

Air Quality and Dust Monitoring Monthly Report – April 2021

Buckinghamshire Council



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 dust monitoring undertaken in the Buckinghamshire Council (BC) area during April 2021.
- 1.1.2 Figures 1 to 6 in Appendix A presents the current worksites together with the dust monitoring locations for April 2021.
- 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 BC during January 2020 and is expected to be completed by the end of September 2021. The current worksites at Colne Valley Viaduct (CVV) LTP1, Chalfont St Peter Vent Shaft, Amersham Vent Shaft, Chalfont St Giles Vent Shaft, Little Missenden Vent Shaft, Lower Bottom House Farm Lane and DC2J Haul Road and Compound site are presented in Appendix A, Figures 1 to 6. Activities for each worksite during April 2021 included:

Colne Valley Viaduct (CVV) LTP1:

- Utilities: Sections: B6 and B10;
- Affinity Water Access Road: drainage and pavement construction;
- DWSC Access road: drainage and pavement construction;
- DWSC Compound: compound operation and de-sanding compound;
- Haul road 29,150 - 29,400: civil works, finishing works and fencing;
- Haul road 28,220 - 29,200: earthworks, and drainage;
- Ground investigation works: GI works and overwater GI works;
- Cofferdam Sheet Piling: piling plant and support plant;
- INNS – River Colne to GUC: removal works;
- Permanent main piling works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pie break-down to prepare pile surface, grout curtain around viaduct pile groups maintenance plant;
- North Embankment Compound: compound operation;
- A412 Crossing Tarmac;
- A412 Crossings: finishing works and fencing;
- Thames water diversion;
- River Colne Realignment; and
- NYGB Re-alignment.

Chalfont St Peter Vent Shaft:

- Stockpile management at ventilation shaft site and management of temporary stockpile;
- Shaft Dewatering;
- Shaft excavation: mobilisation and site setup, break out temporary slabs, trim D-Wall construct capping beam excavation (first 25 m);
- All auxiliary plant 01-06;
- Post Treatment Injection works: dewatering;
- Emergency Site Surface Stabilisation Works; and
- Post Treatment Injection Works.

Amersham Vent Shaft:

- Grouting Pre-Treatment: drilling and grouting;
- Grouting Post-Treatment: drilling and grouting;
- Site installations;
- Erect Hoarding;
- Install storage, reinforcement, crane bases & workshops; and
- Excavate to shaft piling platform level (stage 1).

Chalfont St Giles Vent Shaft:

- General site activity: general plant;
- Earthworks: stockpile management;
- Ground pre and post treatment: drilling and grouting;
- D-wall works: excavation, de-sanding, mud treatment and concreting; and
- Water Treatment.

Little Missenden Vent Shaft:

- General Site Activity: general plant;
- Site Establishment: construct site access bell mouth, office establishment, piling platform, site roads formation level & other site facilities, install piling mat & other hardstanding, site roads and car parking, removal of satellite compound offices, welfare facilities & stores; and
- Earthworks: stockpile management.

Lower Bottom House Farm Lane:

- Earthworks including excavation, stockpiling, and material movement;
- Construction works, including new road haul road, topsoil strip, cut/fill placing and compaction, utility diversions, installations of ducting and drainage, lay CBGM, installation of 1 no. temporary bridge, road signage and landscaping; and
- Track out activities.

DC2J Haul Road and Compound site:

- Construction of a 4.6km long access road between Quainton and Greatmoor Sidings; and
- The construction of a satellite compound at the southern end of the access road.

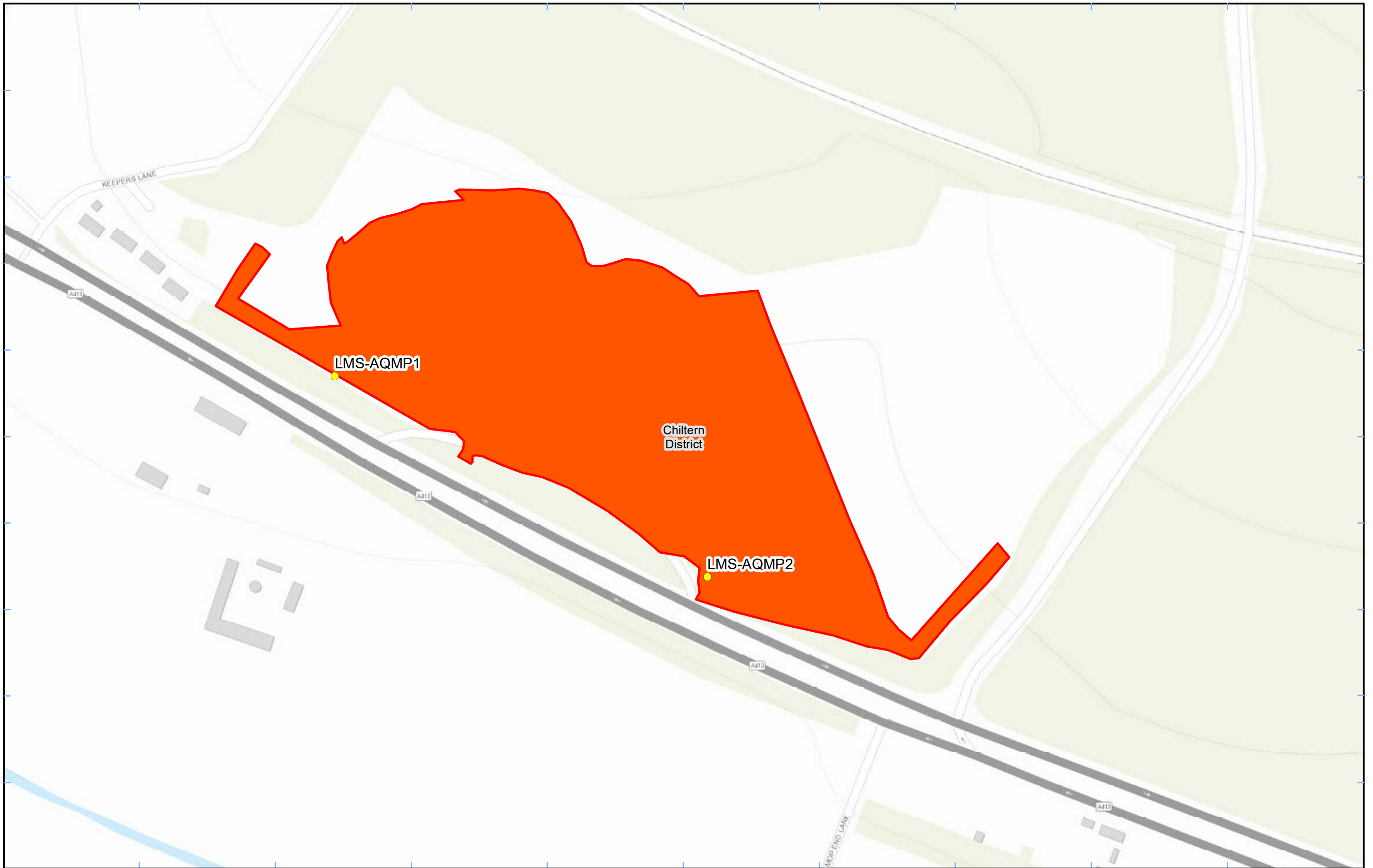
- 1.1.5 Fourteen (14) dust monitors are installed around the worksites, where demolition, earthworks, construction and trackout activities are underway. Two (2) are located at the CVV LTP1 compound, two (2) at the Chalfont St Peter worksite, two (2) at the Amersham worksite, two (2) at the Chalfont St Giles worksite, two (2) at the Little Missenden worksite, two (2) at Lower Bottom House Farm Lane site and two (2) located at the DC2J Haul Road and Compound worksite. Dust Risk Assessments for each worksite returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for April 2021 are presented in Appendix B, Table 2, together with a line chart of monthly data from each dust monitor presented in Figures 7 to 19. 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 two (2) dust trigger alerts recorded during the monitoring period (April 2021). Trigger alerts are presented in Appendix B, Table 3. All other results were in line with expected ranges.
- 1.1.9 Data capture for various monitors was below 90% for the month of April 2021, due to an ongoing power interruptions and intermittent monitor connection issues with the supplier's remote software. All concerned issues have now been resolved.
- 1.1.10 Table 1 provides a summary of the complaint information related to dust or air quality received during this reporting period, together with the findings of any related investigations.

Table 1: Summary of complaints received during April 2021

Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
HS2-21-41700-C	Colne Valley Viaduct (CVV) LTP1	Reported increased dust pollution in area on 01/04/21.	Contractor advised the complainant that there is more construction activities ongoing as work on the railway viaduct commence – and that all mitigation set out in the Code of Construction Practise will continue to be implemented to control dust emissions. The Contractor further advised where these works are in relation to the stakeholder, noting that the private quarry (north of the road) is in closer proximity to the resident.
HS2-21-41799-C	DC2J Haul Road and Compound site	Three complaints received on 16/04/21 and 30/06/21 reporting annoyance due to general dust levels in air.	A response has been provided highlighting the mitigation measures that are being used and encouraged stakeholder to report it when they believe these are not working. Furthermore, advised that monitors are in place to monitor the dust and pollution levels, and ensure effective mitigation is in place.
HS2-21-41870-C			
HS2-21-41871-C			

Appendix A – Worksite and Dust Monitoring Locations

Figure 1 to Figure 6: Current monitoring locations and worksites within Buckinghamshire Council



Legend
 Dust Monitor District Borough Unitary Boundaries
 Worksite

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Map Number
 Map Name
**Worksite and Monitoring Locations
 In Little Missenden, BC (Sheet1)**
 Buckinghamshire Council

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Legend

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number	
Map Name	<p style="text-align: center;">Worksite and Monitoring Locations In Amersham, BC (Sheet 2)</p> <p style="text-align: center;">Buckinghamshire Council</p>



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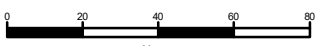
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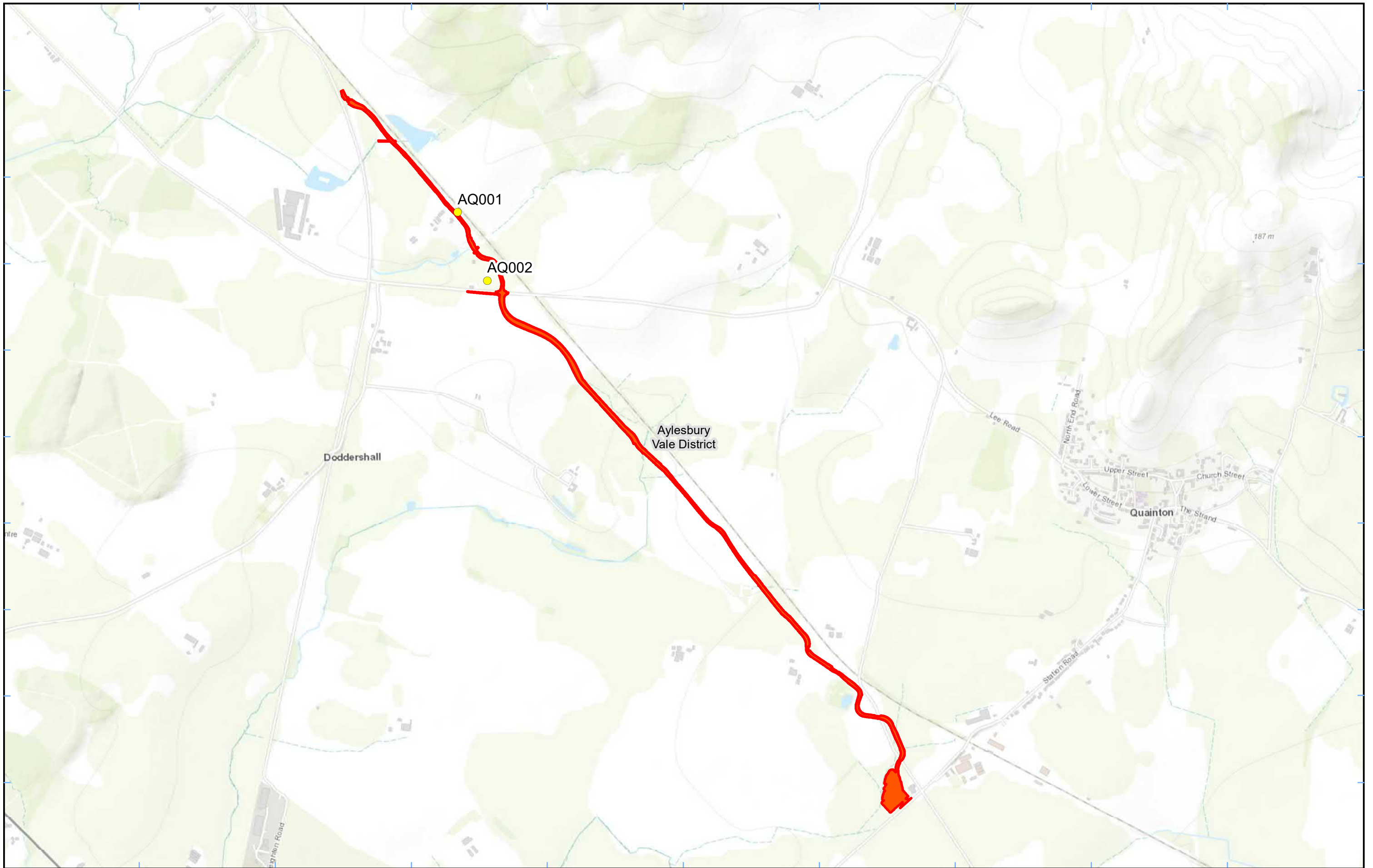
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 Worksite

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Map Number
 Worksite and Monitoring Locations
 In DC2J, BC (Sheet 3)
 Buckinghamshire Council

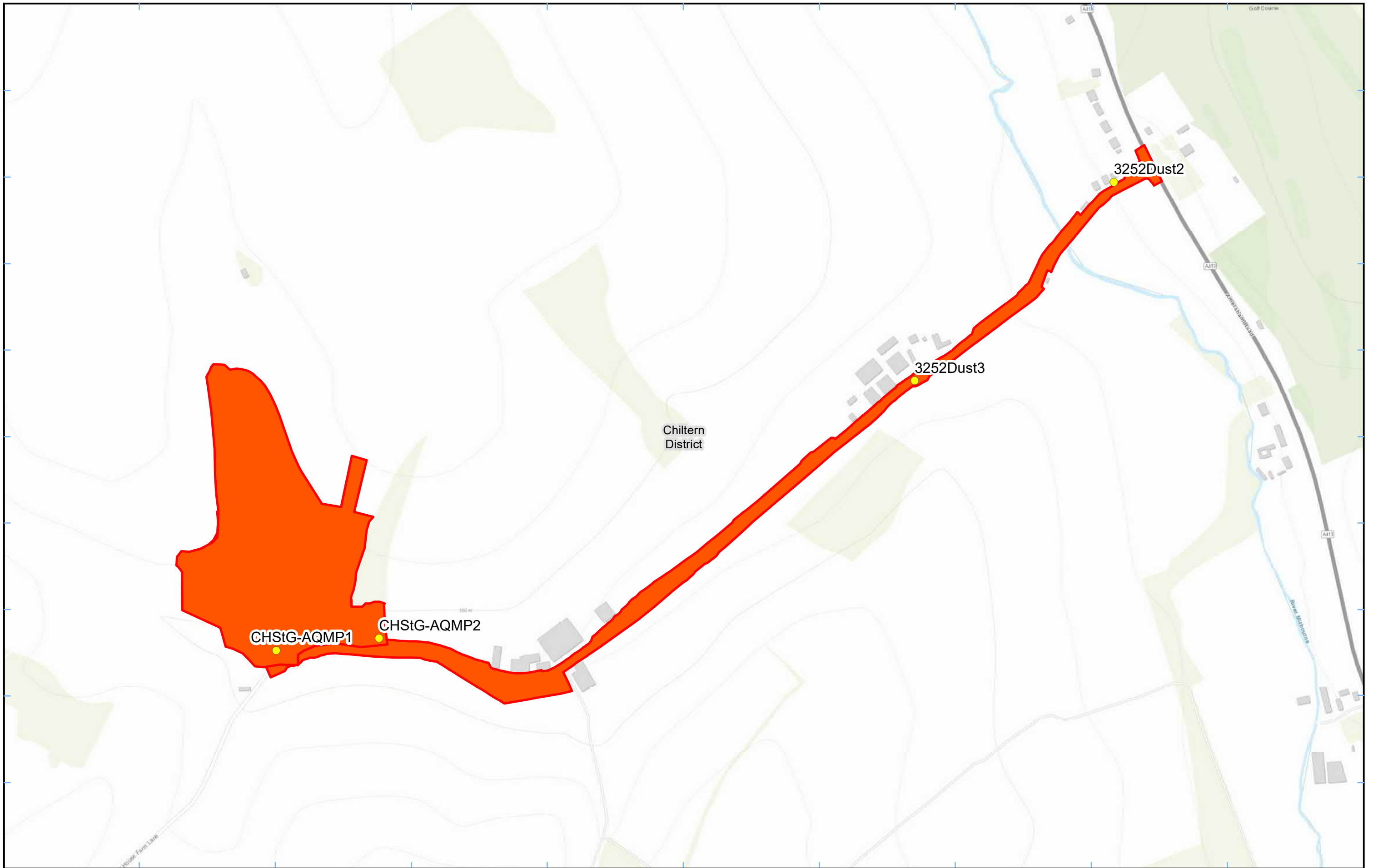
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 Worksite
 District Borough Unitary Boundaries

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Map Number
 Worksite and Monitoring Locations
 In Chalfont St Giles, BC (Sheet 4)
 Buckinghamshire Council

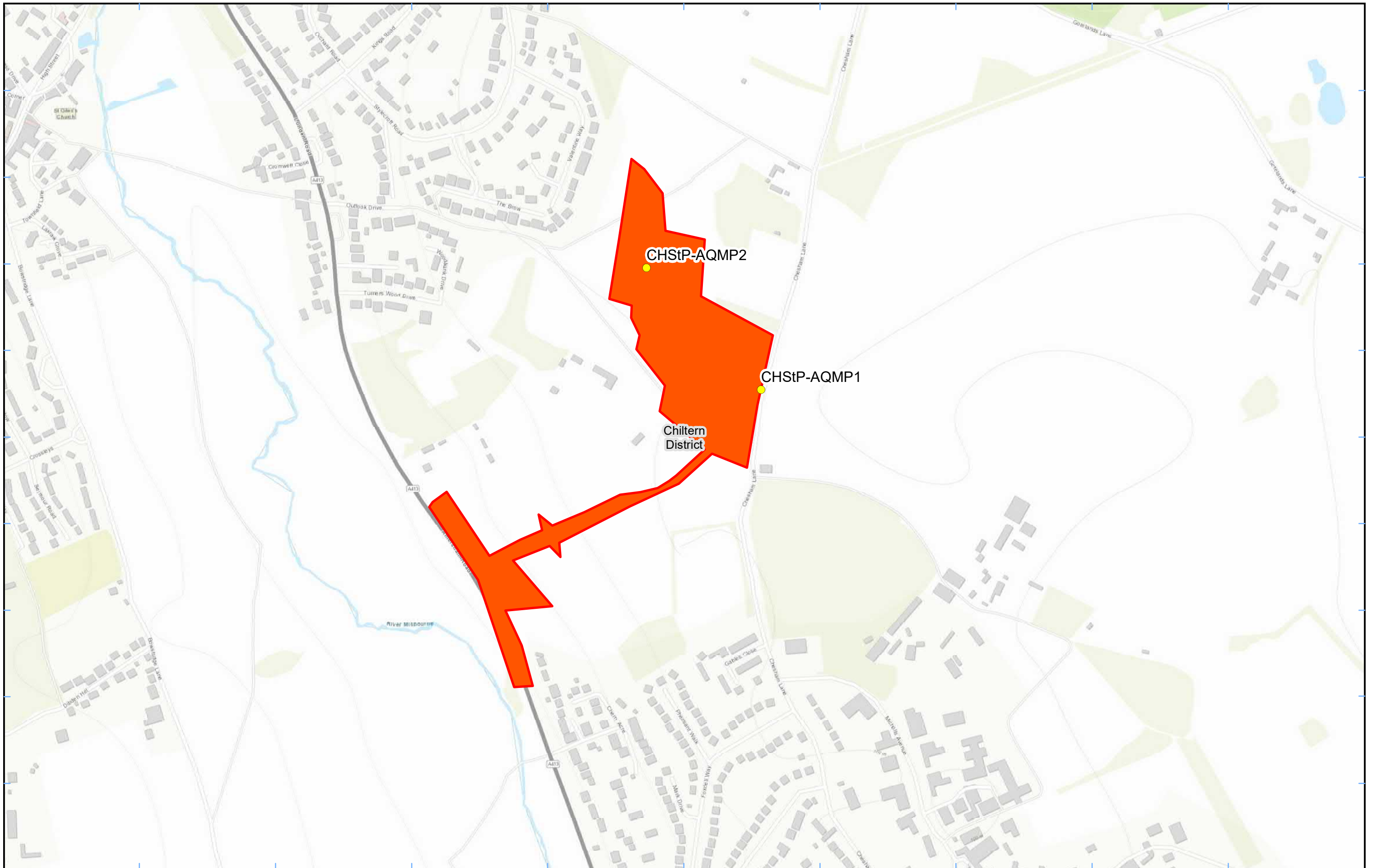
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- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number
 Worksite and Monitoring Locations
 In Chalfont St Peter, BC (Sheet 5)


Buckinghamshire Council



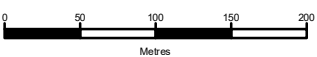
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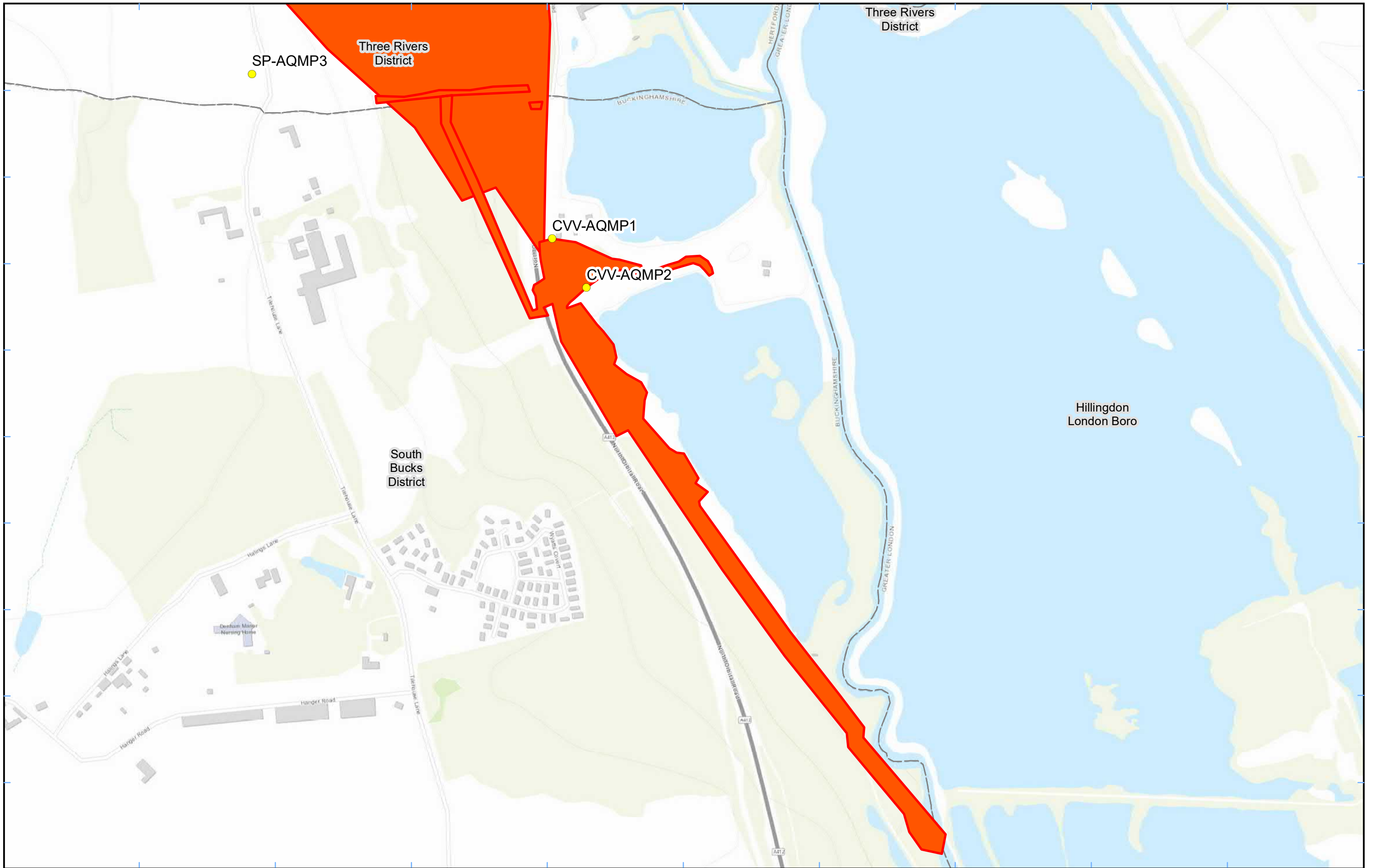


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Date: 06/05/21



Legend
 ● Dust Monitor □ District Borough Unitary Boundaries
 ■ Worksite

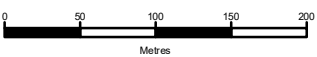
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Map Number
 Worksite and Monitoring Locations
 In Colne Valley Viaduct, BC (Sheet
 6)
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Appendix B – Dust Monitoring Results

Table 2: Dust monitoring locations and April 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 (%)
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	M	Yes	Yes	9.1	2.0	81.0	0	85
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	M	Yes	Yes	9.2	2.0	84.0	0	85
CHStP-AQMP1	500118, 193105	On the eastern boundary of the site with Chesham Lane	M	Yes	Yes	10.0	2.0	160.0	0	94
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	9.5	2.0	86.0	0	70
AMER-AQMP1	495418, 196738	On the north-eastern boundary of Amersham	M	Yes	Yes	9.1	2.0	89.0	0	78
AMER-AQMP2	495222, 196559	On the south-western boundary of Amersham	M	Yes	Yes	8.7	1.0	83.0	0	84
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	M	Yes	Yes	10.3	2.0	79.0	0	85
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	M	Yes	Yes	8.9	2.0	80.0	0	84
LMS-AQMP1	493190, 198848	On the south-west of the site	M	Yes	Yes	9.7	2.0	84.0	0	54
LMS-AQMP2	493407, 198731	On the south-east of the site	M	Yes	Yes	8.1	3.0	48.0	0	35

3252Dust2	498390, 195434	On the boundary with Elm Tree Cottage, Bottom House Farm Lane	M	Yes	No	-	-	-	-	0
3252Dust3	498100, 195145	On the site boundary opposite Lower Bottom House Farm	M	Yes	No	8.6	1.2	42.7	0	100
AQ001	471524, 221329	Woodlands Farm	M	Yes	No	9.8	1	861	1	100
AQ002	471654, 221030	Woodlands Cottage	M	Yes	No	9.4	1	285	1	100

Table 3: Summary of trigger alerts recorded during the monitoring period (March 2021)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ001	07/04/2021 18:01 – 19:00: 861 µg/m ³	The reason for this exceedance is unclear. Works on DC2J have not reached this point yet with the surrounding area occupied by HS2 being grassland. The monitor borders a property which has a barrel fire/burner bin close by, although it cannot be confirmed whether this was lit at the time of the exceedance.	Mitigation continues to be deployed across the works in line with the Code of Construction Practice.
AQ002	15/04/2021 10:01 – 11:00: 285 µg/m ³	The reason for this exceedance is unclear as conditions on site have remained unchanged throughout the month – there is a potential that dust from the neighbouring road from passing vehicles caused the exceedance. A road sweeper has been made available to deal with any potential mud on road from the works.	

Figure 7: Continuous dust 1-hour mean indicative PM₁₀ concentration for CVV-AQMP1 for April 2021

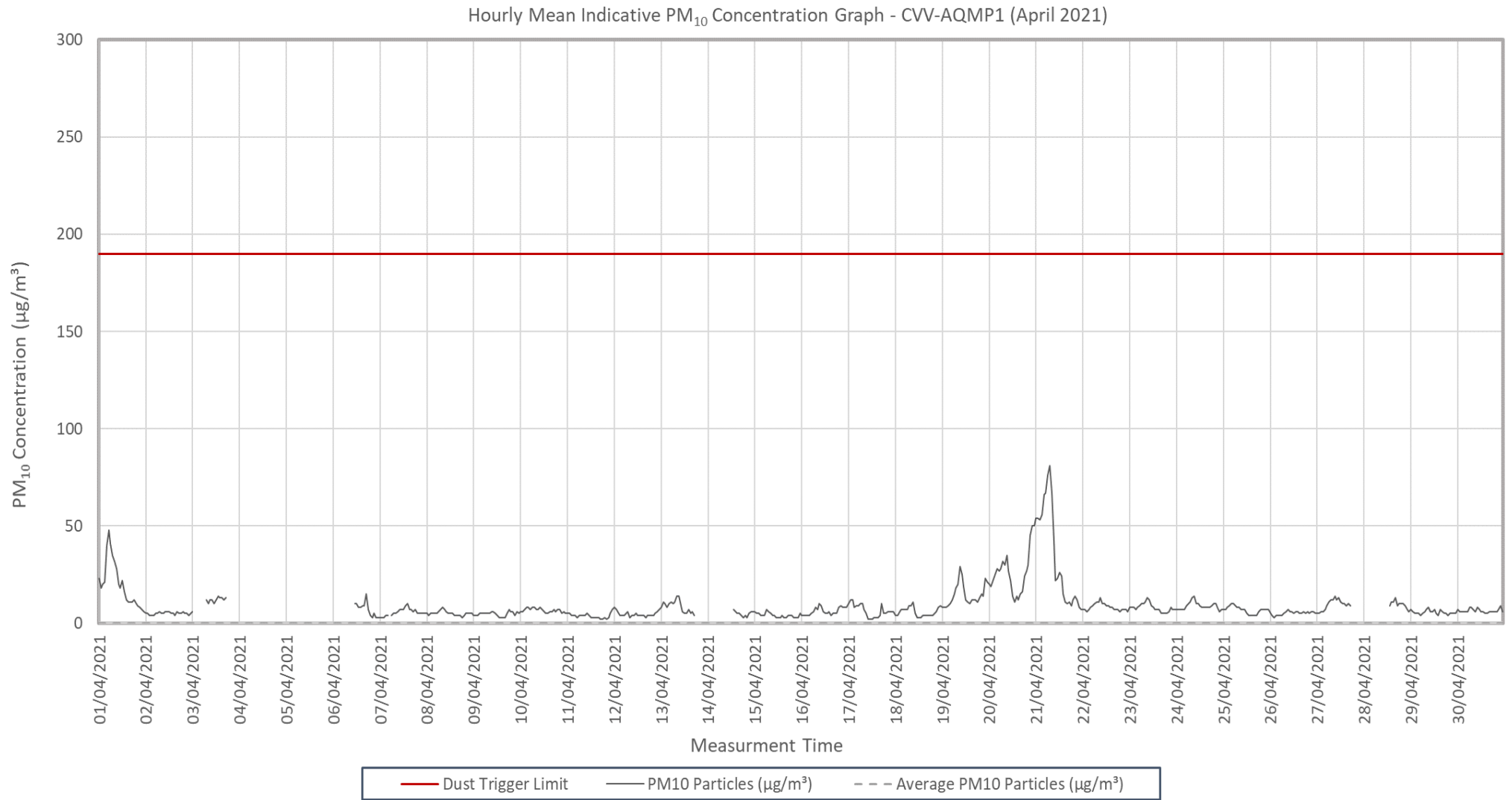


Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentration for CVV-AQMP2 for April 2021

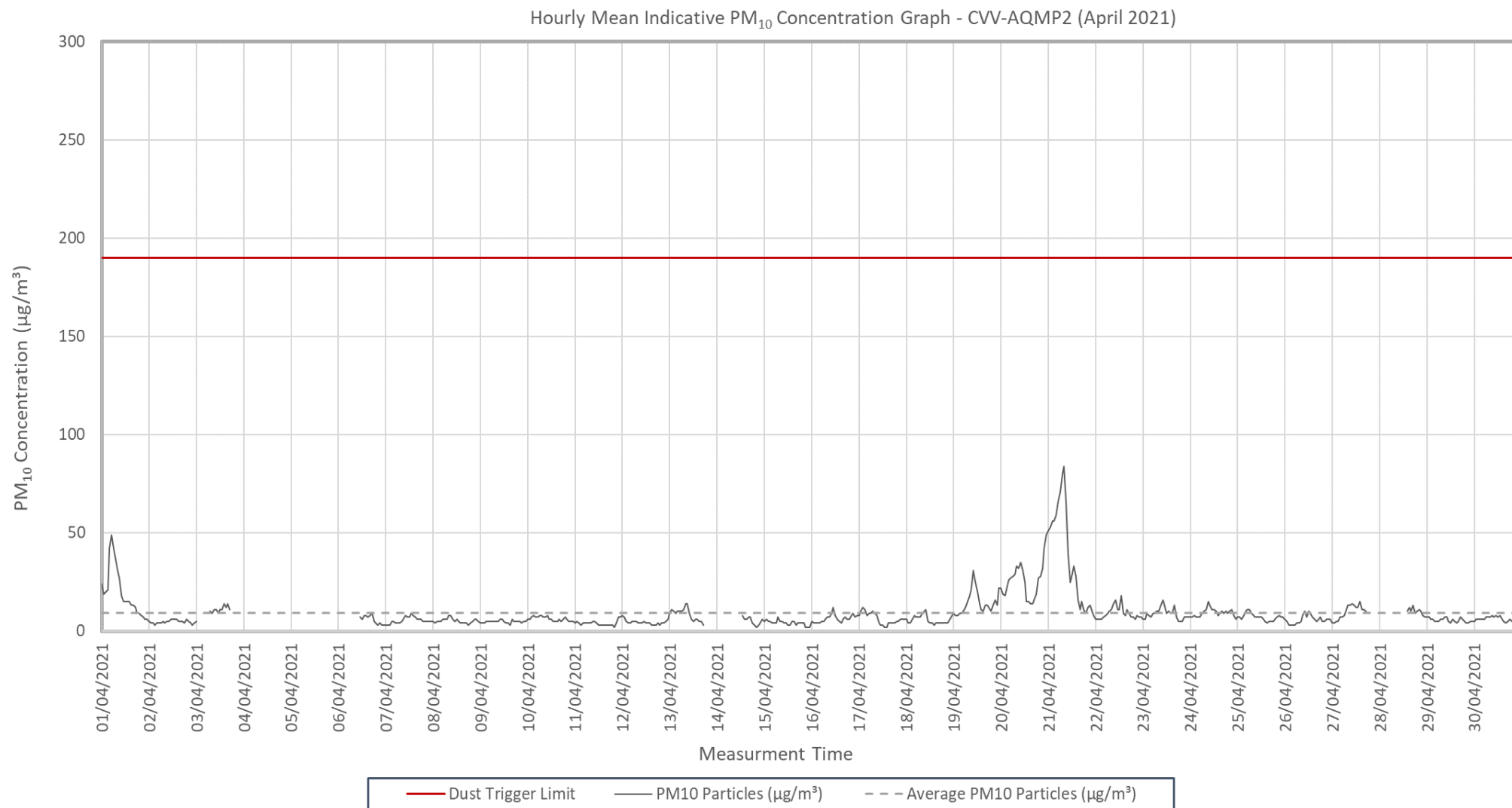


Figure 9: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP1 for April 2021

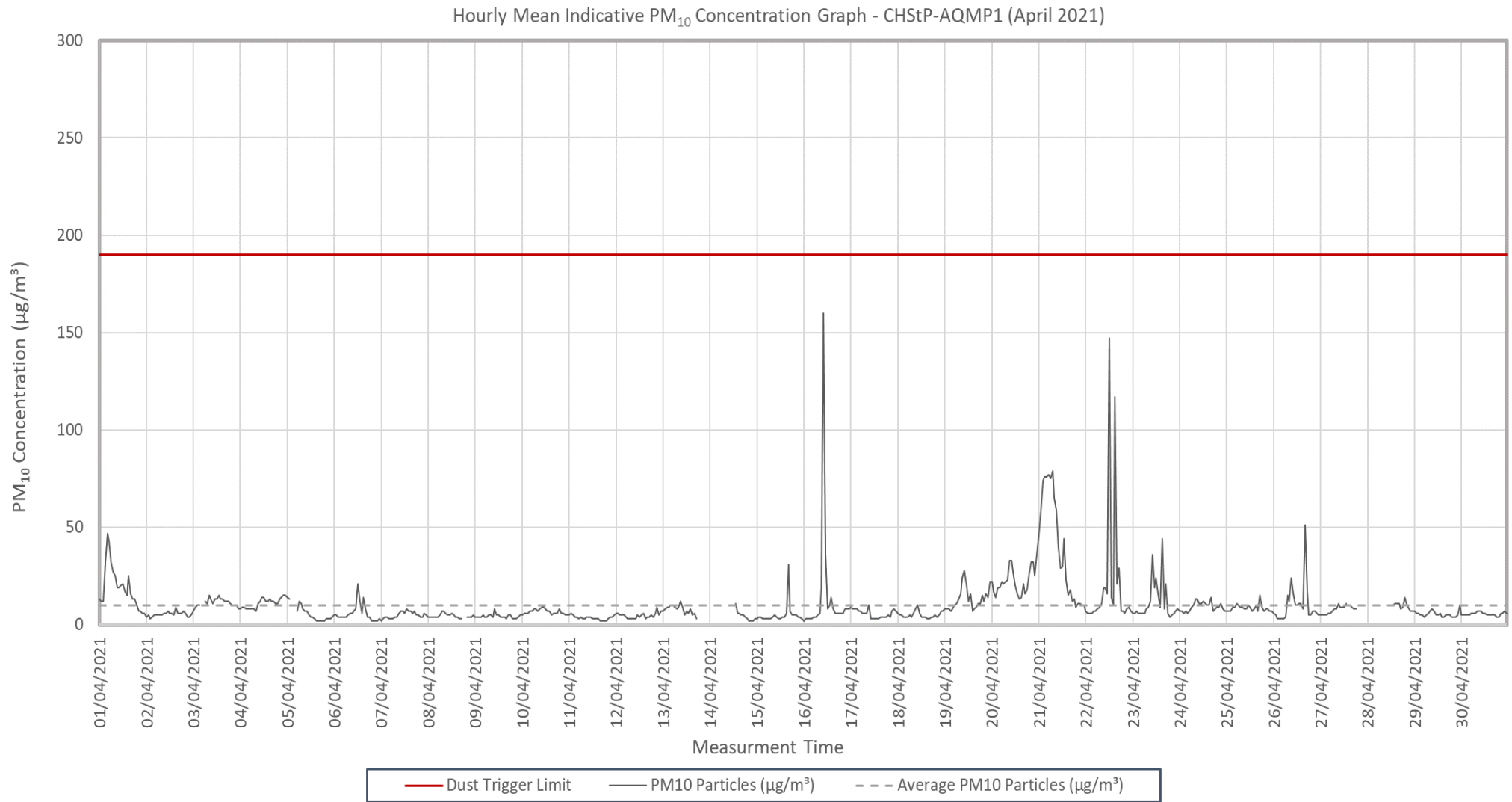


Figure 10: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP2 for April 2021

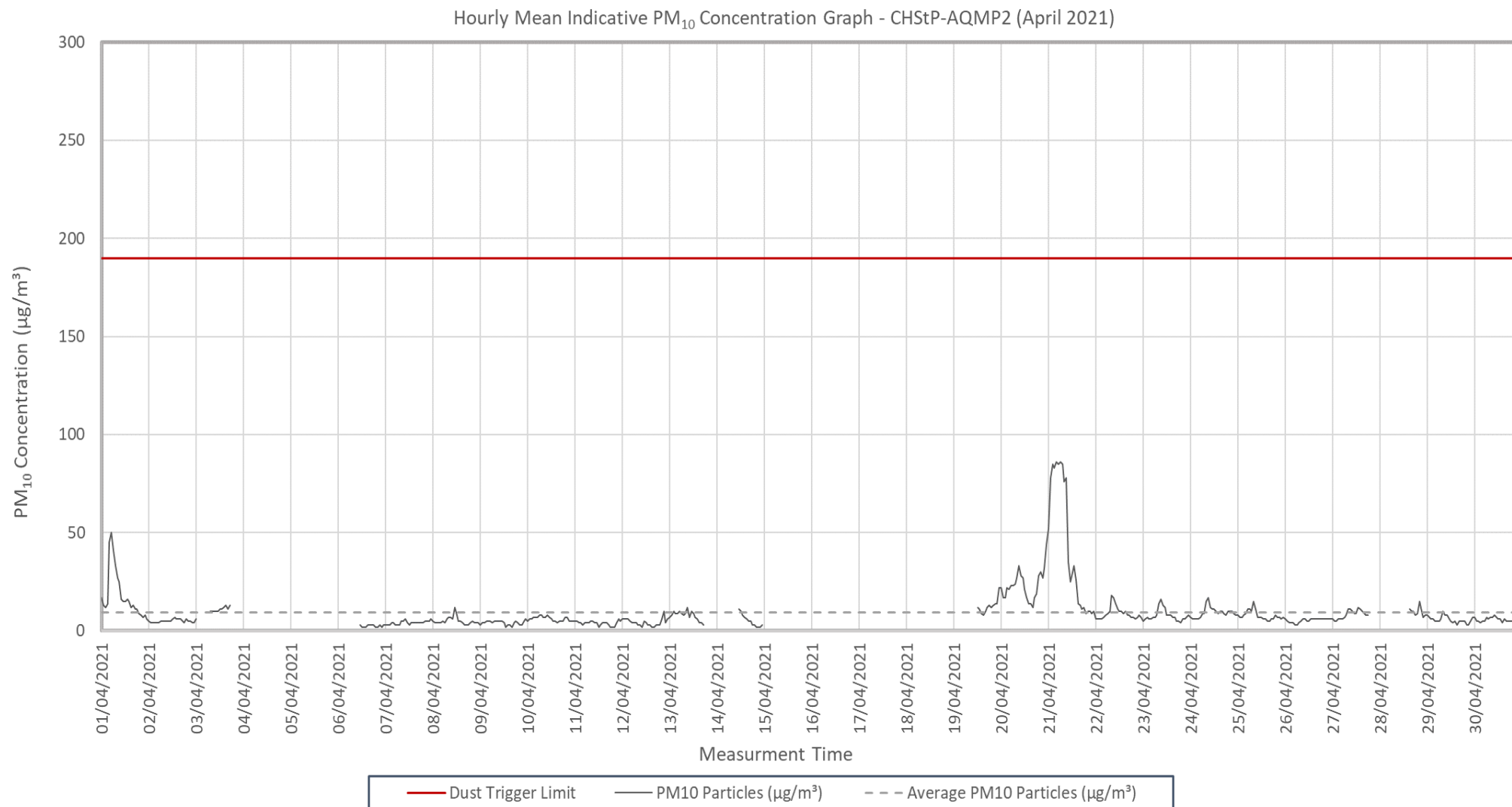


Figure 11: Continuous dust 1-hour mean indicative PM₁₀ concentration for AMER-AQMP1 for April 2021

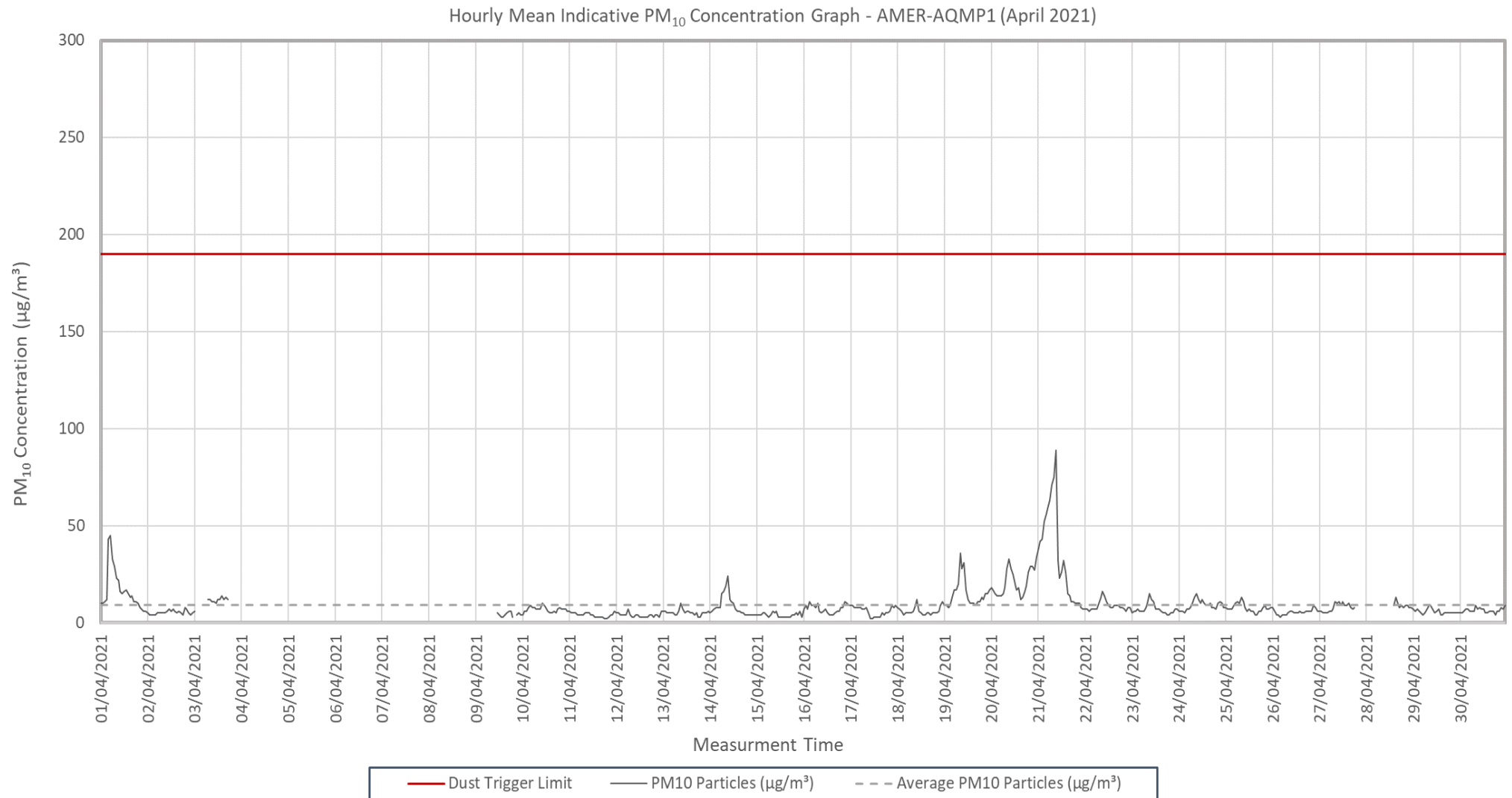


Figure 12: Continuous dust 1-hour mean indicative PM₁₀ concentration for AMER-AQMP2 for April 2021

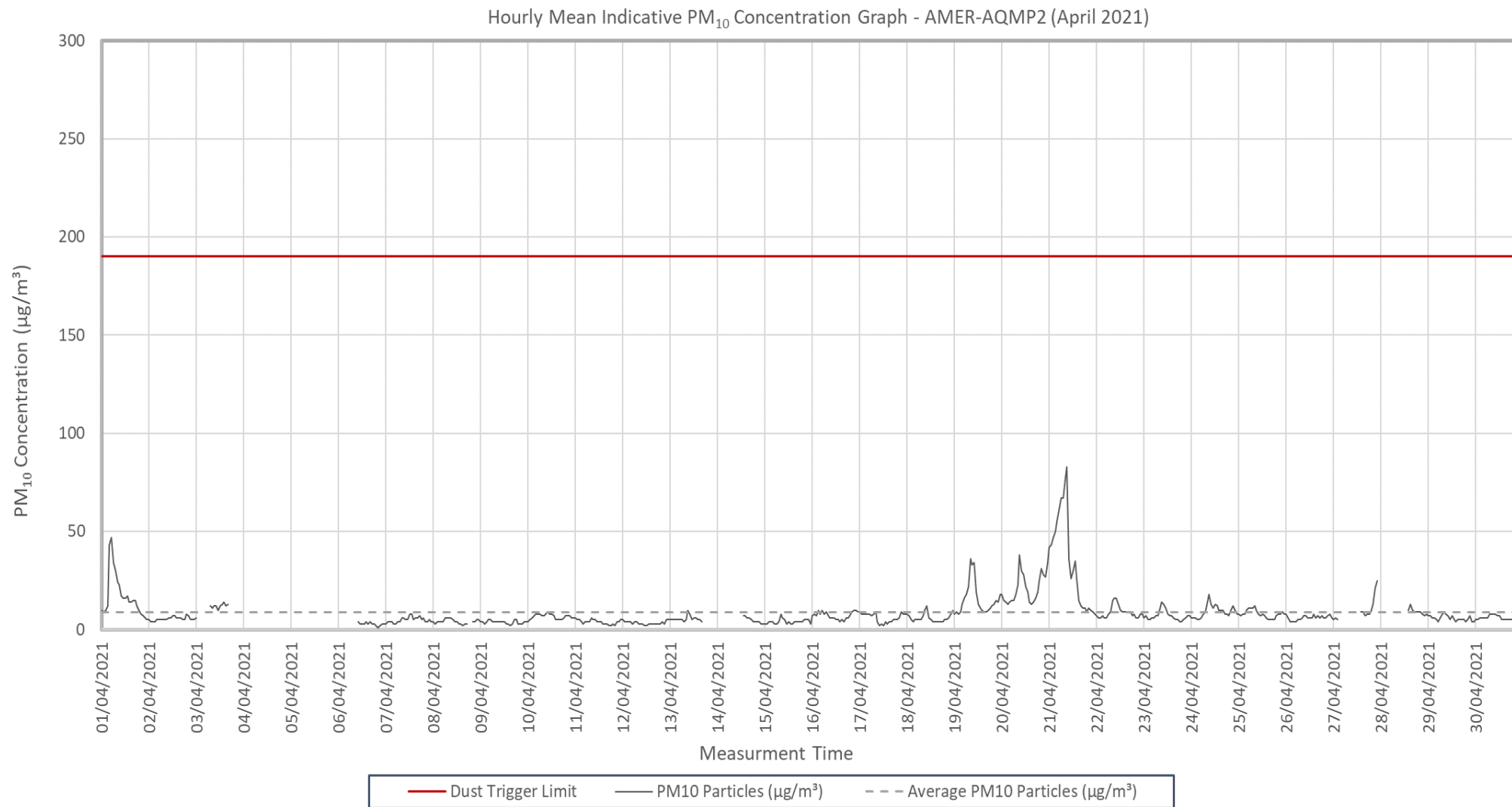


Figure 13: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP1 for April 2021

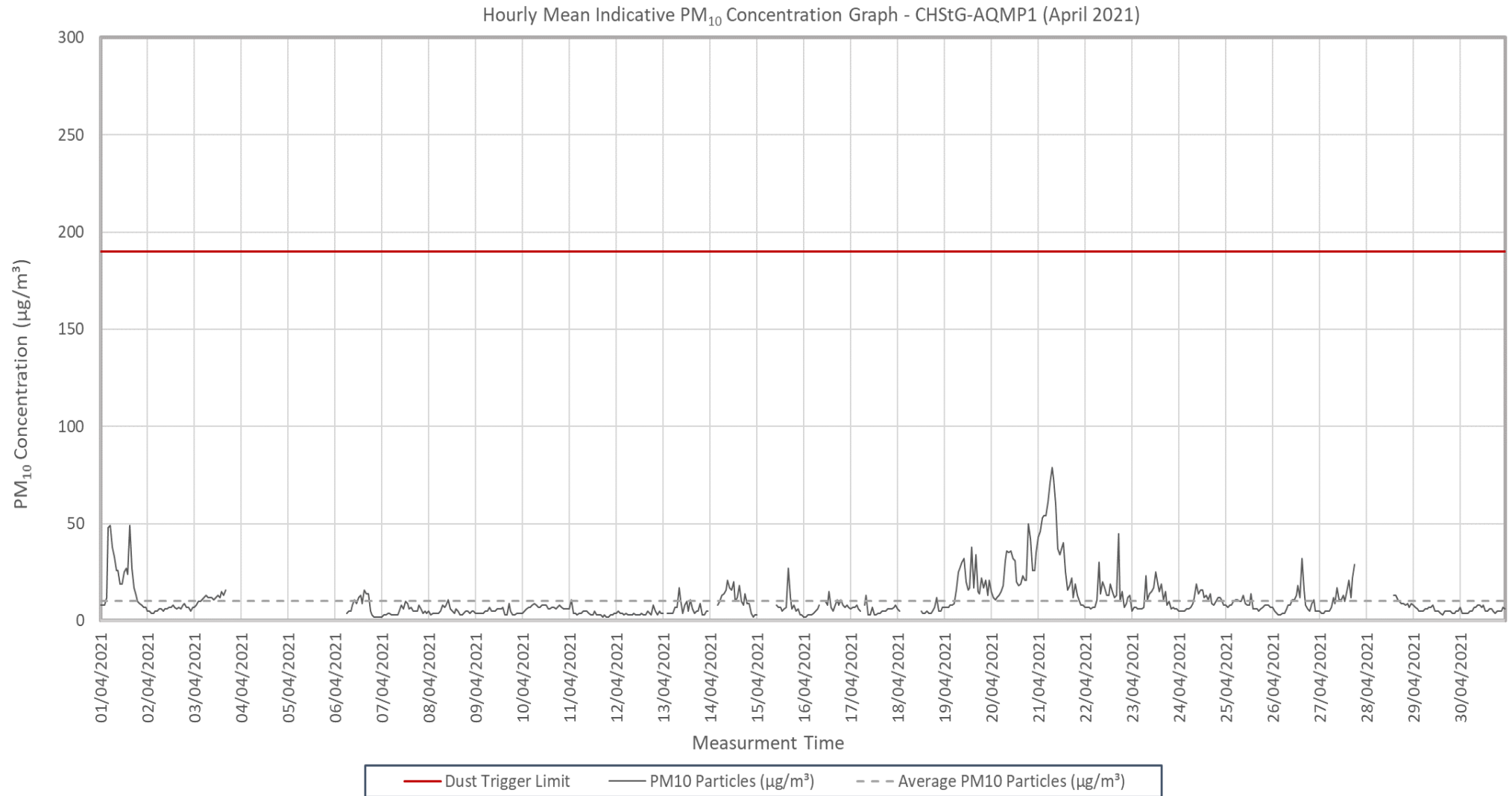


Figure 14: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP2 for April 2021

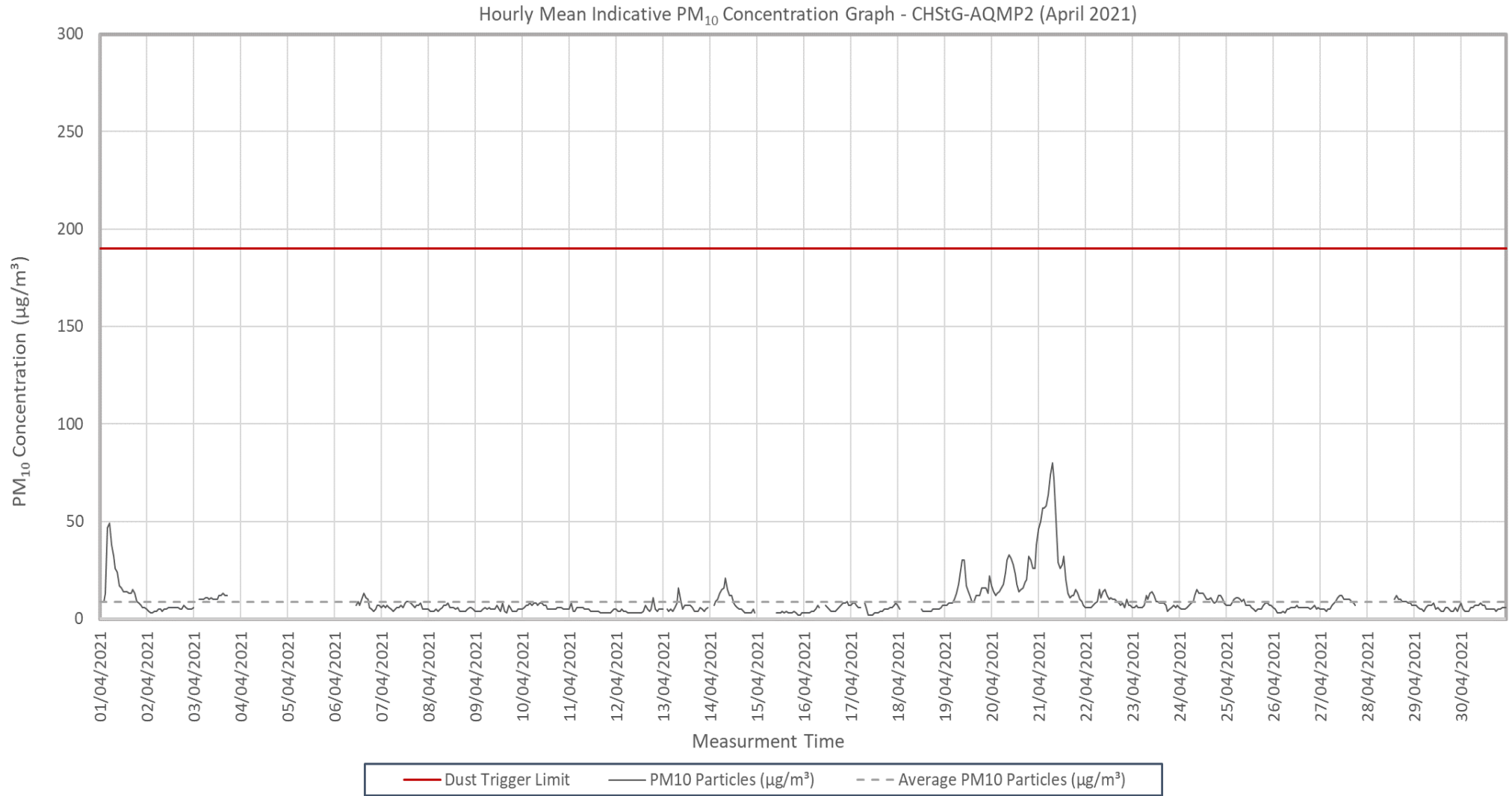


Figure 15: Continuous dust 1-hour mean indicative PM₁₀ concentration for LMS-AQMP1 for April 2021

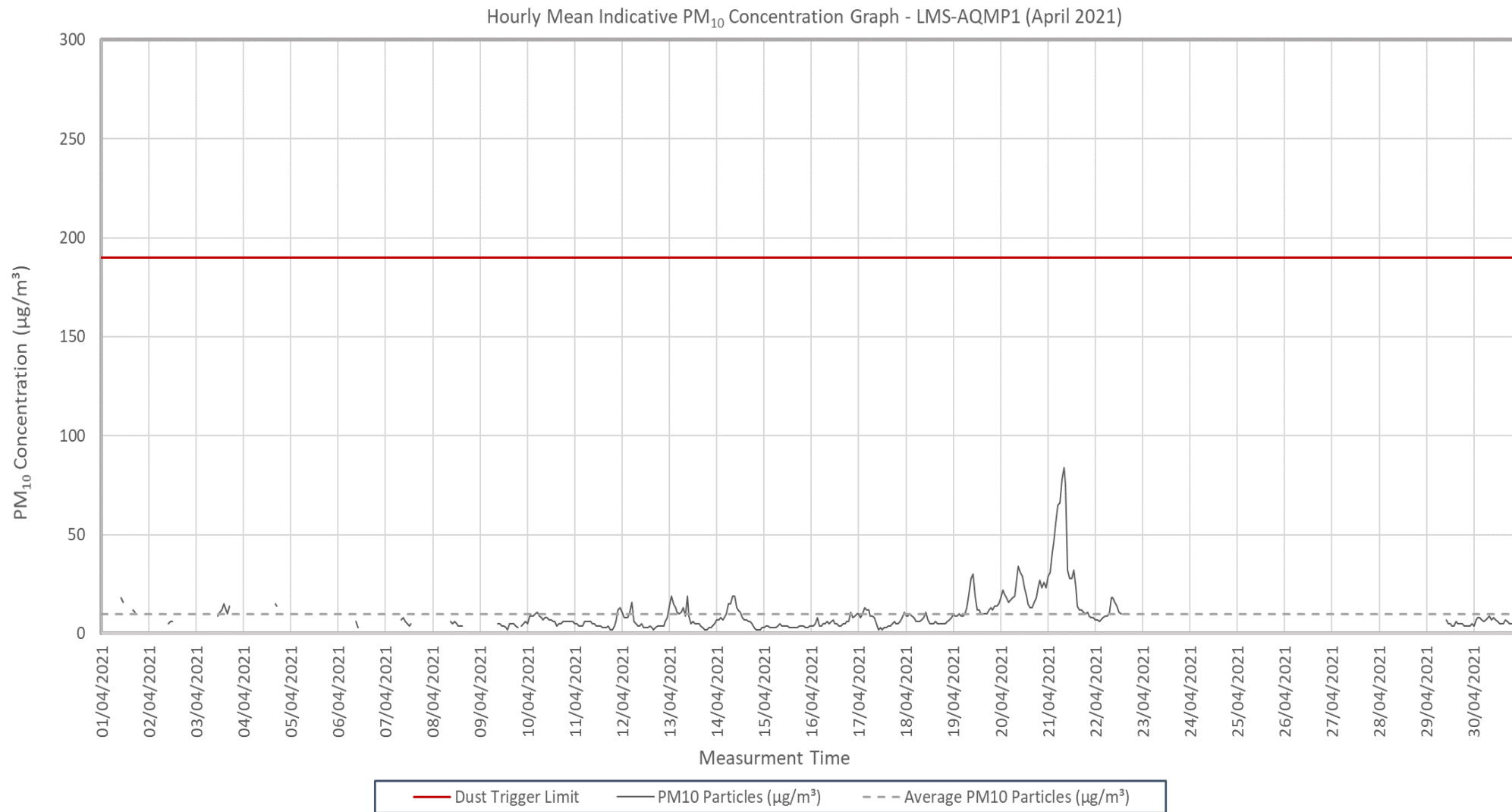


Figure 16: Continuous dust 1-hour mean indicative PM₁₀ concentration for LMS-AQMP2 for April 2021

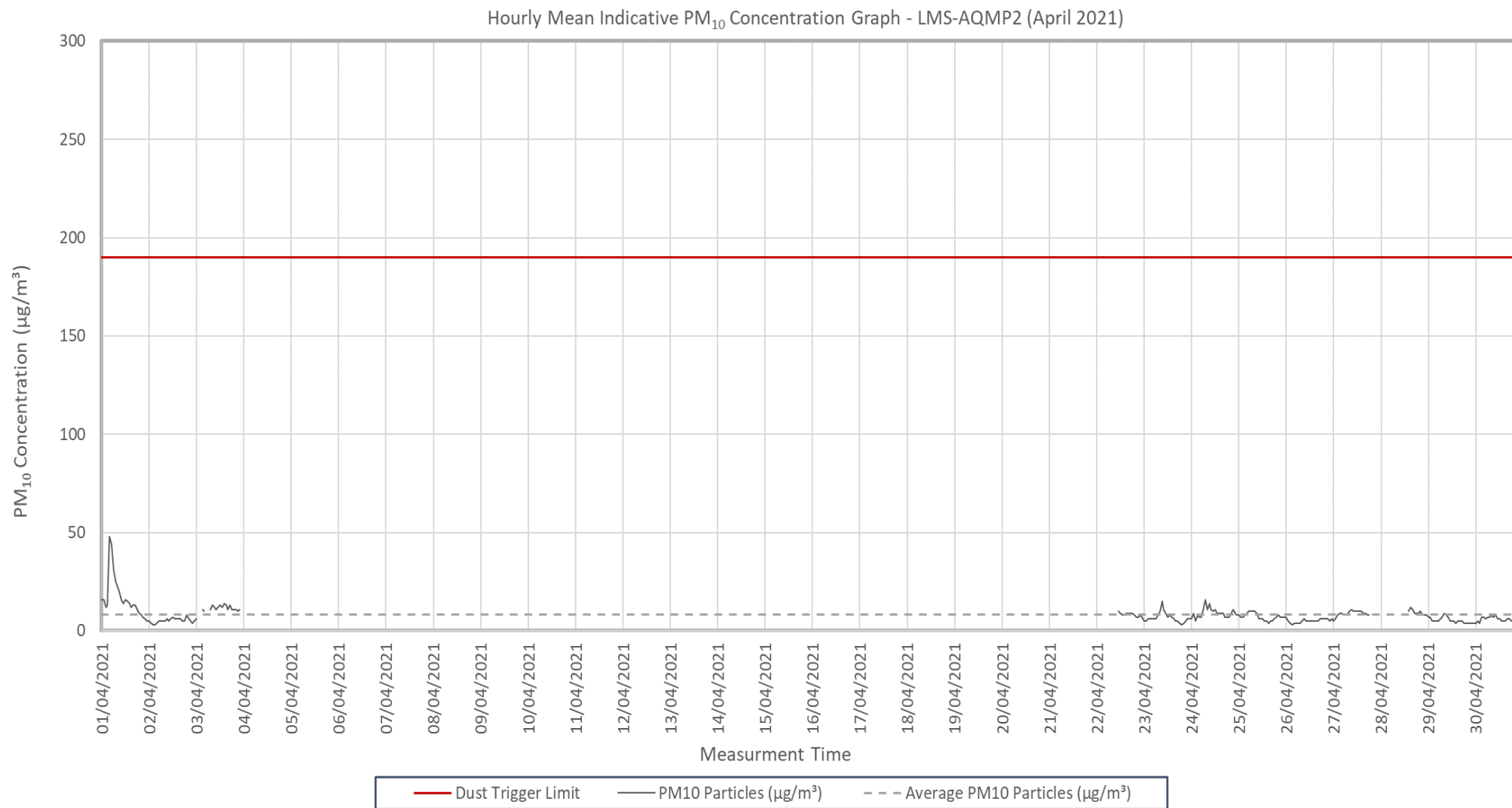


Figure 17: Construction dust 1-hour mean indicative PM10 concentration for 3252Dust3 – Lower Bottom House Farm

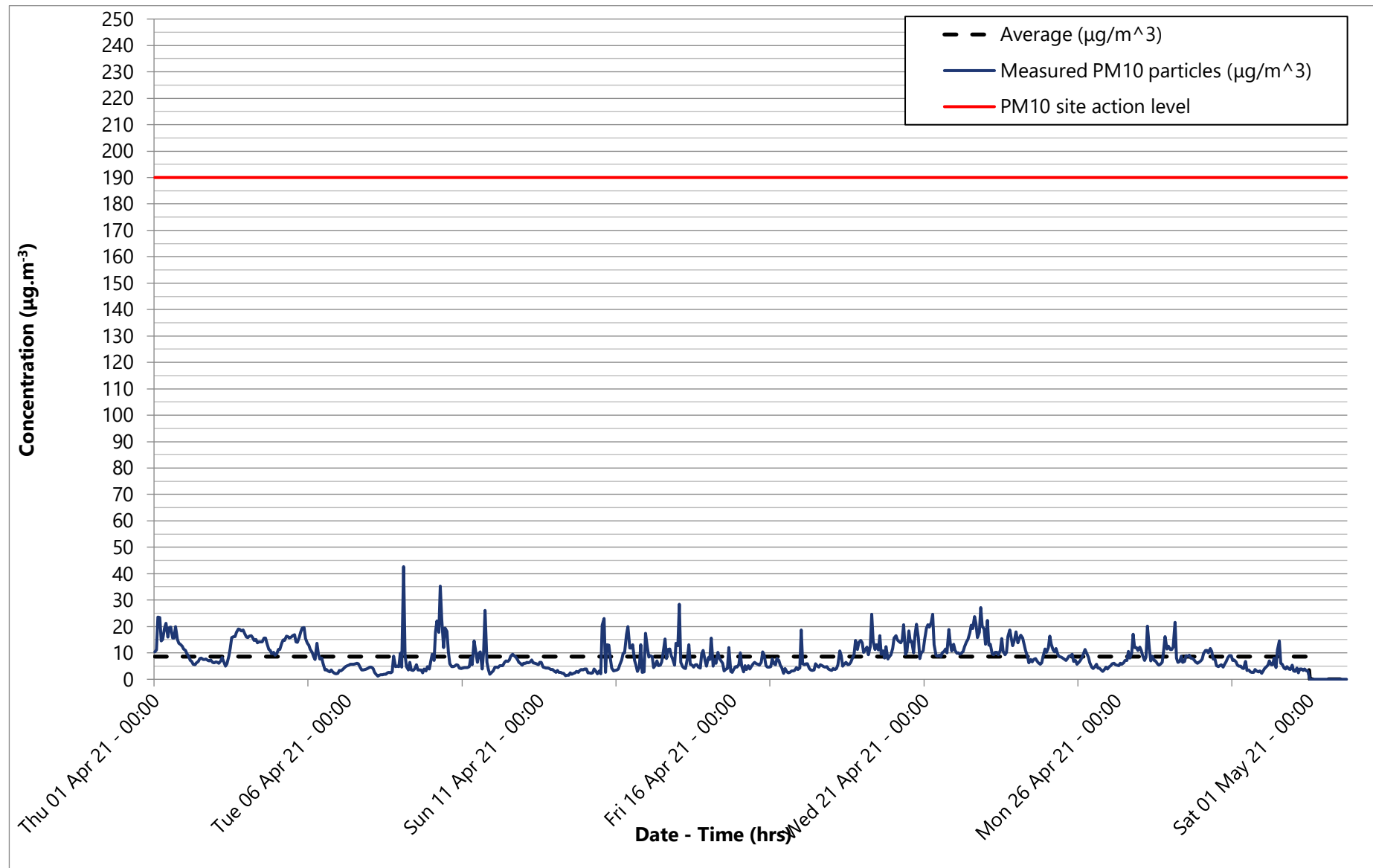


Figure 18: Construction dust 1-hour mean indicative PM10 concentration for dust monitor AQ001 - DC2J Haul Road and Compound site

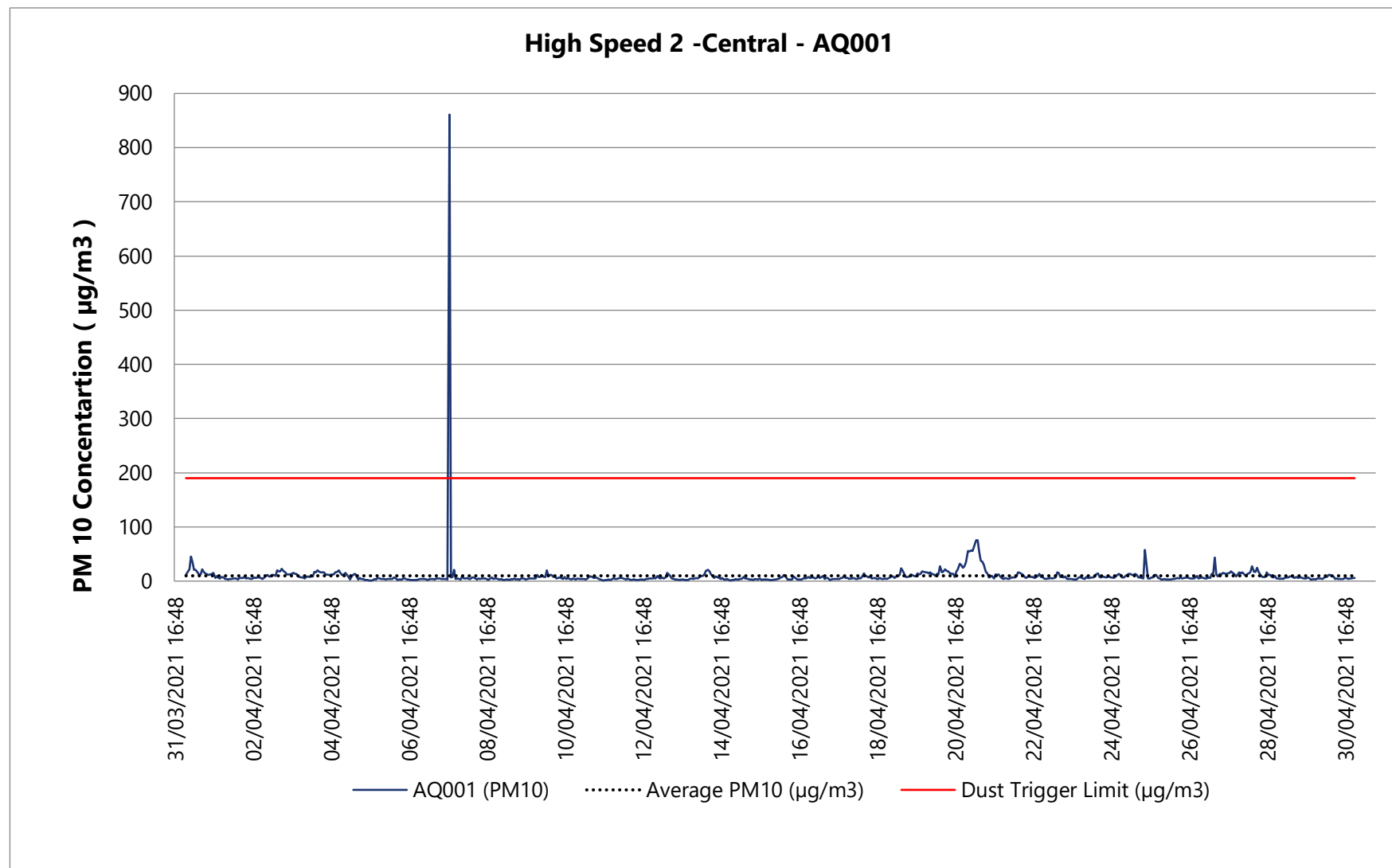


Figure 19: Construction dust 1-hour mean indicative PM10 concentration for dust monitor AQ002 - DC2J Haul Road and Compound site

