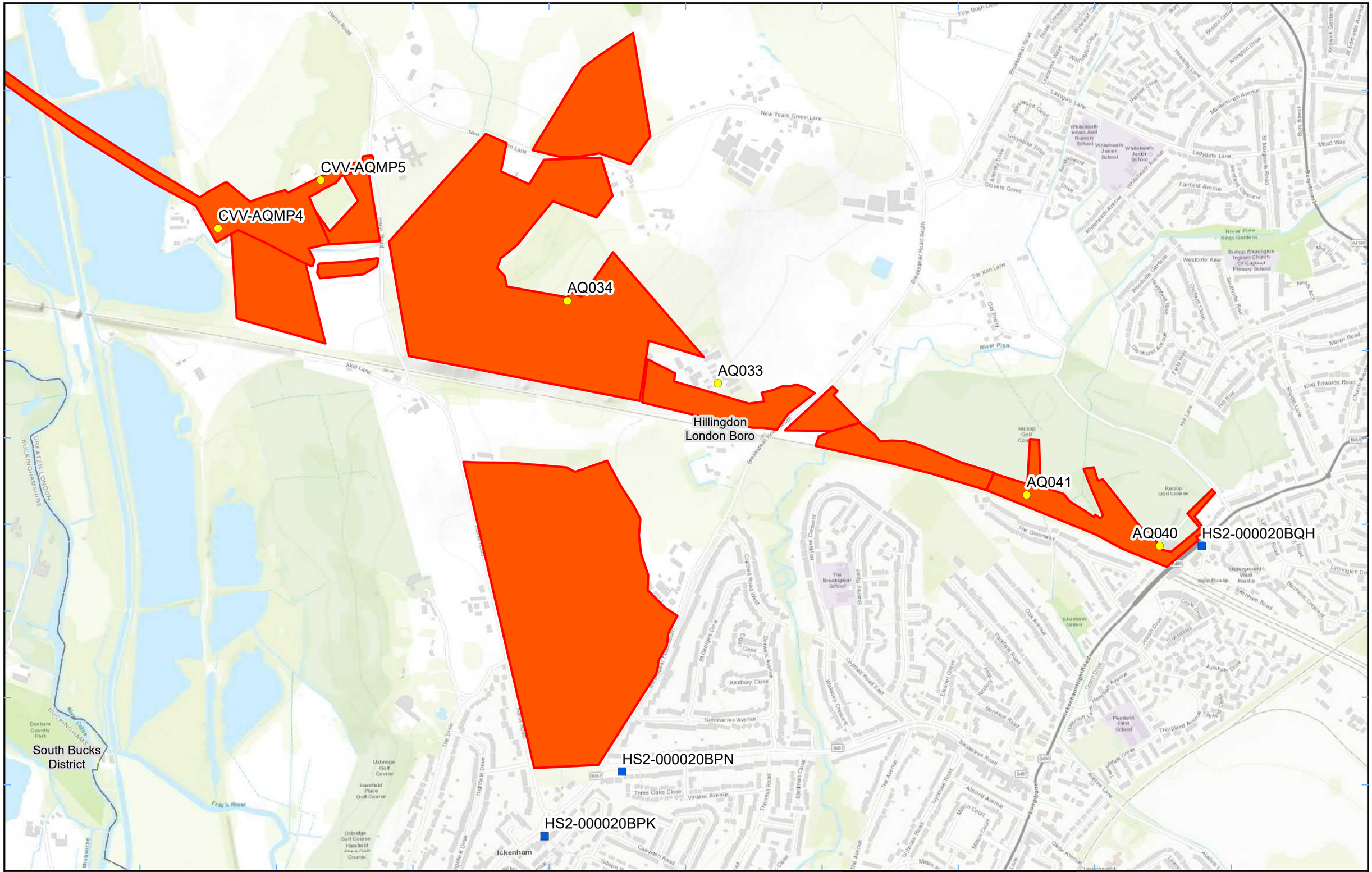
1.1.12 Diffusion tube monitoring results are provided from the laboratory analysis, and therefore still require various analysis and adjustments to be undertaken. Final corrected results will be presented and described in the annual report. However, based on the results to date, no unexpected values were recorded during the monitoring period.

1.1.13 NO_2 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, during this reporting period (February 2021).

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 5: Current monitoring locations within the LBH



Legend

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

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 1)

London Borough of Hillingdon

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

Scale at A3: 1:10,000

0 100 200 300 400

Metres

Doc Number:

Date: 03/03/21

HS2-000020BNT

HS2-000020BNV

HS2-000020BP8

Hillingdon London Boro

Harrow London Boro

Ealing London Boro

Legend

Diffusion Tube

District Borough Unitary Boundaries

Worksite

Map Number

Map Name

Worksite and Monitoring Locations In LBH (Sheet 2)

London Borough of Hillingdon

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

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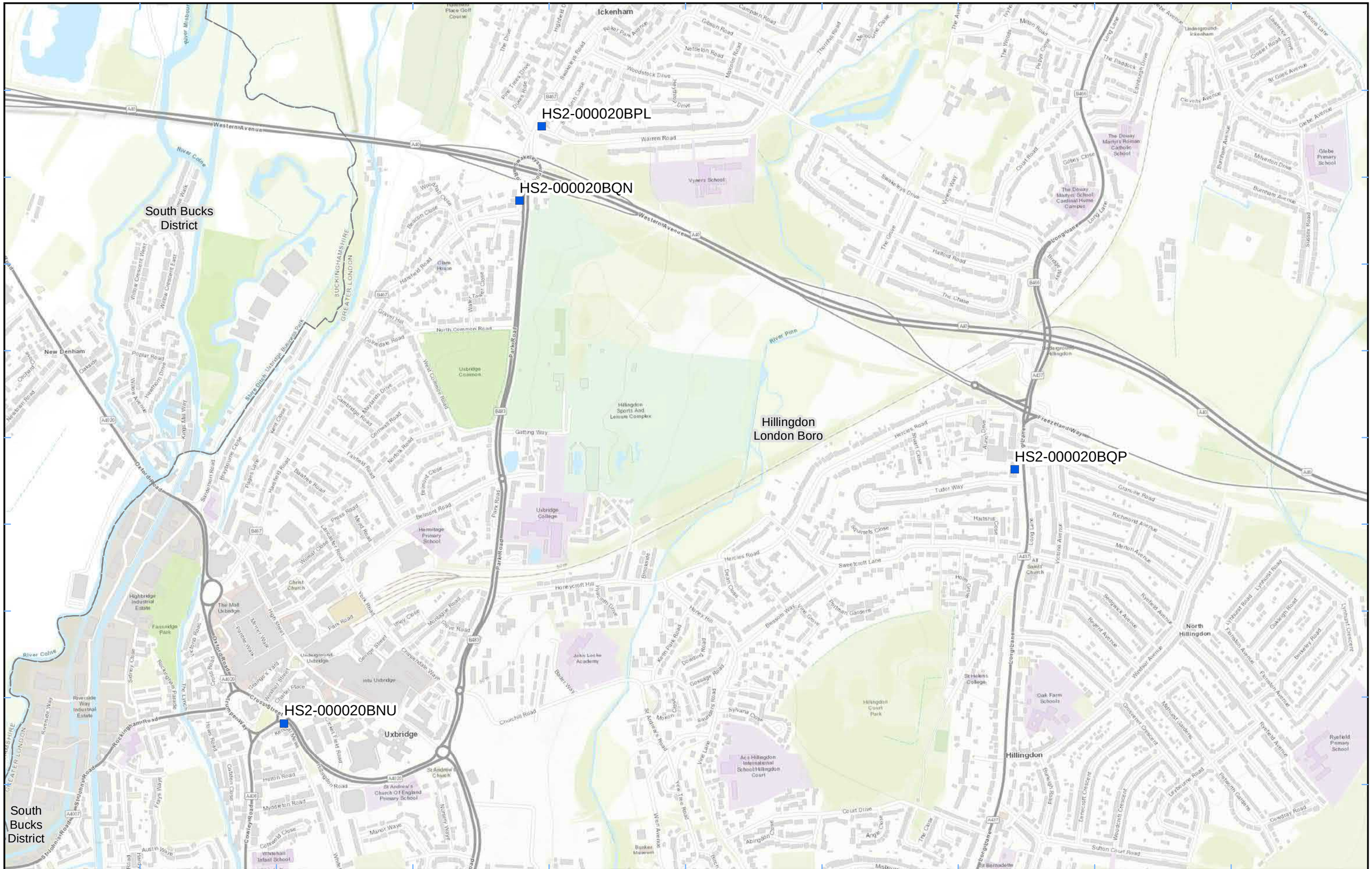
Doc Number:

Date: 08/12/20



Legend

🟦 Diffusion Tube

▭ District Borough Unitary Boundaries

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

Monitoring Locations In LBH (Sheet 3)

London Borough of Hillingdon

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

Scale at A3: 1:10,000

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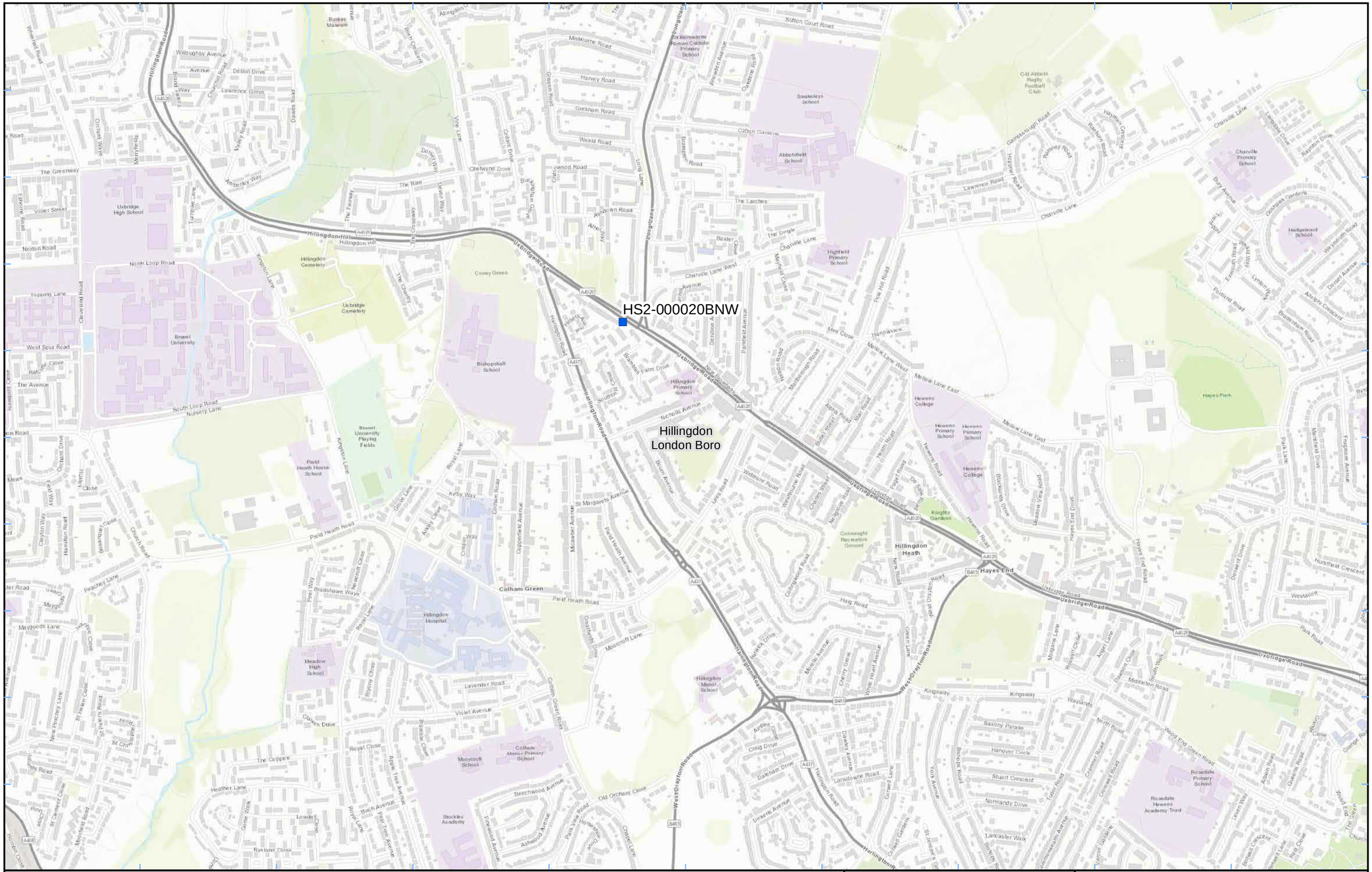
Metres

Doc Number:

Date: 08/12/20



Legend

- Diffusion Tube
- District Borough Unitary Boundaries

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

Monitoring Locations In LBH (Sheet 4)

London Borough of Hillingdon

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

Scale at A3: 1:10,000

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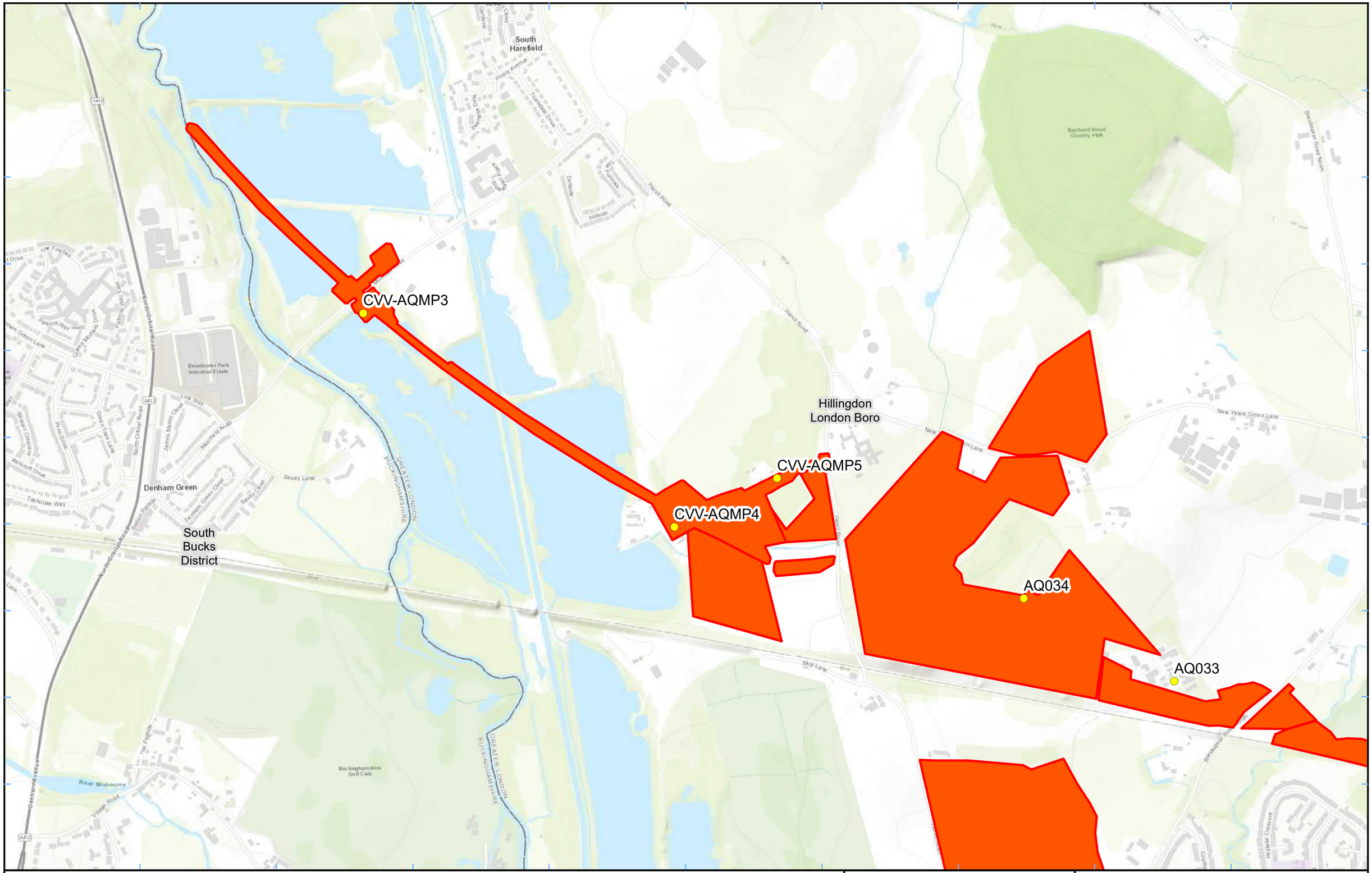
Metres

Doc Number:

Date: 08/12/20



Legend

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), (c) OpenStreetMap contributors, and the GIS User Community

Map Number

Map Name

Worksite and Monitoring Locations In LBH (Sheet 5)

London Borough of Hillingdon

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

Scale at A3: 1:10,000

0 100 200 300 400
Metres

Doc Number:

Date: 22/02/21

Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and February 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 ($\mu g/m^3$)	Minimum 1-hour PM_{10} concentration ($\mu g/m^3$)	Maximum 1-hour PM_{10} concentration ($\mu g/m^3$)	Number of 1- hour periods exceeding trigger level of 190 $\mu g/m^3$	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	No	8.5	0.5	76.9	0	99.9
AQ034	506608, 187592	Copthall Cutting	L	Yes	No	27.4	1.1	4097.8*	5	87.3
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	No	13.1	0.8	92.4	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	No	61.3	1.0	6515.9*	19	84.6
CVV-AQMP3	504690, 188421	On the eastern boundary along south side of Moorhall Road	M	Yes	No	10.7	1.0	75.0	0	76
CVV-AQMP4	505594, 187801	On the western boundary of HOAC at Dews Lane	M	Yes	No	9.8	1.0	47.0	0	100
CVV-AQMP5	505892, 187942	Adjacent to Dew's Farm Cottages on Dews Lane.	M	Yes	No	9.9	1.0	38.0	0	100

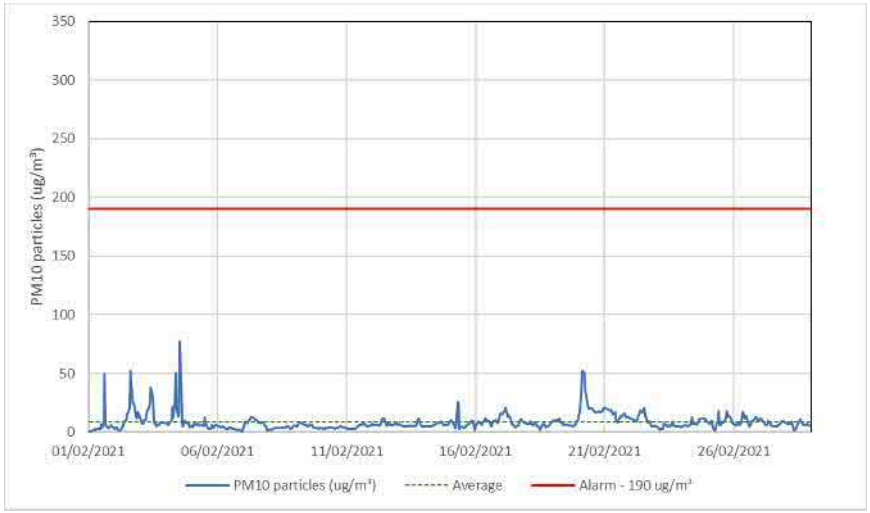
* As noted in Table 2, these concentrations are considered to be a result of a faulty monitor.

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

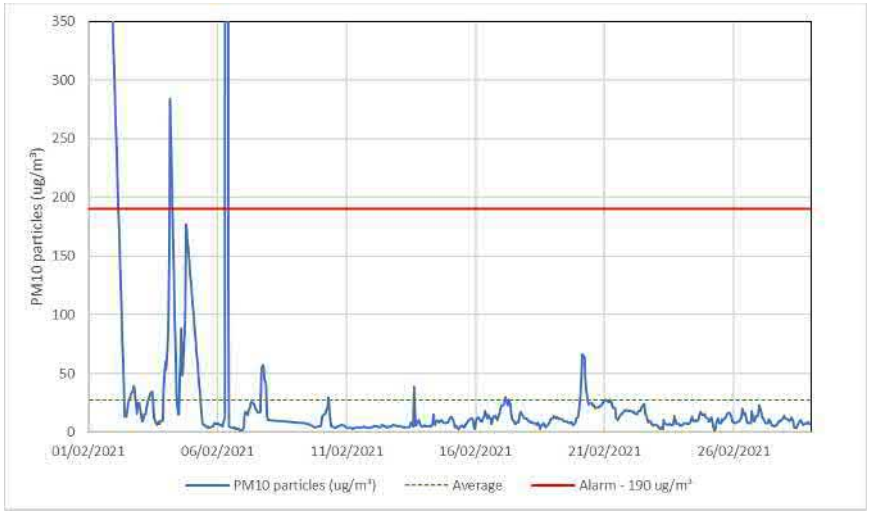
Worksite	Monitoring site ID	Period exceeding trigger level and concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Copthall Cutting	AQ034	01/02/2021 01:01- 03:00: 958.3 µg/m^3 (x2) 04/02/2021 04:01 - 05:00: 284.1 µg/m^3 (x1) 06/02/2021 08:01 - 10:00: 2,236.3 µg/m^3 (x2)	Due to the large number of triggers being associated with power losses (from the 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. 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 triggers.	Follow up investigation with the suppliers confirmed the assumption. An additional alternative / supplementary power supply is to be considered during winter months.
West Ruislip Portal	AQ041	01/02/2021 04:01 - 10:00: 6,515.9 µg/m^3 (x6) 03/02/2021 08:01- 12:00: 252.2 µg/m^3 (x4) 05/02/2021 02:01 - 07:00: 489.7 µg/m^3 (x5) 06/02/2021 06:01 - 10:00: 4,789.3 µg/m^3 (x4)		

Figure 6: Construction dust 1-hour mean indicative PM_{10} concentration for dust monitors

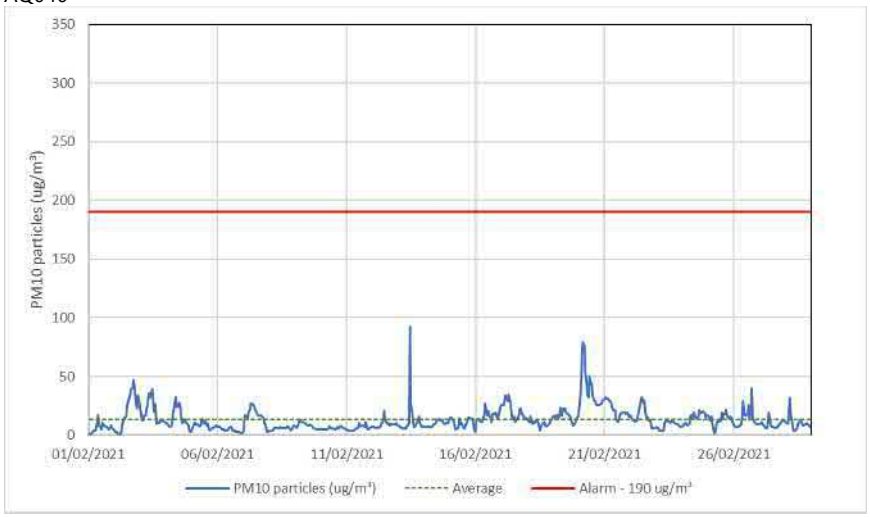
AQ033



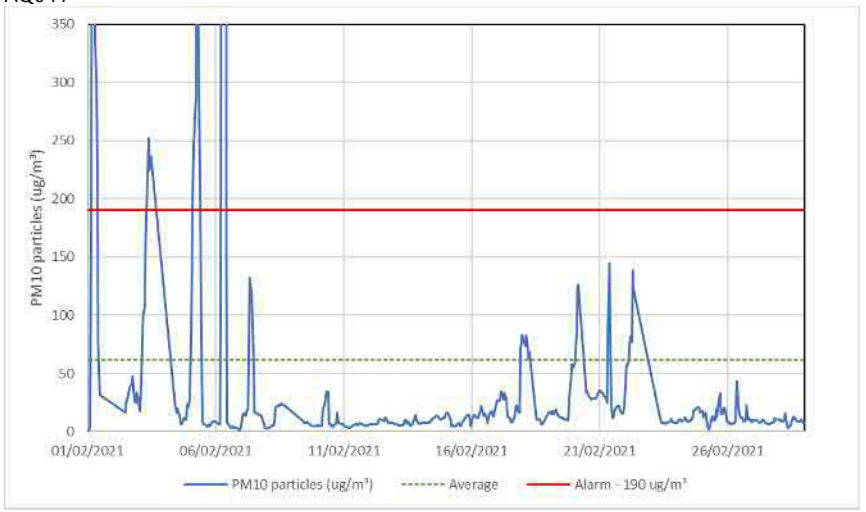
AQ034



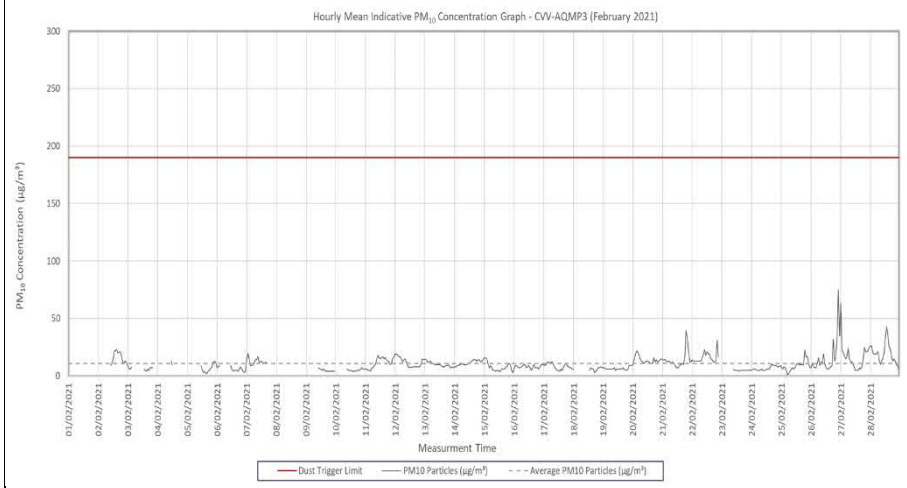
AQ040



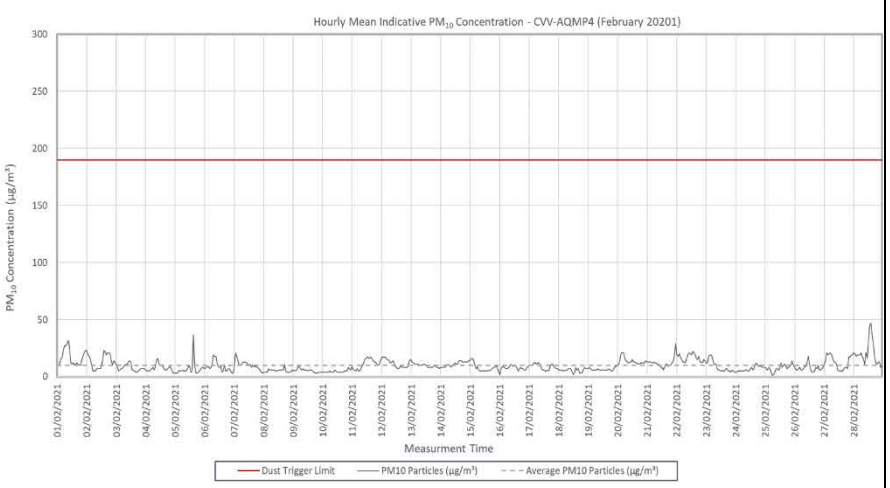
AQ041



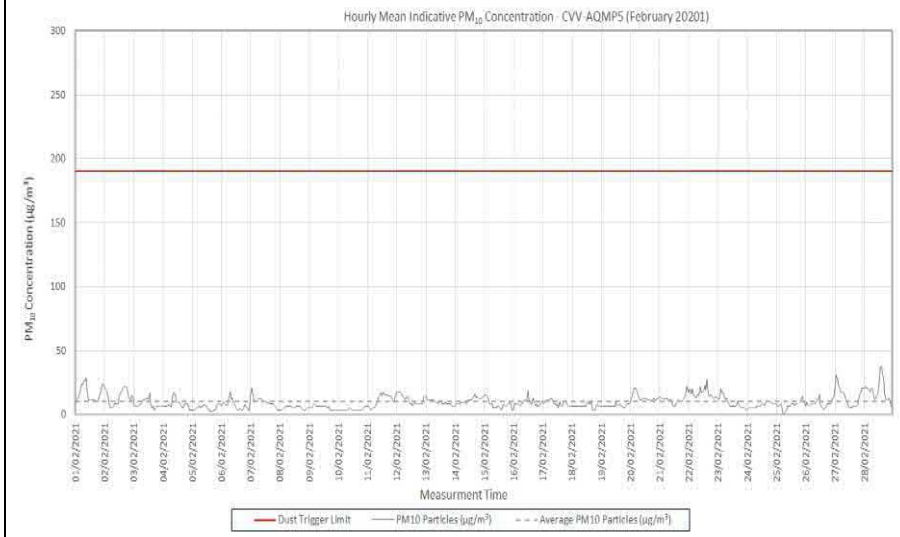
CVV-AQMP3



CVV-AQMP4



CVV-AQMP5



Appendix C – Air Quality Monitoring Results

Table 3: NO_2 monitoring locations around highways, NO_2 concentrations and monthly monitoring results with running mean for 2021 (µg/m^3)

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
HS2-000020BNU	Cowley Road sign-post at junction with Hillingdon Road	505492, 183926	45												45
HS2-000020BNV	High Street sign-post at junction with Pembroke Road	509439, 187117	Tube Missing												-
HS2-000020BNW	Sign-post on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	40												40
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40												40
HS2-000020BPL	Warren Road sign-post on corner of Swakeleys Road and Warren Road	506240, 185660	Tube Missing												-
HS2-000020BPN	Lamp post on B467	506767, 186224	36												36
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	Tube Missing												-

[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												40
HS2-000020BQP	Sign-post on Long Lane	507614, 184663	38												38
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39												39