

Air Quality and Dust Monitoring Monthly Report – February 2021 London Borough of Camden



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 Camden (LBC) during January and February 2021 respectively.
- 1.1.2 Figure 1 to Figure 4 in Appendix A indicate 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 LBC during December 2017 and is expected to be completed by July 2021. The next concurrent phase of construction works commenced in November 2019 and is expected to be completed by 2025. The current and planned worksites, include:

Costain Skanska joint venture (CSjv):

- Compound and Power Signal Box pre-demolition surveys and pile cap breakout;
- Site Office and Welfare at 110-122 Hampstead Road;
- Archaeological dig at St James' Gardens, groundworks and materials management and utilities diversion works. Continued scaffolding works for work site enclosure;
- Euston Street Walkden and Wolfson House demolition and groundworks; and
- Utilities ground excavation works on Harrington Street, Stephenson Way and North Gower Street.

Skanska Costain Strabag Joint Venture (SCSjv)

- Adelaide Road Vent Shaft – Site set up, limited concrete and utilities works and vegetation clearance;
- Vehicle Holding Area - excavation, groundworks and concrete slab works, new accommodation deployment;
- Site office and welfare on Granby Terrace / Hampstead Road;
- Euston Scissor Cut – groundworks, piling operations and materials management;
- Euston Throat Retained Cut groundworks, utilities diversion works and materials management; and
- Hampstead Road Bridge – mobilisation and site setup.

Mace Dragados Joint Venture (MDjv)

Early works

- Final clear of plant and materials;
- Storage area for ITR materials during occupation and transport to ITR;
- Prepare and lay 6F2 material as platforms for GI equipment and compound; and
- Complete concrete footpaths access and one-way system.

ITR:

- Ground investigation (ground bearing testing);
- Concrete crossovers;
- Tree removal and clearing waste;
- Establish welfare compound and site set up; and
- Assist HS2 with tunnelling activities.

TSS:

- No works only occupation of welfare unit.

Tower Demolition:

- Diamond cored holes to establish depth position and integrity of existing piles; and
- Site set up.

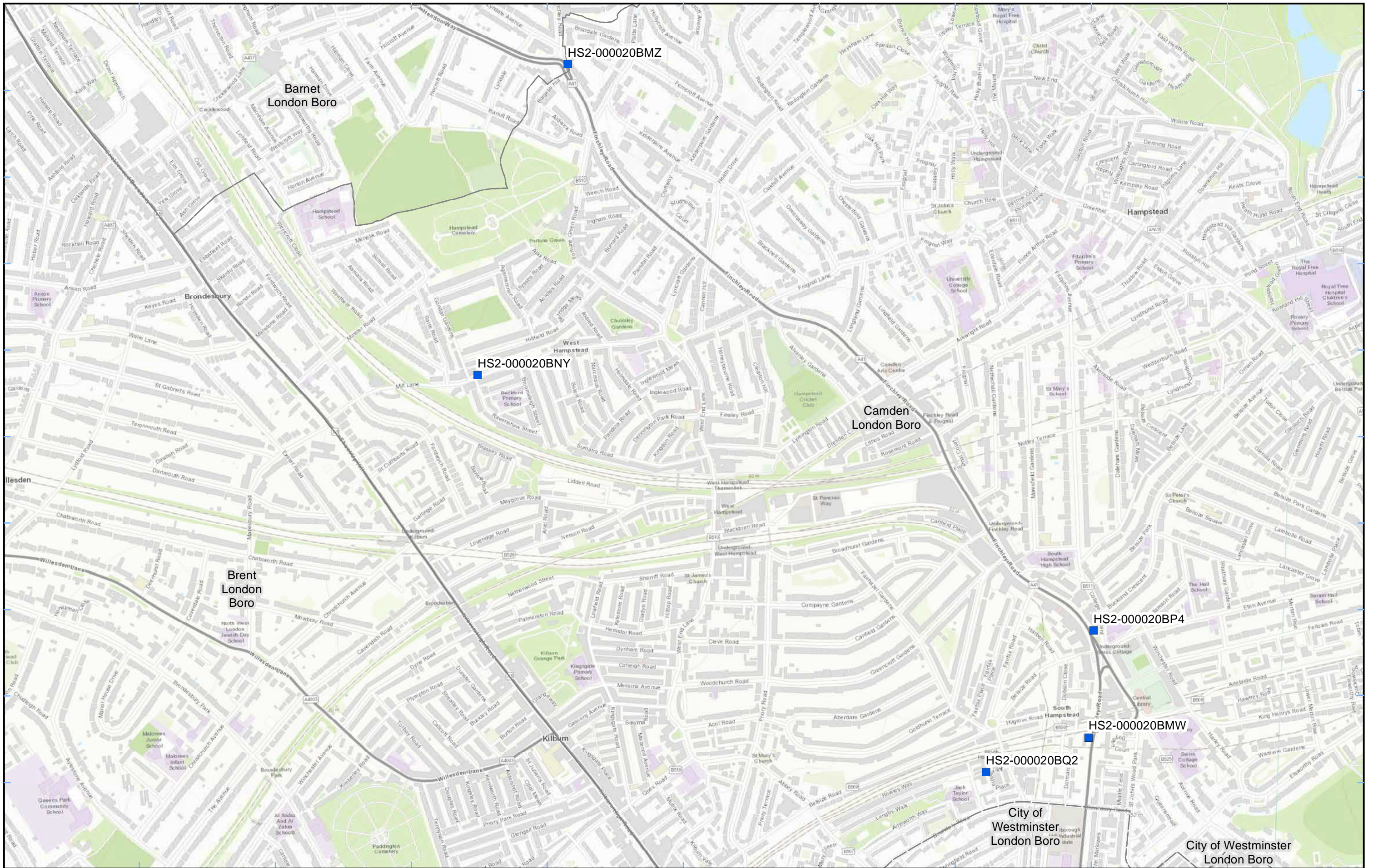
- 1.1.5 Twenty-three (23) dust monitors are installed around worksites, where demolition, groundworks and materials management are underway. These sites returned a low to high dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts 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 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.
- 1.1.8 There were five (5) dust trigger alerts recorded during the monitoring period (February 2021). However, following investigations it was noted that these triggers are not considered to be related to HS2 site activities, as no dusty activities were being undertaken at the time of the exceedances. Trigger alerts are presented in Appendix B, Table 2. All other results were in line with the expected ranges.
- 1.1.9 Data capture for monitor AQ017 was below 90% for the month of February 2021 due to a fault with the monitor over the course of the month. The technical issue associated with monitor

AQ011 and reported in January was confirmed to be a loose connection to the monitor's heater during a service in early February 2021.

- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at sixty-five (65) locations around highways within the LBC 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 2021 running mean.
- 1.1.13 There were (0) complaints received, relating to air quality during this reporting period (February 2021).

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 4: Worksites and monitoring locations within the LBC



Legend
 Diffusion Tube
 District Borough Unitary Boundaries

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Map Number
 Map Name
Monitoring Locations In LBC (Sheet 1)
London Borough of Camden

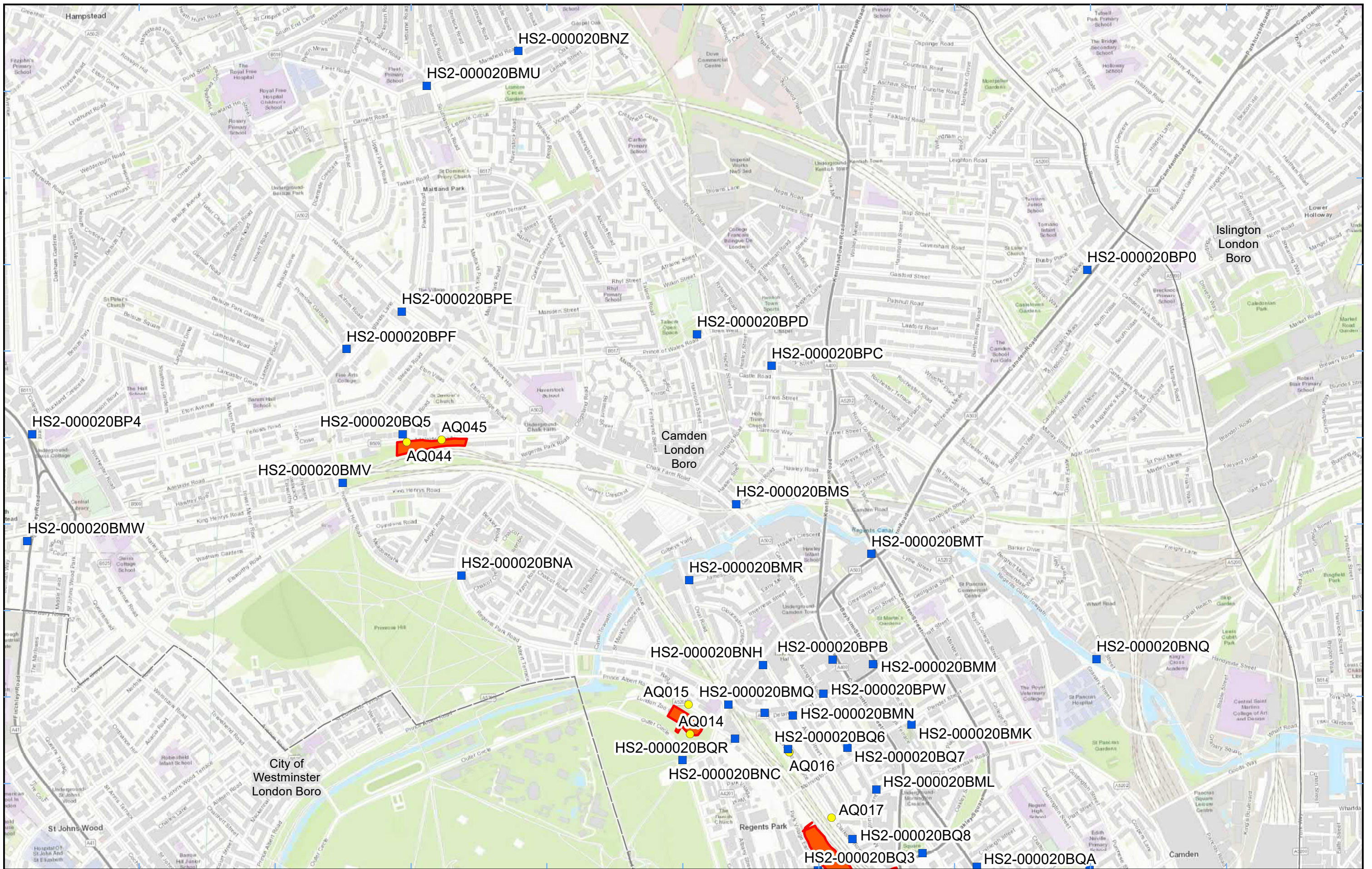
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Legend

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

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

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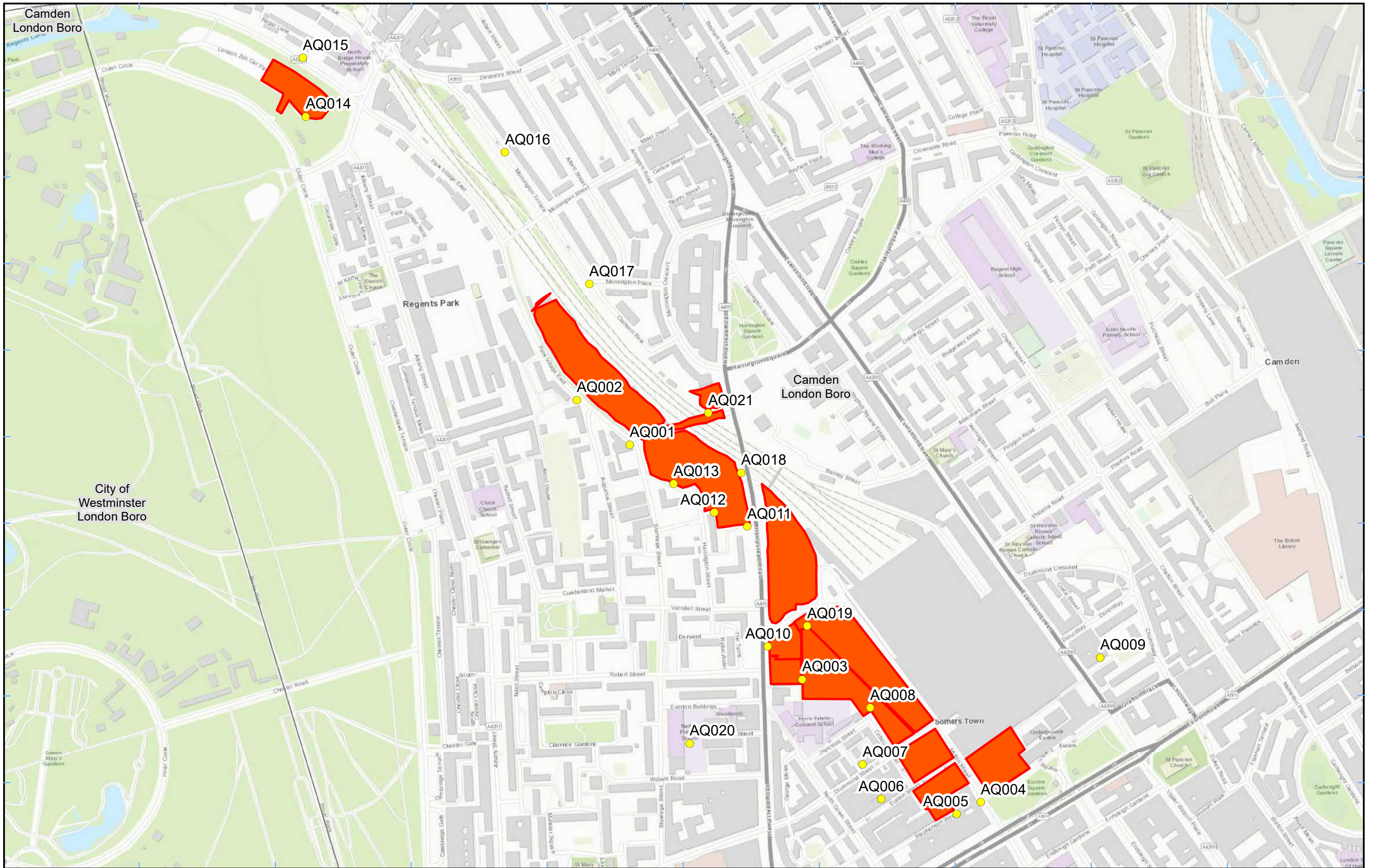
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Legend
 ● Dust Monitor □ District Borough Unitary Boundaries
 ■ Worksite

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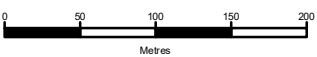
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 Map Name
Worksite and Dust Monitoring Locations In LBC (Sheet 3)
London Borough of Camden



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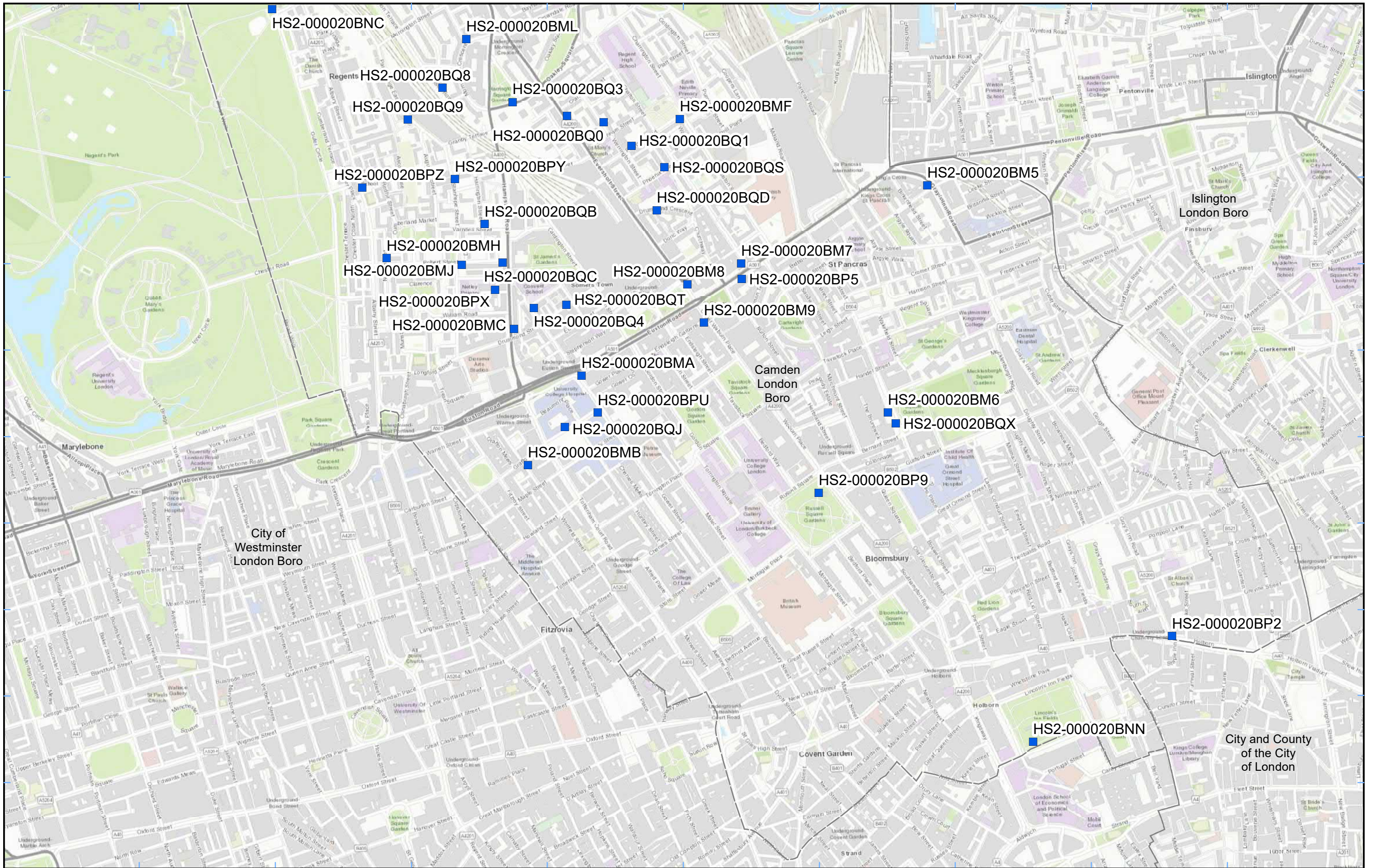
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 Metres







Legend
 ■ Diffusion Tube
 □ District Borough Unitary Boundaries

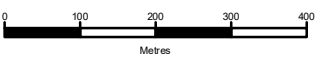
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Map Number
 Map Name
**DT Monitoring Locations In LBC
 (Sheet 4)**
 London Borough of Camden


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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 (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 (%)
AQ001	529022, 183040	Junction of Park Village East, Stanhope Street and Granby Terrace	M	Yes	N	17.7	1.1	144.1	0	100.0
AQ002	528945, 183105	Park Village East	M	Yes	N	14.6	0.8	101.9	0	100.0
AQ003	529273, 182698	St James' Gardens	M	Yes	N/A	14.0	1.2	95.2	0	92.3 ^a
AQ004	529533, 182519	Melton Street	H	Yes	N/A	13.5	1.1	75.0	0	100.0
AQ005	529498, 182502	Stephenson Way	H	Yes	N/A	16.1	1.2	104.5	0	100.0
AQ006	529388, 182524	Euston Street	H	Yes	N/A	13.1	1.2	76.6	0	100.0
AQ007	529361, 182574	Drummond Street	H	Yes	N/A	10.8	0.8	65.3	0	100.0
AQ008	529372, 182657	Cobourg Street	H	Yes	N/A	13.7	1.2	90.9	0	100.0
AQ009	529707, 182730	Eversholt Street	H	Yes	N/A	18.1	1.1	133.7	0	100.0
AQ010	529223, 182746	Hampstead Road South	M	Yes	N/A	26.9	2.5	146.7	0	100.0
AQ011	529193, 182921	Hampstead Road	M	No	N	23.3	2.1	196.5	1	91.5

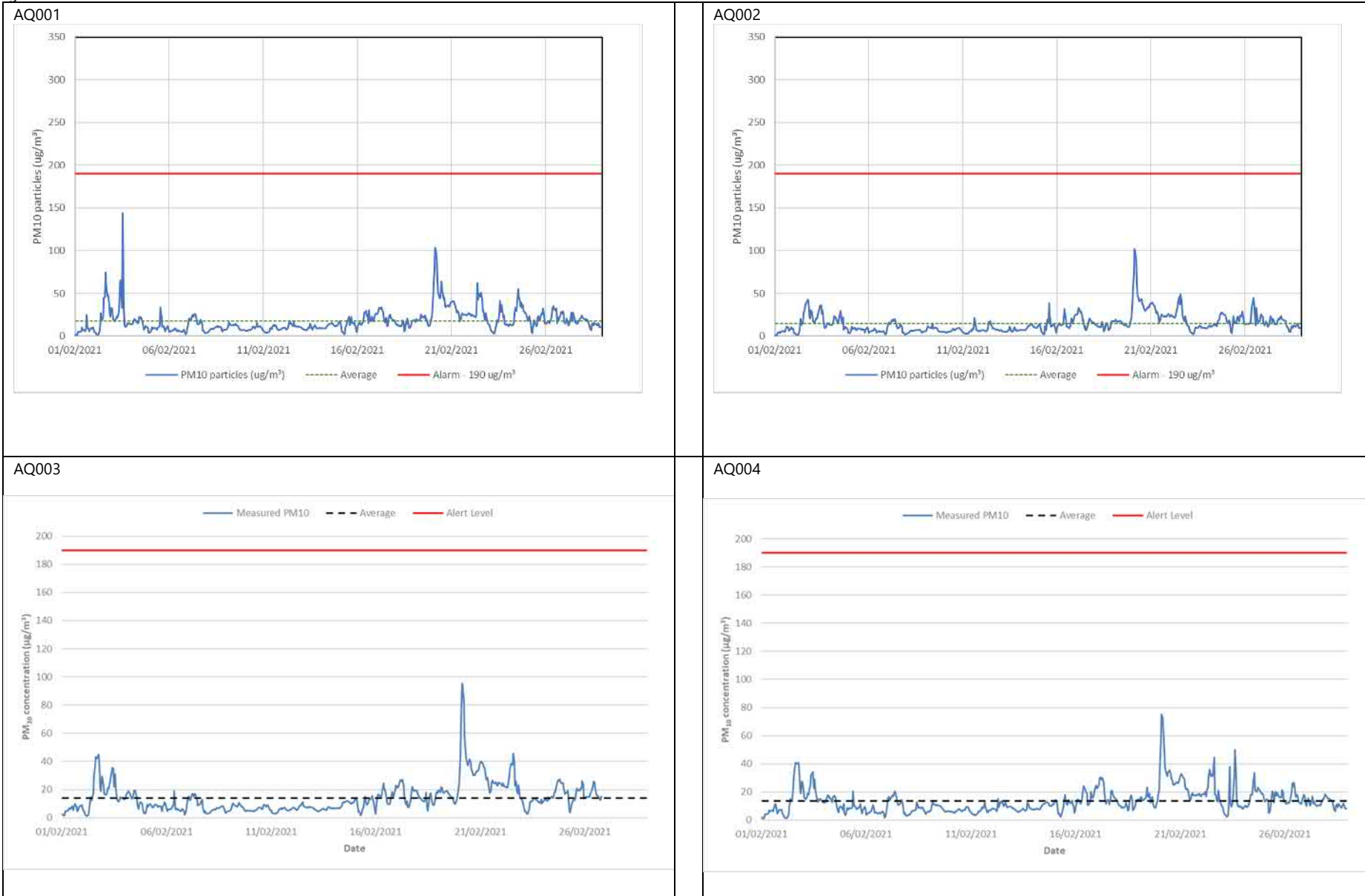
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ012	529145, 182941	Rear of Coniston House	M	Yes	N	17.4	1.4	127.5	0	100.0
AQ013	529086, 182983	Regents Park Estate	M	Yes	N	27.6	2.3	292.9	1	100.0
AQ014	528550, 183518	Vehicle Holding Area	L	Yes	N	15.7	0.1	118.2	0	100.0
AQ015	528546, 183604	Prince Albert Road	L	Yes	N	16.1	0.8	108.9	0	100.0
AQ016	528840, 183466	Mornington Terrace North	M	Yes	N	9.5	0.6	53.0	0	100.0
AQ017	528963, 183274	Mornington Terrace South	M	Yes	N	10.5	0.8	43.3	0	65.6
AQ018	529184, 182999	Hampstead Road North	M	Yes	N	10.9	0.7	63.4	0	100.0
AQ019	529280, 182776	Park Village East (North)	M	Yes	N	12.8	0.8	86.0	0	100.0
AQ020	529109, 182605	Netley School	n/a	Yes	N/A	12.5	1.1	77.8	0	99.9
AQ021	529136, 183086	Site compound at the Junction of Hampstead Road & Granby Terrace Bridge.	M	Yes	N	15.6	1.3	97.8	0	100.0
AQ044	527725, 184369	Adelaide Road Vent Shaft (west)	M	Yes	N	11.2	0.5	94.9	0	98.4
AQ045	527826, 184375	Adelaide Road Vent Shaft (east)	M	Yes	N	21.8	1.1	234.2	3	99.1

^a Loss in data capture due to a modem issue preventing transmittal of data.

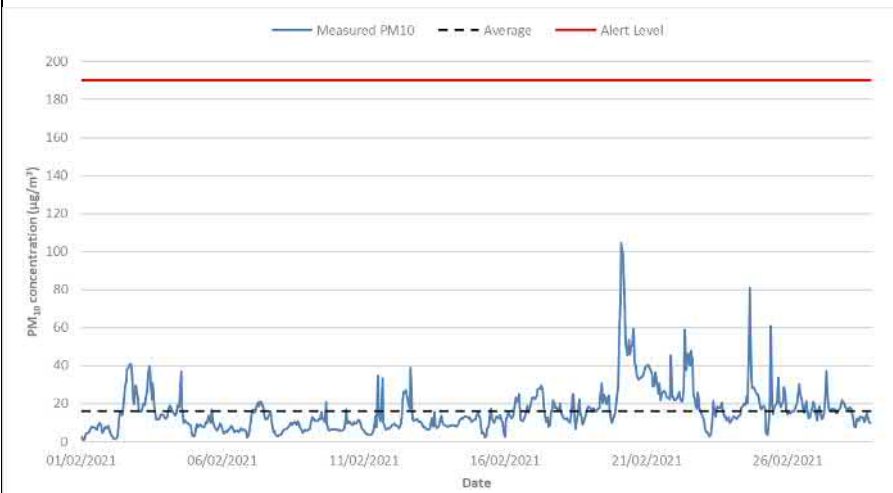
Table 2: Summary of exceedances of trigger level in January 2021

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ011	03/02/2021 09:01 -10:00: 196.5 µg/m ³	Power to the monitor's internal heater was confirmed to be faulty for the duration of January and beginning of February. The data levels were very erratic and not comparable to the other 5 monitors nearby and around the ETRC site (AQ012, AQ013, AQ021, AQ018 and AQ001) which were all measuring levels within the expected range, especially in light of the continued wet, damp weather. It is considered the triggers are due to moisture in the inlet and false readings as the heater was not working.	The monitor was serviced on 14 th January but the heater was not fixed until the 9 th February 2021.
AQ013	24/02/2021 11:01-12:00: 292.9 µg/m ³	A webserver failure during February meant that the trigger was not received by the site team at the time. A subsequent investigation did not identify anything out of the ordinary that hadn't been happening on site prior to or after the trigger i.e. piling and ground works across the ETRC site. The other 4 monitors nearby and around the ETRC site (AQ011, AQ012, AQ021, and AQ001) were all measuring levels within the expected range. Weather conditions had dried for a period in February, but ground conditions remained damp and unlikely to cause a trigger. It is considered the trigger may have been due to accumulated loose debris within the monitor's inlet and a 'false' reading.	The site team will maintain vigilance as to the need for dust suppression across the site. The webserver was replaced and the monitor serviced at the beginning of March 2021.
AQ045	17/02/2021 06:00-07:00: 209.0 µg/m ³ 17/02/2021 07:00-08:00: 234.2 µg/m ³ 28/02/2021 07:00-08:00: 219.5 µg/m ³	The triggers were received before works had commenced on site. Weather and ground conditions were also damp. It is considered the triggers were due to power loss to the monitor when the hybrid battery working overnight swapped back to the daytime generator. The loss of power to the monitor would mean the internal heater and pump would not have been working properly. Moisture in the inlet would then have caused a 'false' trigger.	The monitor was serviced at the beginning of March. In addition, ways of reducing the power load on the overnight battery were explored in order to reduce the likelihood of power loss happening again.

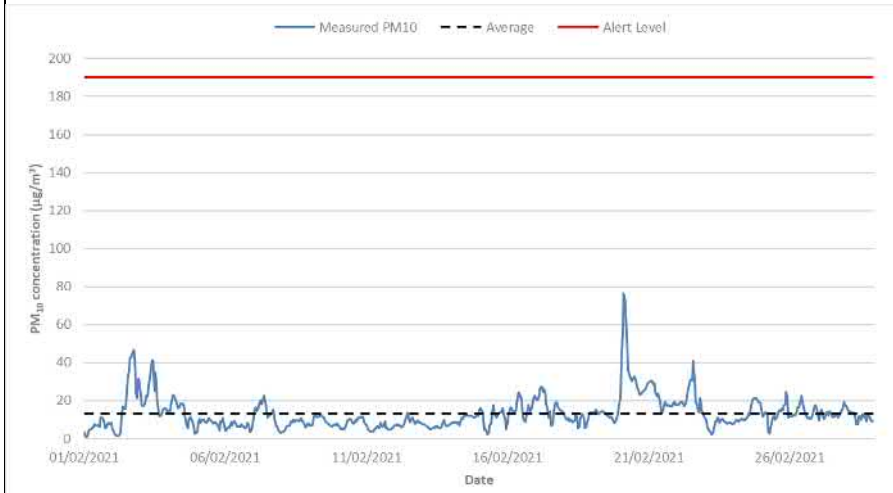
Figure 5: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors



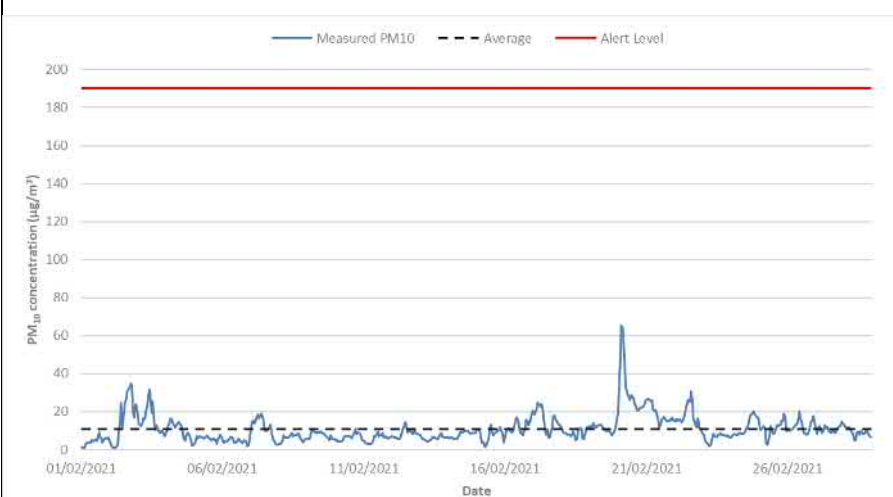
AQ005



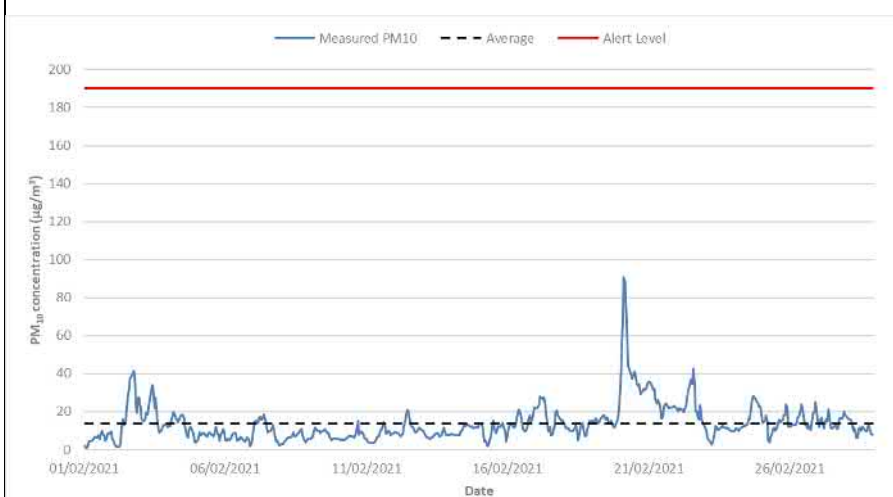
AQ006



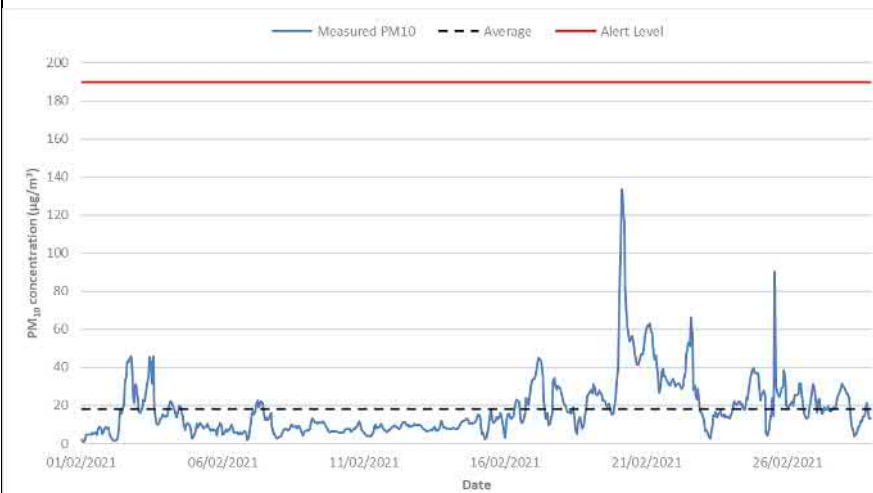
AQ007



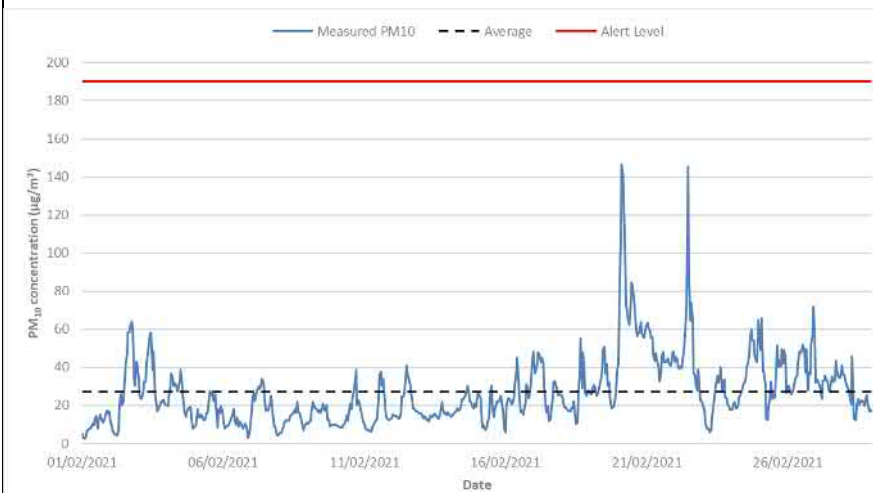
AQ008



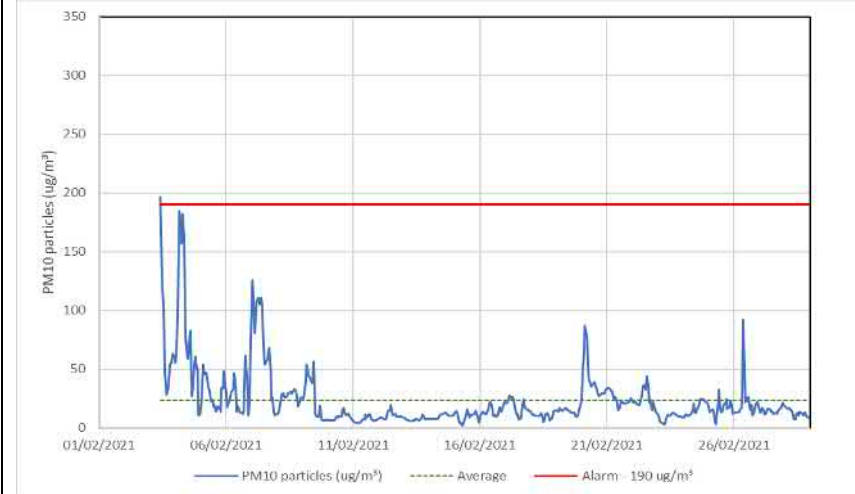
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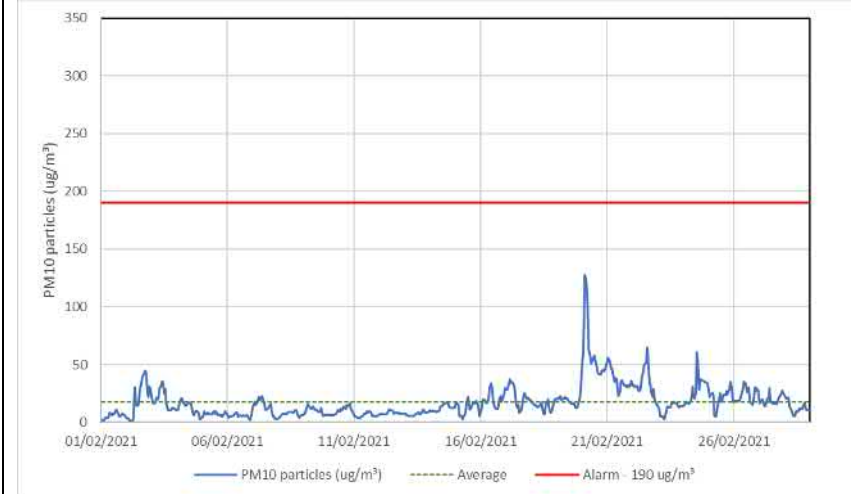
AQ010

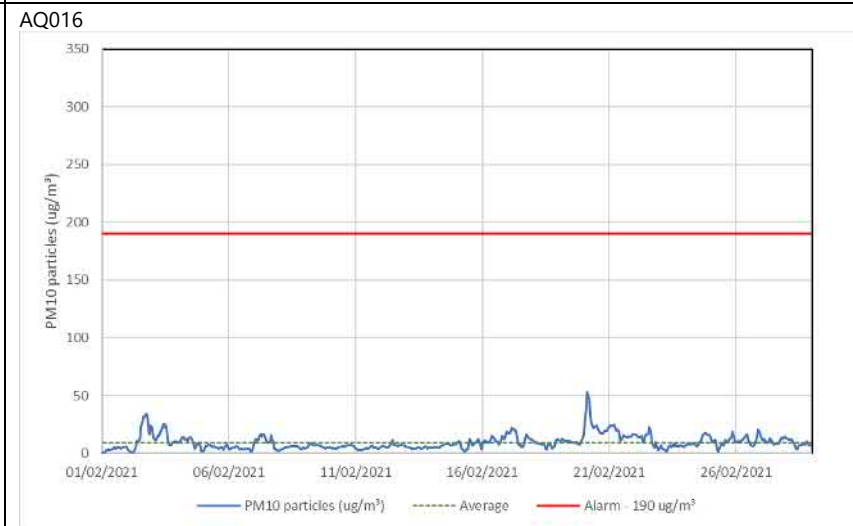
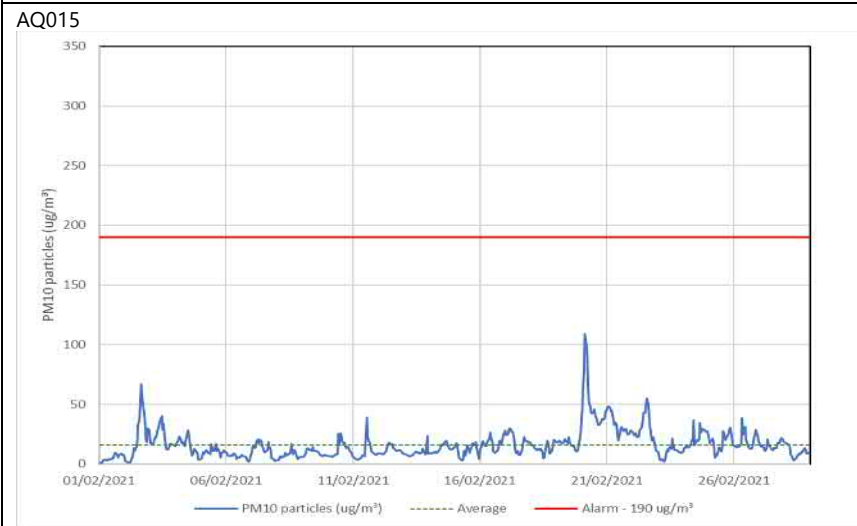
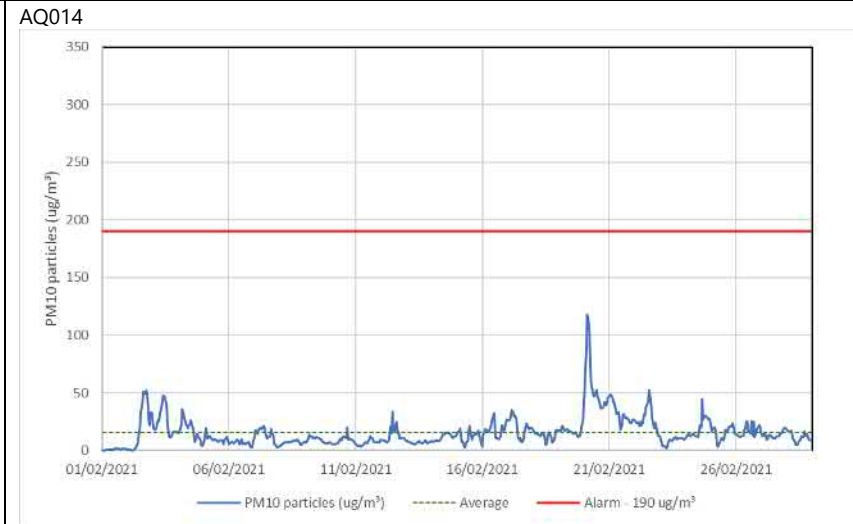
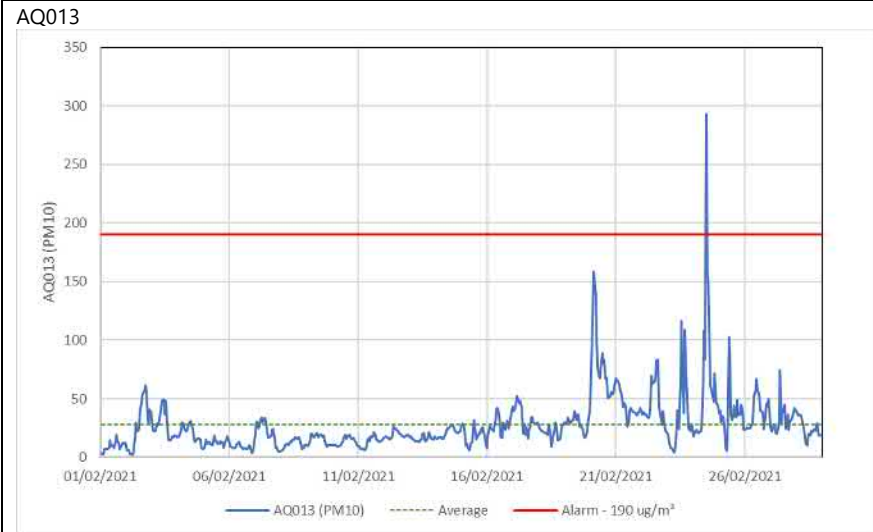


AQ011

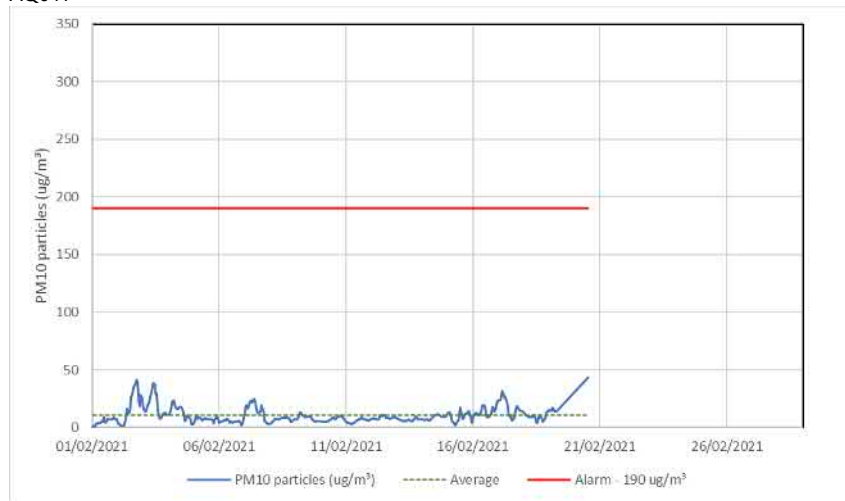


AQ012

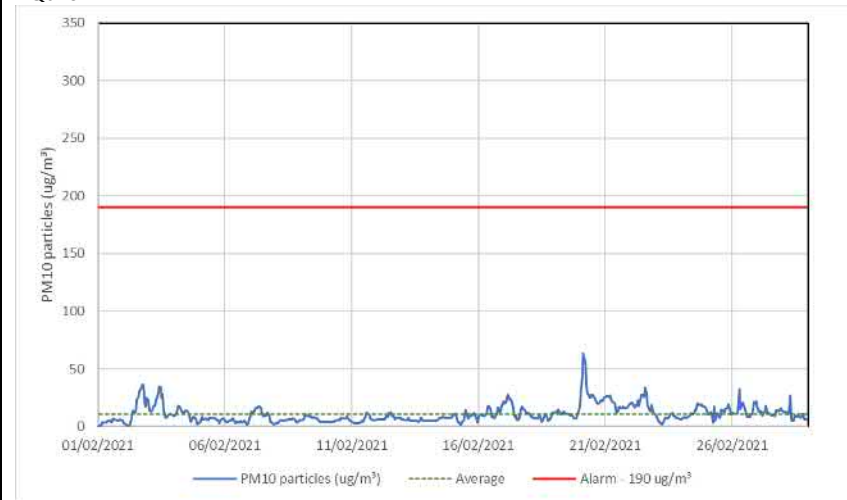




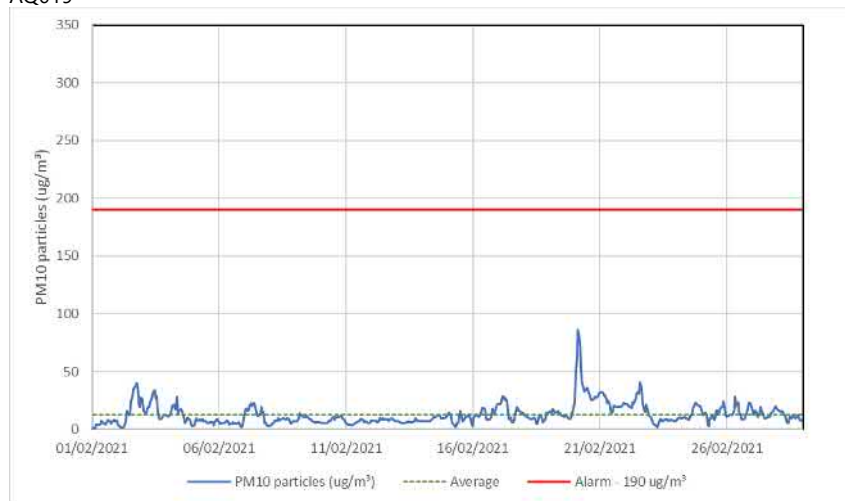
AQ017



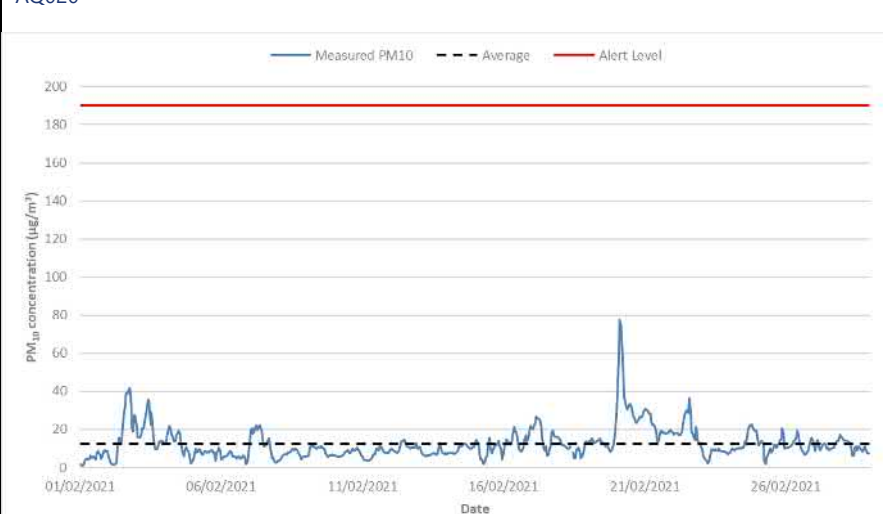
AQ018



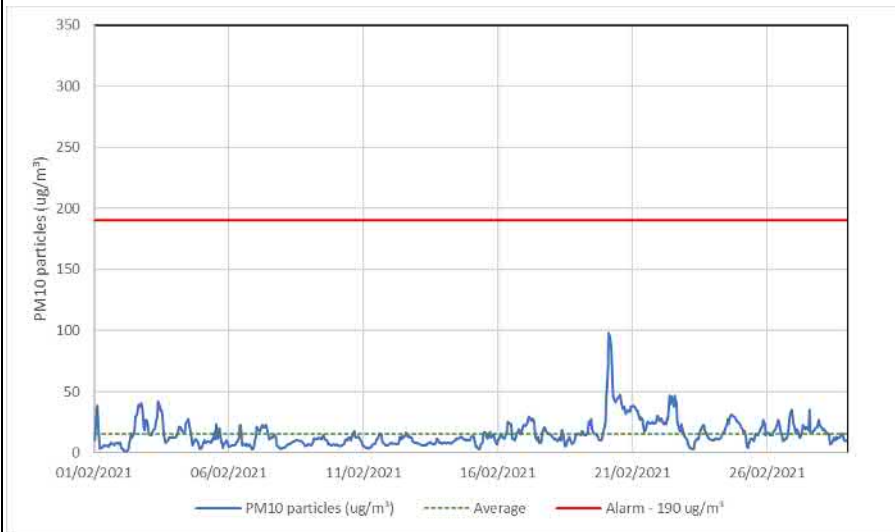
AQ019



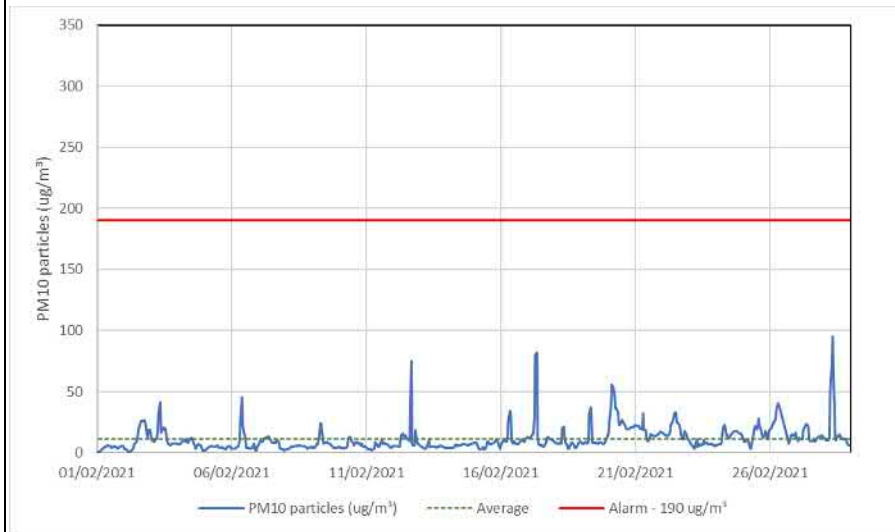
AQ020



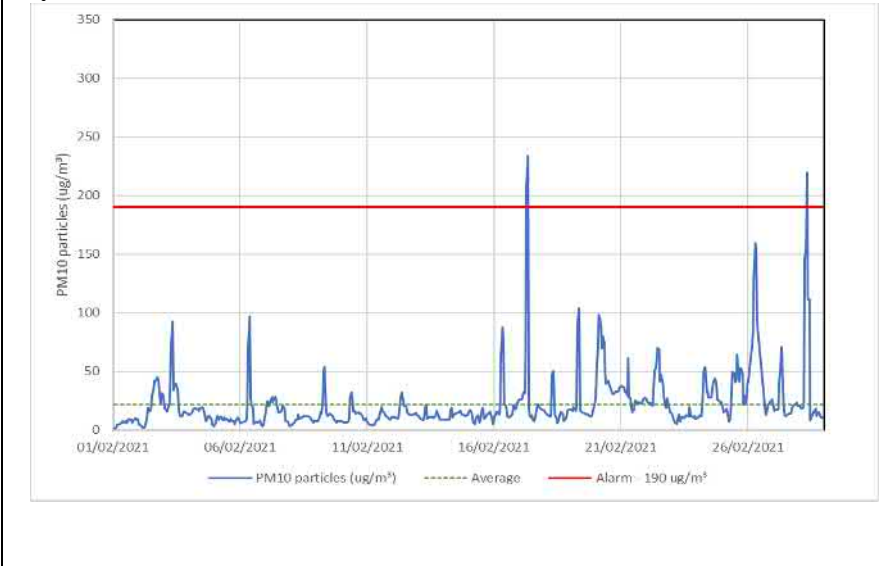
AQ021



AQ044



AQ045



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
HS2-000020BM5	Junction of St Chad's Street and Grays Inn Road	530436, 182929	50												50
HS2-000020BM7	Chalton Street	529894, 182702	53												53
HS2-000020BM8	Junction of Euston Square and Grafton Place	529737, 182641	58												58
HS2-000020BM9	Junction of Endsleigh Gardens and Upper Woburn Place	529785, 182529	52												52
HS2-000020BMA	Junction of Euston Road and Gower Street	529429, 182375	53												53
HS2-000020BMB	Whitfield Street	529273, 182114	44												44
HS2-000020BMC	Hampstead Road	529232, 182511	68												68
HS2-000020BMF	Junction of Polygon Road and Ossulston Street	529715, 183123	38												38
HS2-000020BMH	Nash Street	528861, 182717	39												39
HS2-000020BMJ	Junction on Robert Street and Stanhope Street	529080, 182698	37												37

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
HS2-000020BMK	Junction of Plender Street and Bayham Street	529196, 183546	50												50
HS2-000020BML	Junction of Arlington Road and Mornington Crescent	529093, 183356	42												42
HS2-000020BMM	Junction of Bayham Street and Pratt Street	529084, 183722	57												57
HS2-000020BMN	Junction of Delancey Street and Albert Street	528850, 183573	Tube Missing												-
HS2-000020BMQ	Junction of Parkway and Delancey Street	528662, 183604	46												46
HS2-000020BMR	Junction of Oval Road and Jamestown Road	528548, 183967	39												39
HS2-000020BMS	Junction of Chalk Farm Road and Castlehaven Road	528685, 184188	50												50
HS2-000020BMT	Junction of Camden Road and Camden Street	529079, 184043	50												50
HS2-000020BMU	Junction of Southampton Road and Fleet Road	527783, 185407	40												40
HS2-000020BMV	Primrose Hill Road	527538, 184250	41												41
HS2-000020BMW	Junction of Finchley Road and Hilgrove Road	526619, 184081	50												50
HS2-000020BMZ	Junction of Finchley Road and Hendon Way	525102, 186042	Tube Missing												-
HS2-000020BNA	Junction of Regent's Park Road and Rothwell Street	527884, 183980	40												40

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ₁
HS2-000020BNC	Junction of Outer Circle and Gloucester Gate	528528, 183443	32												32
HS2-000020BNH	Junction of Parkway and Albert Street	528763, 183720	42												42
HS2-000020BNN	Lincoln's Inn Fields	530744, 181308	38												38
HS2-000020BNQ	Camley Street	529735, 183737	Tube Missing												-
HS2-000020BNI	Junction of Mill Lane and Hillfield Road	524839, 185136	48												48
HS2-000020BNZ	Mansfield Road	528050, 185508	38												38
HS2-000020BP0	Junction of Camden Road and Torriano Avenue	529708, 184871	52												52
HS2-000020BP2	Junction of Grays Inn Road and Holborn	531149, 181616	39												39
HS2-000020BPB	Camden High Street	528966, 183735	69												69
HS2-000020BPC	Castlehaven Road	528788, 184591	43												43
HS2-000020BPD	Prince of Wales Road	528571, 184683	39												39
HS2-000020BPE	Haverstock Hill	527710, 184749	44												44
HS2-000020BPF	Junction of Primrose Gardens and England's Lane	527549, 184640	43												43
HS2-000020BPU	Junction of Gower Street and Grafton Way	529476, 182267	Tube Missing												-
HS2-000020BPW	Junction of Delancey Street and Arlington Road	528939, 183637	39												39

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ₁
HS2-000020BPX	Netley Street	529177, 182625	44												44
HS2-000020BPY	Stanhope Street	529060, 182947	38												38
HS2-000020BPZ	Albany Street	528790, 182923	39												39
HS2-000020BQ0	Werrington Street	529493, 183113	38												38
HS2-000020BQ1	Polygon Road	529574, 183045	Tube Missing												-
HS2-000020BQ2	Alexandra Place	526320, 183980	37												37
HS2-000020BQ3	Harrington Square	529228, 183172	53												53
HS2-000020BQ4	Junction of North Gower Street and Starcross Street	529290, 182572	45												45
HS2-000020BQ5	Adelaide Road	527713, 184392	44												44
HS2-000020BQ6	Mornington Terrace	528836, 183474	38												38
HS2-000020BQ7	Arlington Road	529009, 183479	35												35
HS2-000020BQ8	Clarkson Row	529024, 183213	37												37
HS2-000020BQ9	Park Village East	528923, 183121	37												37
HS2-000020BQA	Eversholt Street	529386, 183132	55												55
HS2-000020BQB	Junction of Harrington Street and Varndell Street	529147, 182816	32												32
HS2-000020BQC	Junction of Robert Street and Hampstead Road	529199, 182704	47												47

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ₁
HS2-000020BQD	Drummond Crescent	529648, 182856	47												47
HS2-000020BQJ	Grafton Way	529380, 182225	47												47
HS2-000020BQL	Delancey Street	528768, 183581	46												46
HS2-000020BQR	Lamp post on Park Village East	528682, 183505	37												37
HS2-000020BQS	Opposite Maria fidelis school on Phoenix Road	529670, 182982	42												42
HS2-000020BQT	Drummond Street	529385, 182581	40												40
HS2-000020BQX	Lamp post on Brunswick Square	530344, 182236	45												45
HS2-000020BP4	Triplicate site on Finchley Road next to Swiss Cottage kerbside automatic monitoring station	526633, 184392	Tubes Missing												-
HS2-000020BP5	Triplicate site next to the Euston Road roadside automatic monitoring stations	529895, 182657	55												55
HS2-000020BP9	Triplicate site in Russell Square next to Bloomsbury urban background automatic monitoring station	530120, 182034	38												38