

Air Quality and Dust Monitoring Monthly Report – October 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) during October 2021.
- 1.1.2 Figure 1 to Figure 7 in Appendix A indicate the current worksites together with the 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 at the commenced in January 2020. The current worksites, as presented in Appendix A, Figure 1 to Figure 7, include:

CVV LTP1

- Jetty piling: piling plant form, platforms, support plant and compound;
- Cofferdam sheet piling: piling plant and support plant;
- Causeway piling: sheet pile installation and support piling;
- 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 pile surface, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- Haul road 28,220 - 29,200: preparation works, earthworks and drainage;
- North Embankment Compound: compound operation;
- Ground Investigation works: GI works and overwater GI works;
- DWSC Compound: compound operation and de-sanding compound;
- River Colne Realignment;
- Thames water diversion;
- Construction of north abutment pile wall;
- Yard Support of north abutment works;
- P41 retaining wall;
- Core drilling for integrity test of concrete piles; and
- Cofferdam excavation, dewatering, waling beams and concrete plugs.

Chalfont St Peter Vent Shaft

- General plant;
- Shaft base slab: preparation works;
- Collar construction bore TBM crossing: cast in- situ RC collar part 1 & 2;

- Basement secant piling works: shallow box retaining wall contiguous & secant piles, excavate & cut contiguous & secant piles;
- Road maintenance works;
- Stockpile management at ventilation shaft site and management of temporary stockpile;
- Shaft dewatering;
- All auxiliary plant 01-07; and
- Post treatment injection works including dewatering.

Amersham Vent Shaft

- General site activity: general plant;
- Earthworks: stockpile management;
- Ground post treatment: drilling and grouting;
- Water Treatment;
- Shaft Excavation; cleaning and inspection of the d-wall; and
- Ground Treatment Works;
- Pump Test Base slab concrete pours; and
- Cast in-situ collar construction (slab and collar pours).

Chalfont St Giles Vent Shaft

- General site activity: general plant;
- Earthworks: stockpile management;
- Ground post treatment: drilling and grouting;
- Dewatering;
- Secant piling: secant piling; and
- Secant Piling: extended hours working.

Little Missenden Vent Shaft

- General site activity: general plant;
- Earthworks: stockpile management;
- D-Wall works: excavation, concreting, desanding and mud treatment;
- Water treatment;
- A413 closure: road crossings and duct runs: and traffic management, road planning, earthworks, ducting, concreting, surfacing, line marking; and
- A413 site access traffic light scheme.

North Chilterns Area

- South Heath Earworks;
- Great Missenden Compound;
- Mulberry Park Demolition Works;
- Durham Farm Demolition and De-vegetation Works;
- Surface Water Management Works (Attenuation ponds);

- Small Dean Compound;
- Sheet Piling (due to start 23rd October);
- Wendover Compound;
- Wendover Batching Plant; and
- Nash Lee Road Diversion.

Aylesbury

- Construction of A418 Oxford Road Main Compound;
- Site access road (south of the A418 Oxford Road Compound); and
- Drainage earthworks (ditches, attenuation ponds)

Calvert Area

- West Street Compound mobilisation;
- School Hill Batching Plant Compound mobilisation;
- Addison Road overbridge enabling works;
- East West Rail overbridge;
- Charndon Lodge underbridge;
- Perry Hill overbridge;
- Calvert North site access road;
- OXD line earthworks;
- Calvert Cutting earthworks;
- FCC offloading platform;
- FCC bridleway upgrades; and
- Calvert South site access road.

Twyford to Greatworth

- Vegetation clearance;
- Slab crossing;
- Heras Fencing;
- Access road (Topsoil stripping, stabilisation);
- Pond excavation/Drainage;
- Stockpiling; and
- No Demolition in September.

Lower Bottom House Farm Lane

- Earthworks covering an area roughly 25,000 m²;
- Excavation, stockpiling, use of dumper trucks, excavators, dozers etc;
- Reconstruction and widening of the existing Bottom House Farm Lane, made up of an asphalt surface over compacted sub-base. Construction activities comprise:
- Topsoil strip;
- Cut/fill placing and compaction. Imported fill where required;

- Utility diversions;
- Install ducting and drainage;
- Lay and compact CBGM and/or engineered fill;
- Lay asphalt and compact;
- Road lining; and
- Road signage and landscaping.

- 1.1.5 Twenty six (26) dust monitors are installed around the worksites where works are underway. These sites returned a 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 8. 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, measured as a 1-hour mean, 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 (October 2021) and are reported in Appendix B Table 2, it was noted that the trigger alerts were not associated with the site activities.
- 1.1.9 Data capture was below 90% for multiple monitors in October 2021 due to data transfer issues, power faults and SIM card replacements.
- 1.1.10 There were no (0) complaints were received during this reporting period.

Appendix A – Worksite and Dust Monitoring Locations


Figure 1 to Figure 7: Worksites and monitoring locations within the BC



- Legend**
- Dust Monitor
 - District Borough Unitary Boundaries
 - Worksite

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| |
|---|
| Map Number |
| Map Name Monitoring Locations In BC (Sheet 1) |
| Buckinghamshire County |

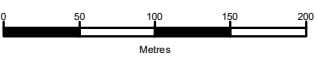


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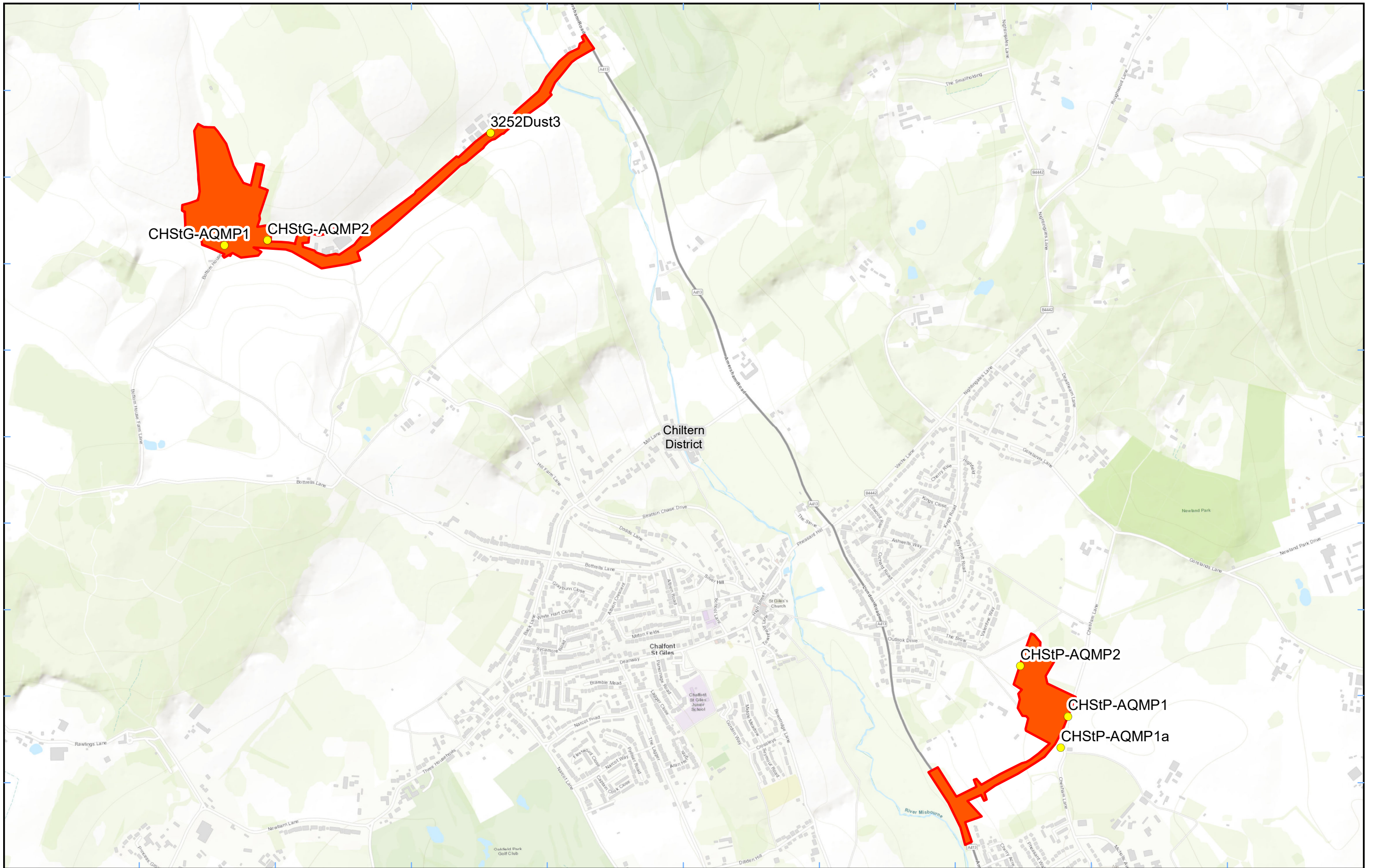


Metres



Date: 03/11/21

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- Legend**
- Dust Monitor
 - District Borough Unitary Boundaries
 - Worksites

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Map Number
 Map Name
**Worksite and Monitoring Locations
 In BC (Sheet 2)**
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- Legend**
- Dust Monitor
 - District Borough Unitary Boundaries
 - Worksite

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| | |
|------------|---|
| Map Number | |
| Map Name | Monitoring Locations In BC (Sheet 3) |
| | Buckinghamshire County |

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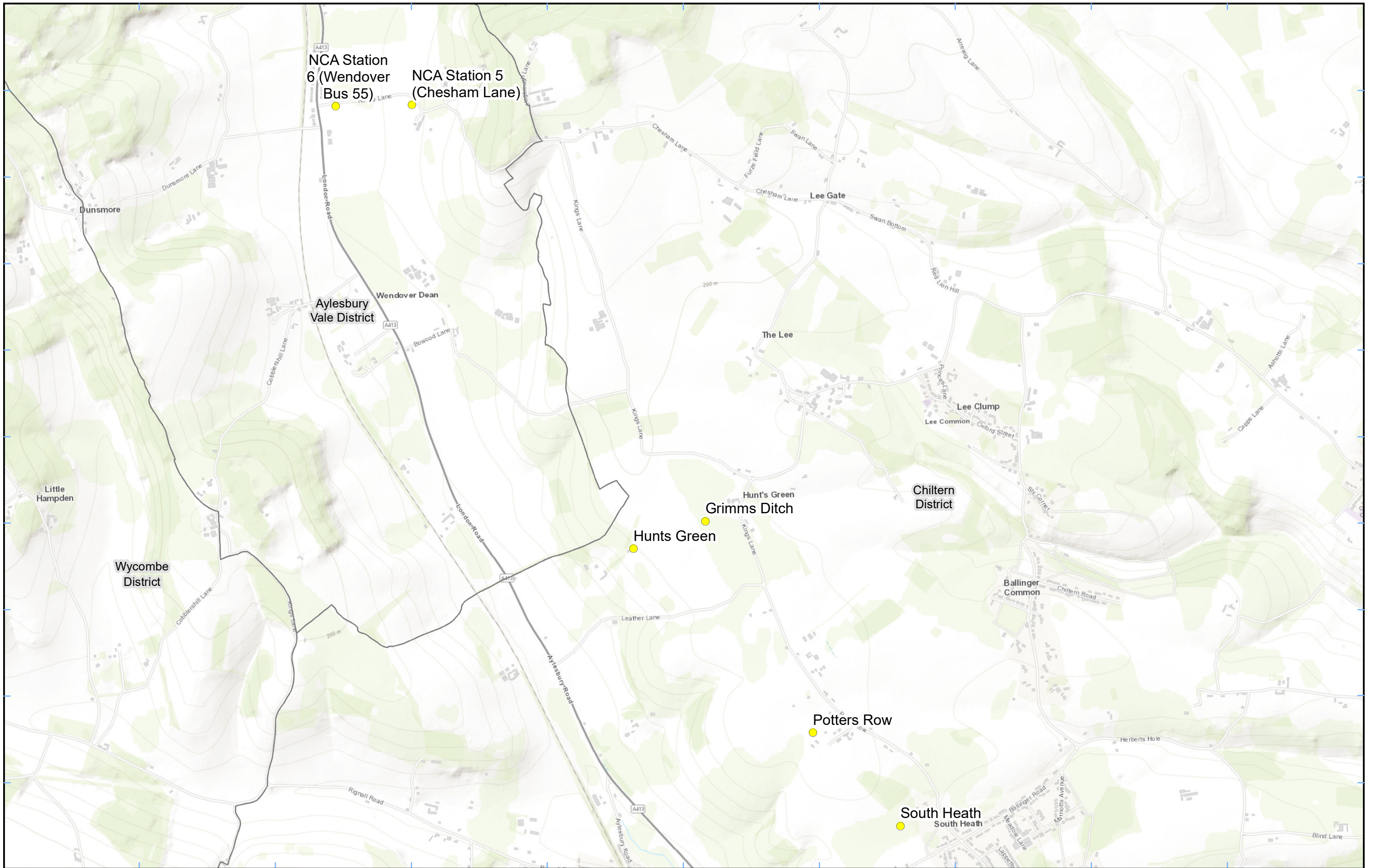
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Legend
 Dust Monitor
 District Borough Unitary Boundaries

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Map Number
 Map Name
**Monitoring Locations
 In BC (Sheet 4)**
Buckinghamshire County

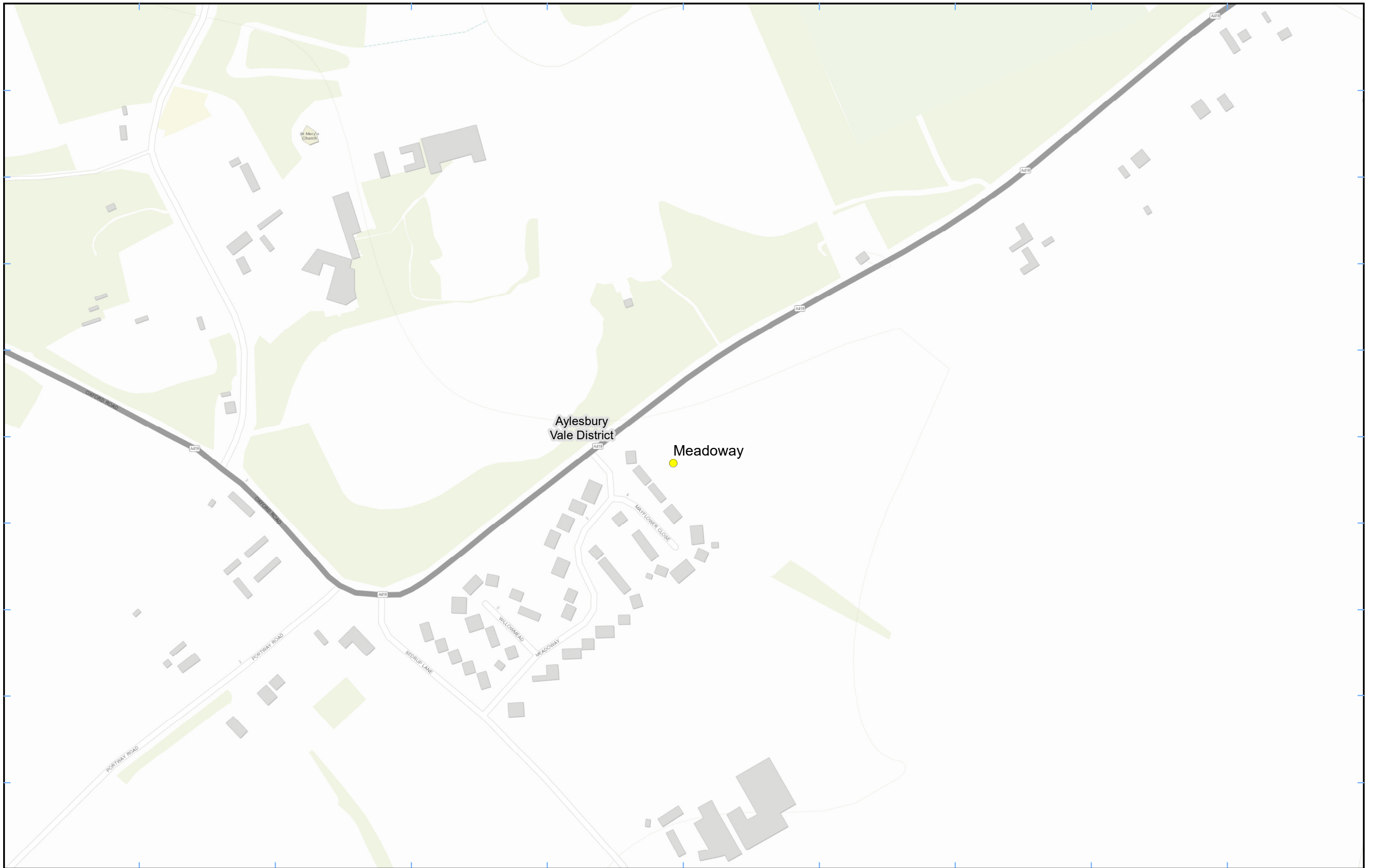
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Legend

- Dust Monitor
- District Borough Unitary Boundaries

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Map Number

Map Name
**Monitoring Locations
In BC (Sheet 5)**

Buckinghamshire County

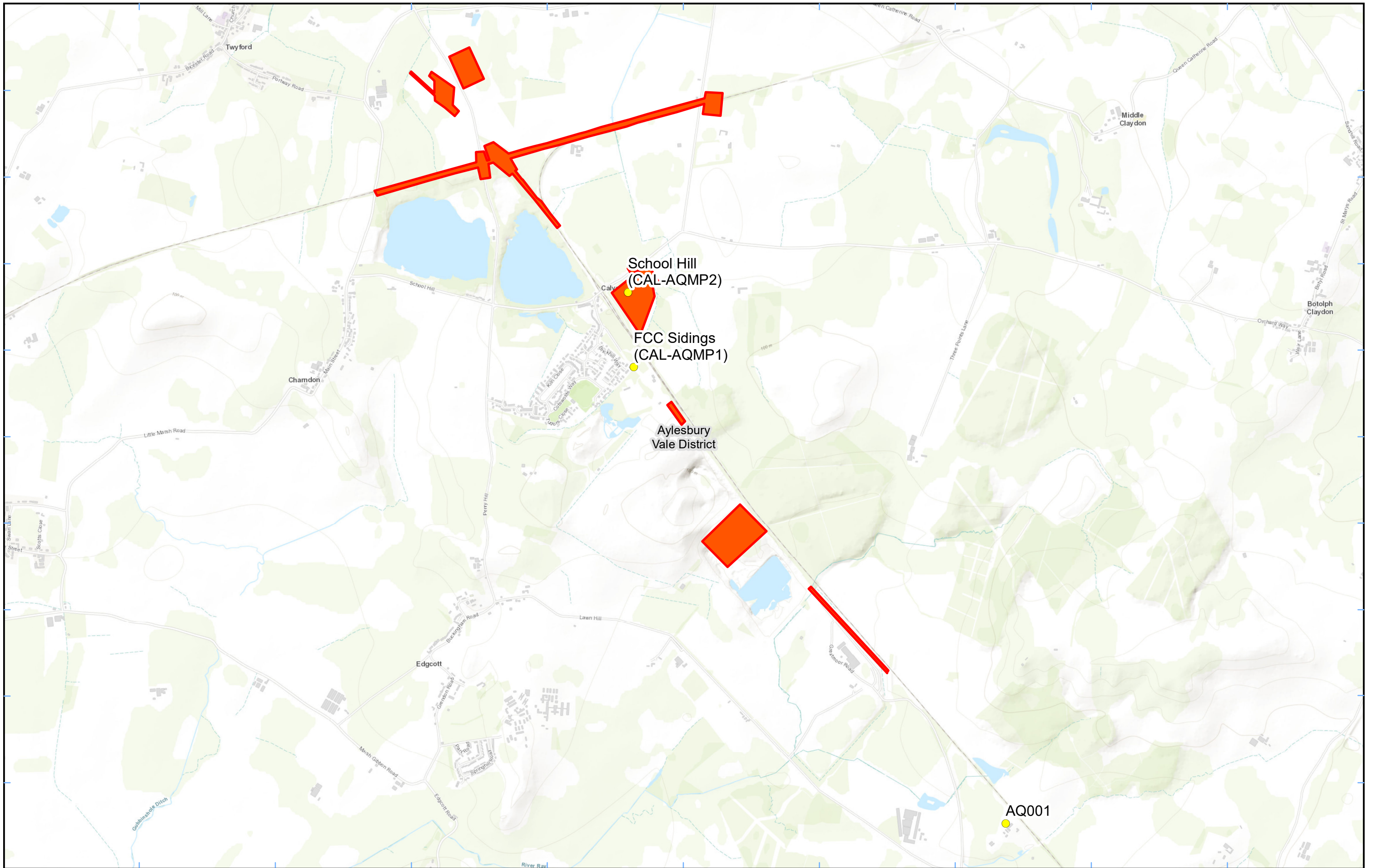
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Legend
 Worksites
 District Borough Unitary Boundaries
 Dust Monitor


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Map Number
 Map Name
**Worksite and Monitoring Locations
 In BC (Sheet 6)**
 Buckinghamshire County

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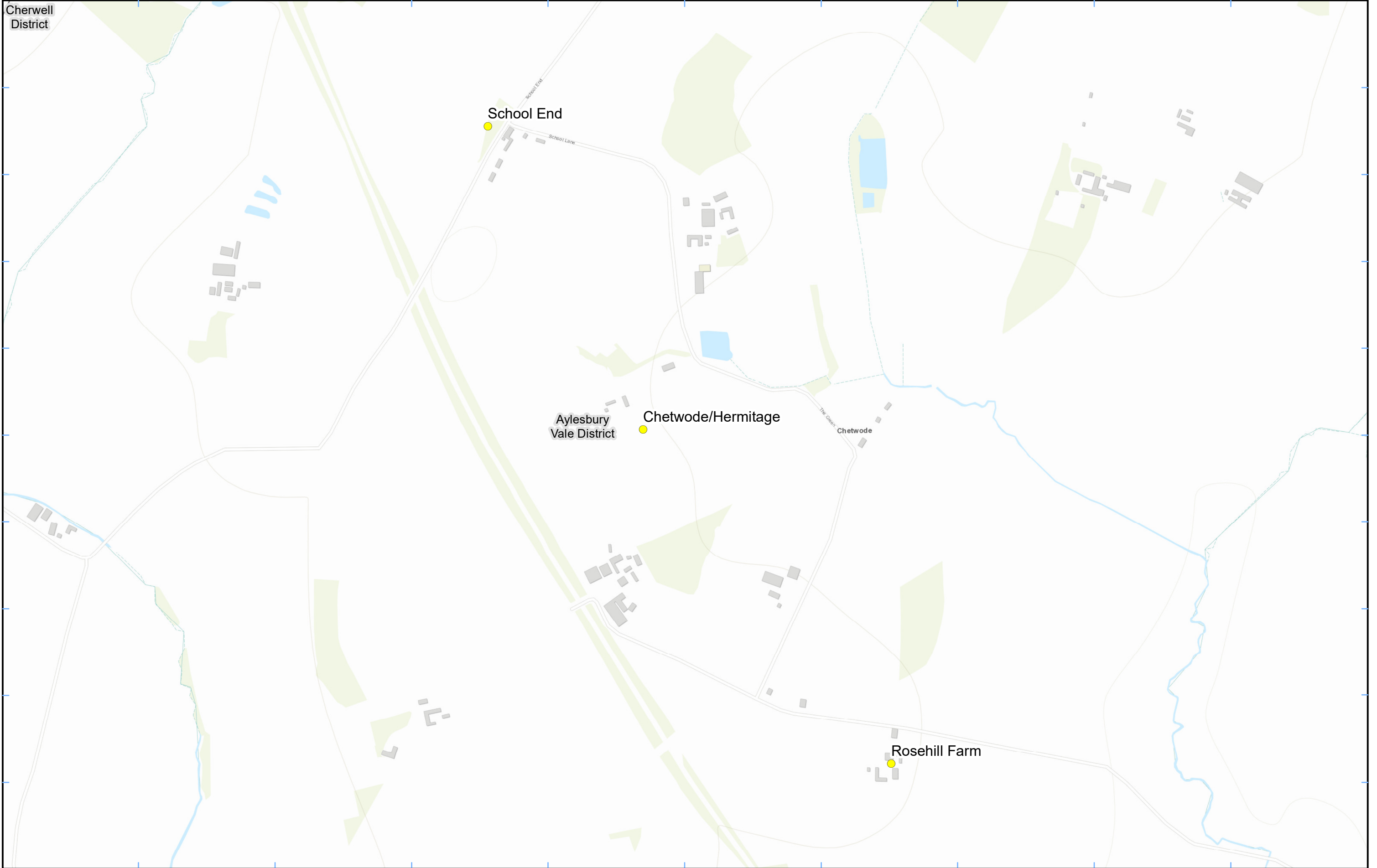
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Legend
 ● Dust Monitor
 □ District Borough Unitary Boundaries

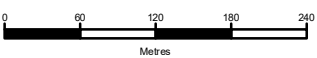
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Map Number
 Map Name
**Monitoring Locations
 In BC (Sheet 7)**
 Buckinghamshire County


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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and October 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 (%) |
|--------------------|-------------------|---|---------------------------|--------------------------------------|---|---|--|--|---|------------------|
| CVW-AQMP1 | 503612, 189846 | On the north boundary of LTP1 | Medium | Yes | Yes | 7.0 | 1.0 | 36.0 | 0 | 99.5 |
| CVW-AQMP2 | 503662, 189775 | On the south boundary of LTP1 | Medium | Yes | Yes | 6.8 | 1.0 | 34.0 | 0 | 99.3 |
| CHStP-AQMP1 | 500118, 193105 | On the eastern boundary of the site with Chesham Lane - Now relocated as CHStP-AQMP1a | Medium | Yes | Yes | 6.7 | 1.0 | 32.0 | 0 | 91.7 |
| CHStP-AQMP1a | 500093, 192996 | Relocated from CHStP-NMP1 to site-boundary outside residence | Medium | Yes | Yes | 4.1 | 1.0 | 7.0 | 0 | 7.9 |
| CHStP-AQMP2 | 499951, 193282 | On the western boundary of the site | Medium | Yes | Yes | 6.3 | 1.0 | 43.0 | 0 | 72.0 |
| AMER-AQMP1 | 495367, 196722 | On the north-eastern boundary of Amersham | Medium | Yes | Yes | 6.7 | 1.0 | 30.0 | 0 | 99.6 |
| AMER-AQMP2 | 495263, 196590 | On the south-western boundary of Amersham | Medium | Yes | Yes | 6.2 | 1.0 | 33.0 | 0 | 98.5 |

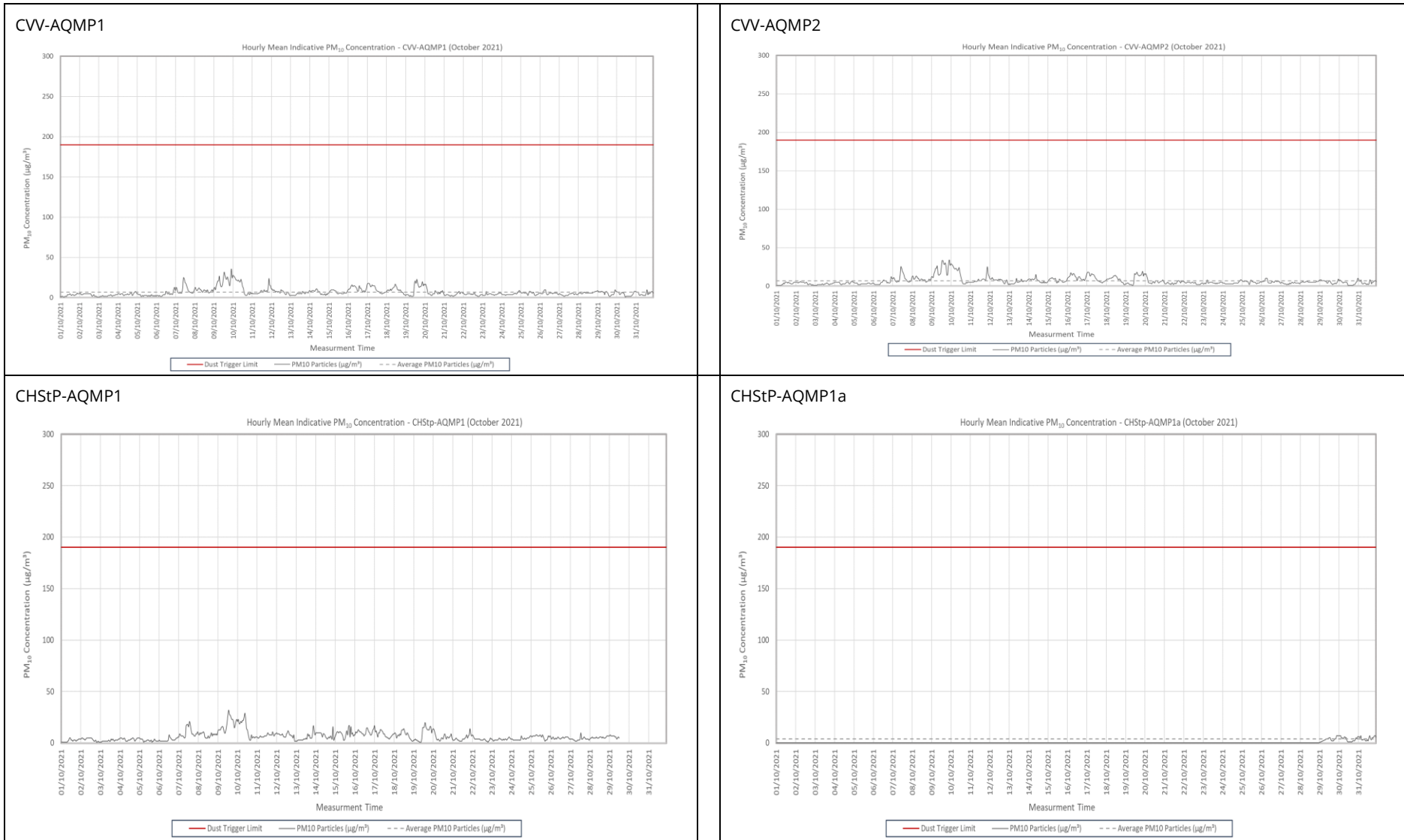
| Monitoring site ID | Coordinates (X,Y) | Location description | Dust risk rating for site | Monitoring site active during period | Change to site since previous period report | Mean 1-hour PM ₁₀ concentration (µg/m ³) | Minimum 1-hour PM ₁₀ concentration (µg/m ³) | Maximum 1-hour PM ₁₀ concentration (µg/m ³) | Number of 1-hour periods exceeding trigger level of 190 µg/m ³ | Data capture (%) |
|---------------------------|----------------------|---|---------------------------|--------------------------------------|---|---|--|--|---|------------------|
| CHStG-AQMP1 | 497170, 194752 | On the southern boundary close to Hobbs Hole Cottage | Medium | Yes | Yes | 6.1 | 1.0 | 30.0 | 0 | 82.5 |
| CHStG-AQMP2 | 497320, 194770 | On southern boundary next to carpark | Medium | Yes | Yes | 6.2 | 1.0 | 34.0 | 0 | 99.6 |
| LMS-AQMP1 | 493190, 198848 | On the south-west of the site | Medium | Yes | Yes | 6.8 | 1.0 | 47.0 | 0 | 85.1 |
| LMS-AQMP2 | 493407, 198731 | On the south-east of the site | Medium | Yes | Yes | 6.5 | 1.0 | 32.0 | 0 | 99.2 |
| 3252Dust3 | 498100, 195145 | On the site boundary opposite Lower Bottom House Farm | M | Yes | No | 6.2 | 0.6 | 21.7 | 0 | 100.0 |
| AQ001 | 51.886029, -0.963654 | Woodlands Farm | M | Yes | No | 6.2 | 1.0 | 41.0 | 0 | 98.4 |
| FCC Sidings (CAL-AQMP1) | 469040, 224261 | Adjacent Red Kite View, Calvert | N/A | Yes | Yes | 4.3 | 1.0 | 13.0 | 0 | 19.4 |
| School Hill (CAL-AQMP2) | 469003, 224740 | School Hill Compound | N/A | Yes | Yes | 11.9 | 1.3 | 130.4 | 0 | 96.8 |
| School End – Dust | 463666, 230049 | School End, Chetwode | M | Yes | Yes | 11.9 | 1.0 | 90.0 | 0 | 53.6 |
| Chetwode/Hermitage – Dust | 463936, 229521 | Hermitage, Chetwode | M | Yes | Yes | 10.6 | 2.0 | 73.0 | 0 | 67.5 |
| Rosehill Farm – Dust | 464368, 228939 | Rosehill Farm, Chetwode | M | Yes | Yes | 36.6 | 2.4 | 6527.9 | 7 | 96.6 |
| South Heath – Dust | 490534, 202014 | Bury Farm, South Heath | M | Yes | Yes | 10.9 | 1.0 | 90.0 | 0 | 96.5 |

| 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 (%) |
|--|-------------------|------------------------------------|---------------------------|--------------------------------------|---|---|--|--|---|------------------|
| Potters Row – Dust | 490075, 202502 | Potters Row, South Heath | M | Yes | Yes | 14.5 | 2.0 | 80.0 | 0 | 64.2 |
| Hunts Green – Dust | 489135, 203468 | Leather Lane, The Lee, South Heath | M | Yes | Yes | 11.1 | 1.0 | 71.0 | 0 | 96.8 |
| Grimms Ditch – Dust | 489511, 203611 | The Lee, South Heath | M | Yes | Yes | 9.9 | 1.0 | 48.0 | 0 | 33.1 |
| NCA Station 5 (Chesham Lane) - Dust | 487974, 205794 | Chesham Lane, The Lee, Wendover | M | Yes | Yes | 11.0 | 1.0 | 59.0 | 0 | 83.9 |
| NCA Station 6 (Wendover Bus 55) - Dust | 487574, 205787 | Chesham Lane, The Lee, Wendover | M | Yes | Yes | 10.0 | 1.0 | 54.0 | 0 | 87.5 |
| Meadoway – Dust | 479803, 212178 | Aylesbury, Buckinghamshire | M | Yes | Yes | 4.0 | 1.0 | 25.0 | 0 | 20.6 |

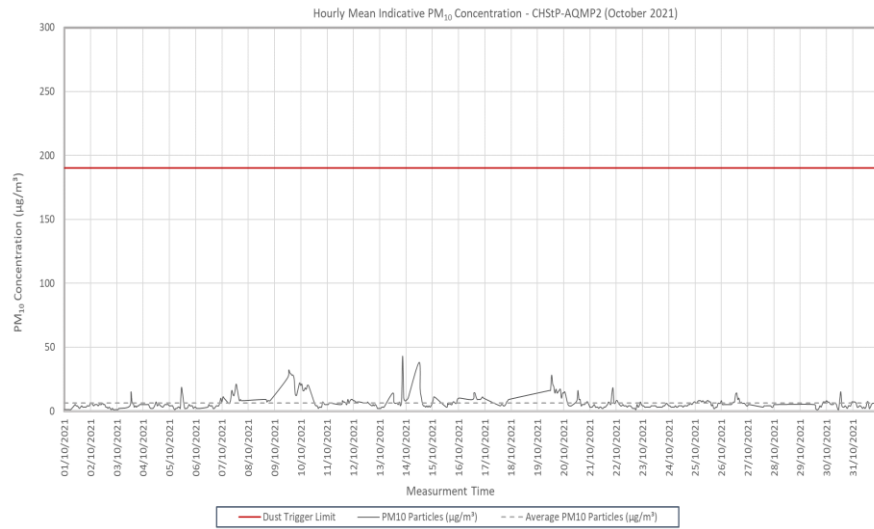
Table 2: Summary of exceedances of trigger level in October 2021

| Monitoring Site ID | Period exceeding trigger level | Investigation | Outcomes / Resolution / Remedial measures implemented |
|----------------------|--|---|--|
| Rosehill Farm – Dust | 16/09/2021 (x7 alerts) 01:01 – 02:00; 226.6 µg/m ³ 03:01 – 04:00; 915.9 µg/m ³ 04:01 – 05:00; 224.9 µg/m ³ 05:01 – 06:00; 377.9 µg/m ³ 06:01 – 07:00; 3,715.0 µg/m ³ 07:01 – 08:00; 6,527.9 µg/m ³ 08:01 – 09:00; 6,453.5 µg/m ³ | Upon investigation, the alerts occurred during the night into the early morning, up to gam. No works have been undertaken during this period. Furthermore, due to gas issues, the monitor was temporarily down, as such these are considered false alerts. | The Hydrogen power supplier has been out the same today and changed the empty gas cylinders. The monitored concentrations have returned to normal. |

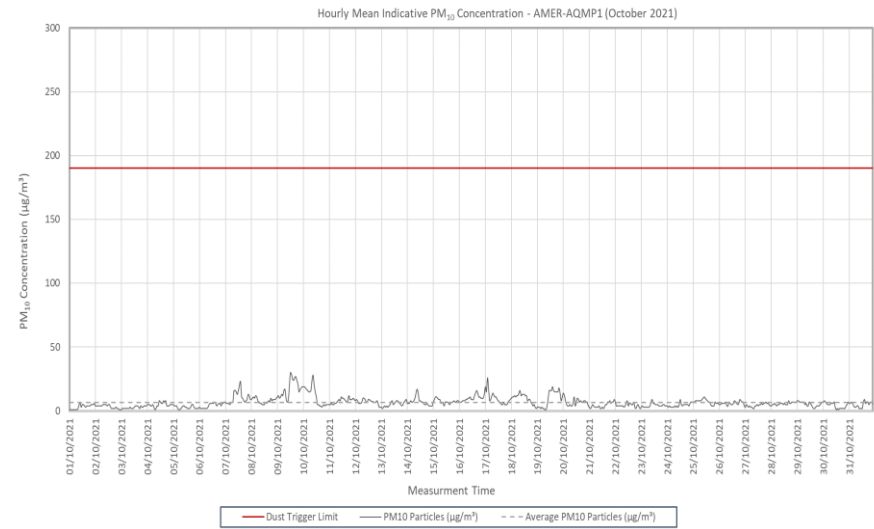
Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentrations for all dust monitors



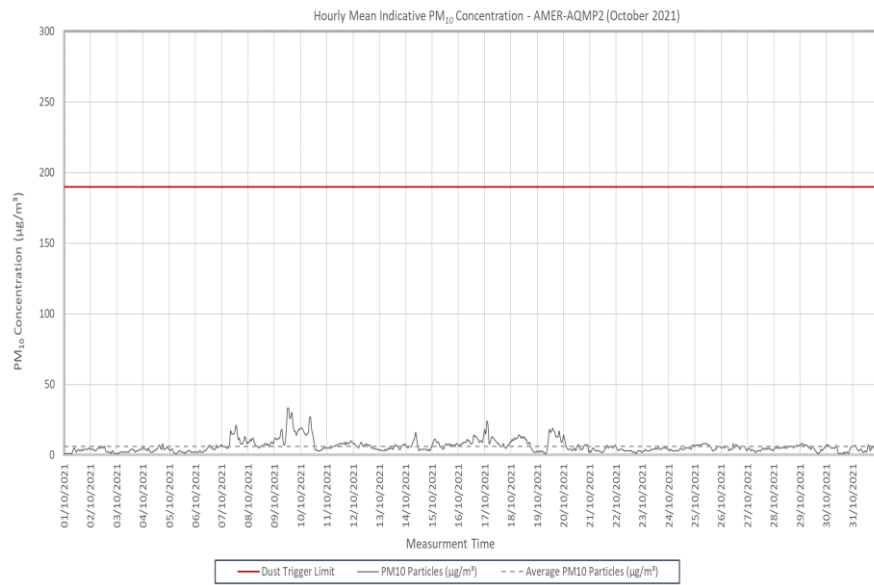
CHStP-AQMP



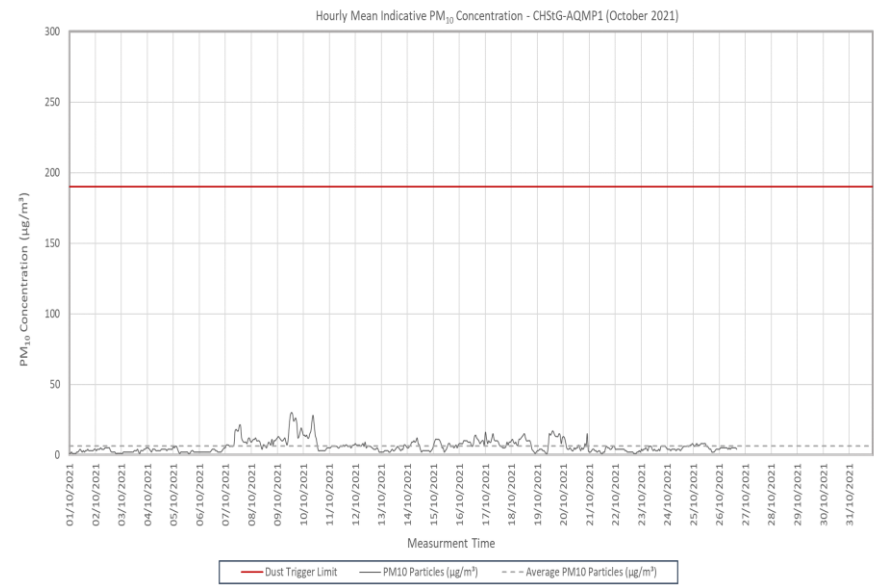
AMER-AQMP1



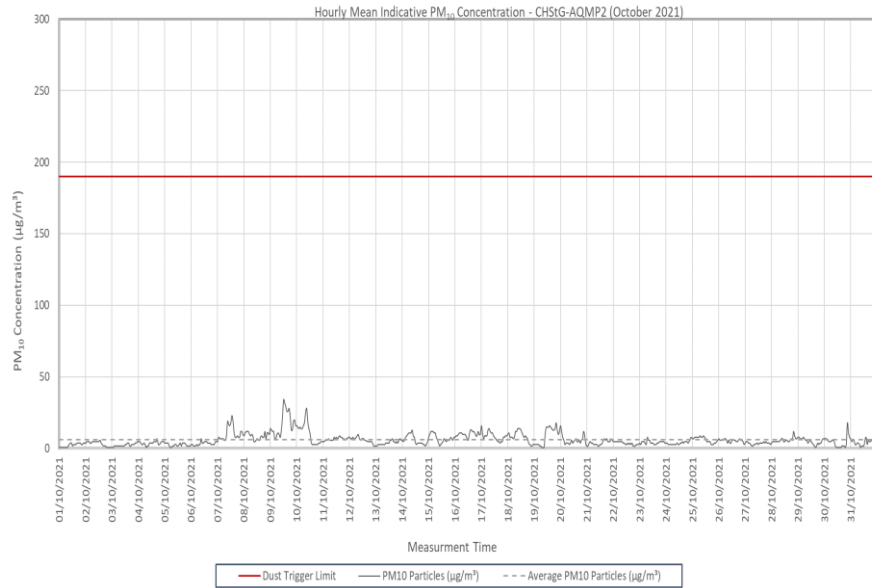
AMER-AQMP2



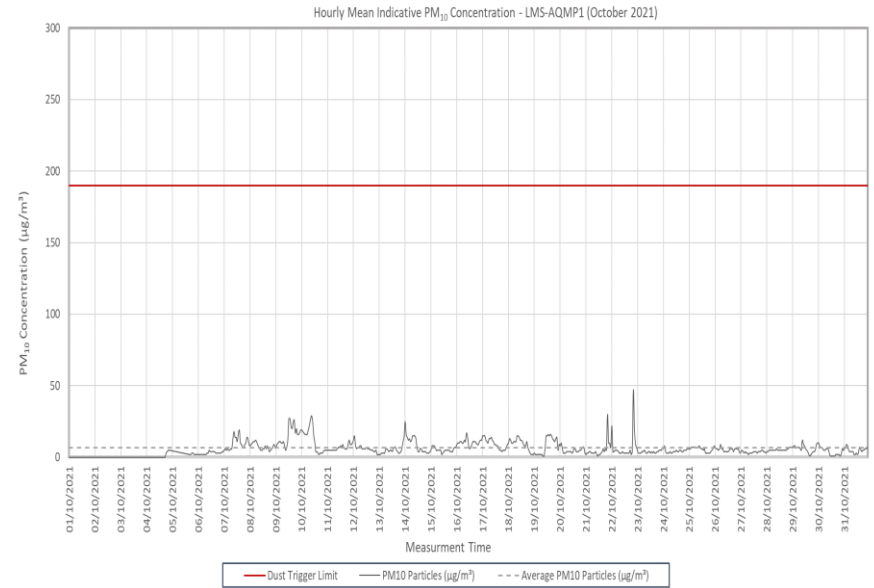
CHStG-AQMP1



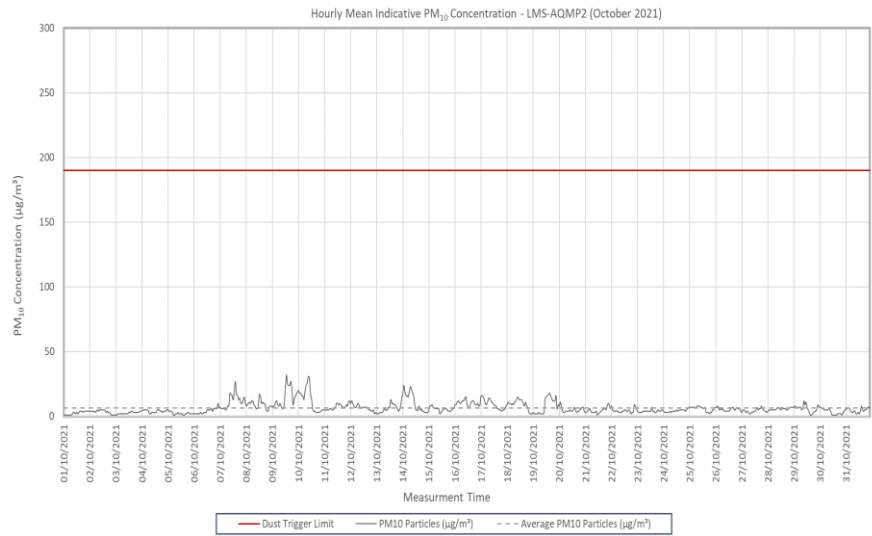
CHStG-AQMP2



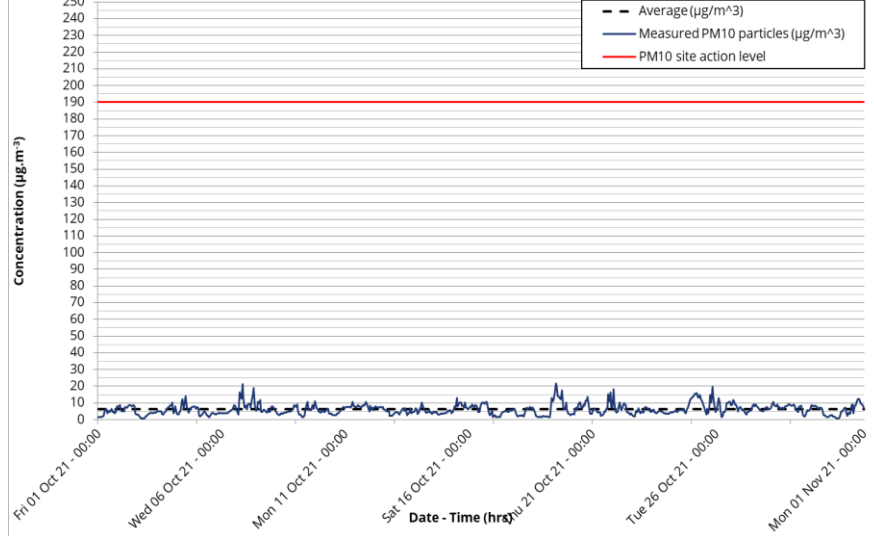
LMS-AQMP1



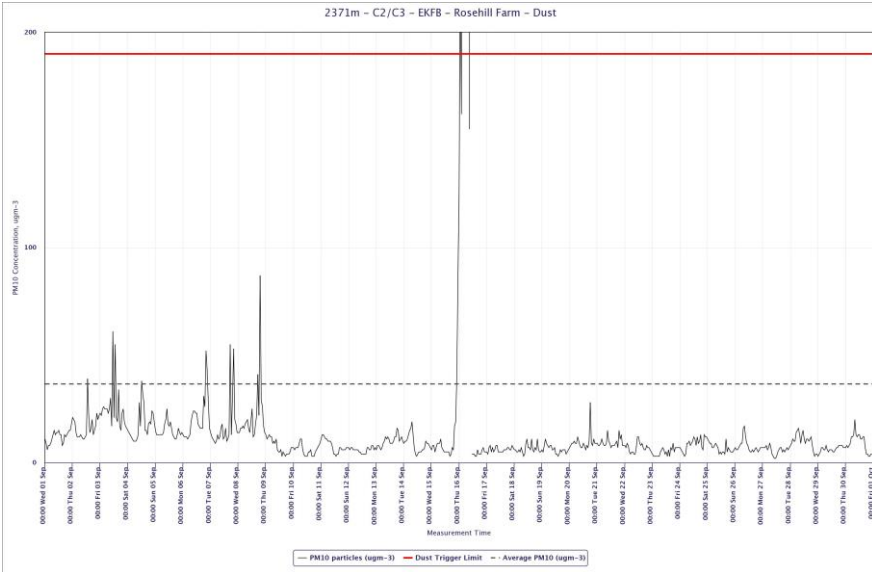
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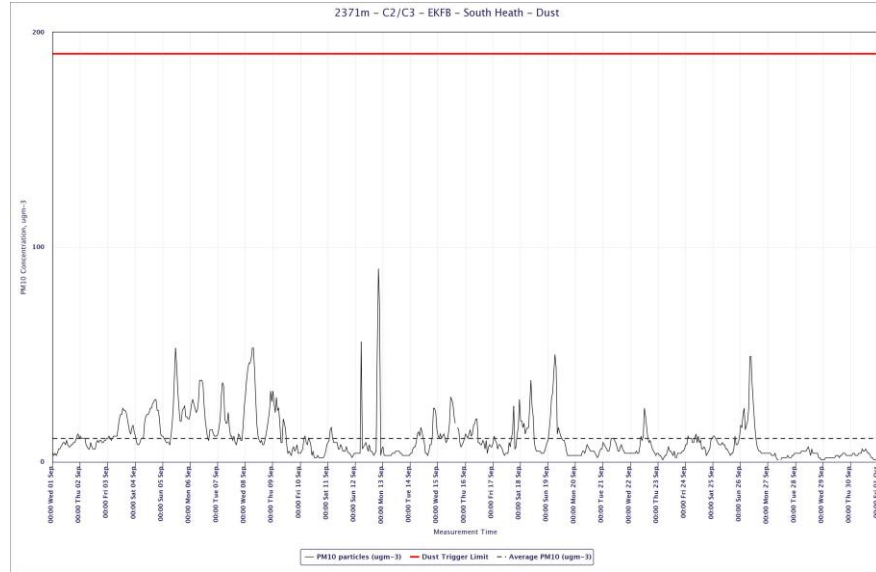
3252Dust3



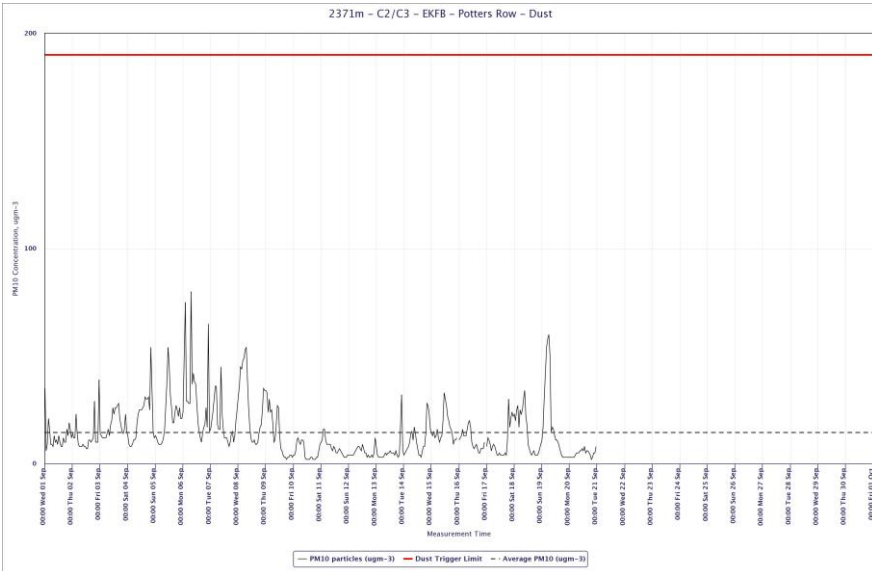
Rosehill Farm



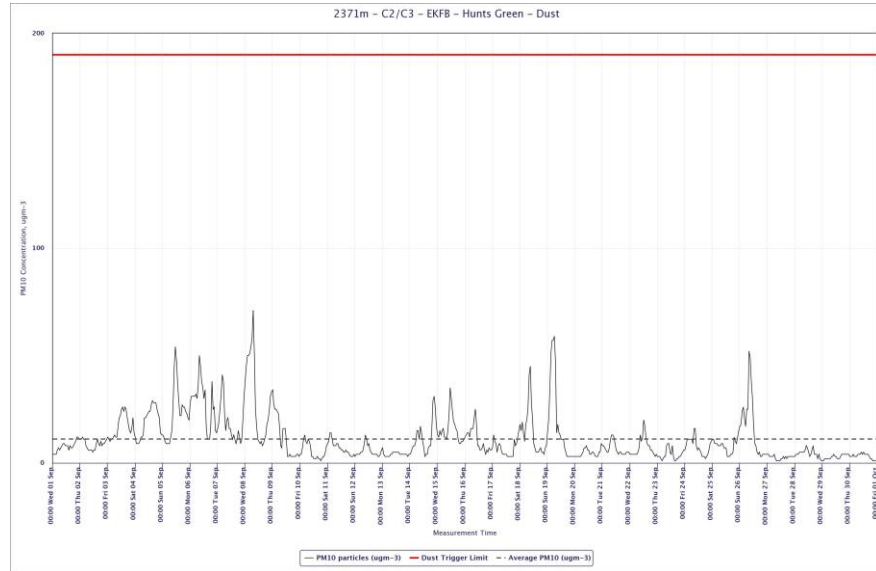
South Heath



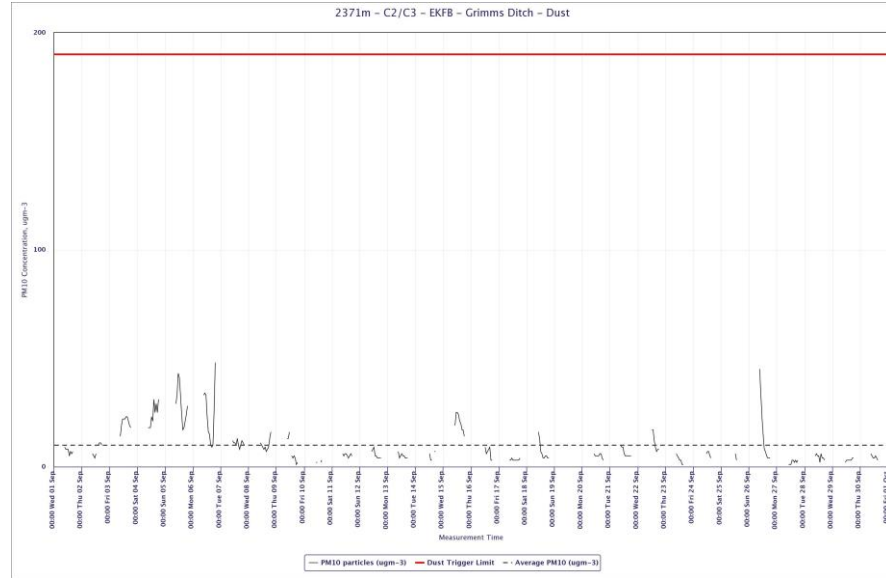
Potters Row



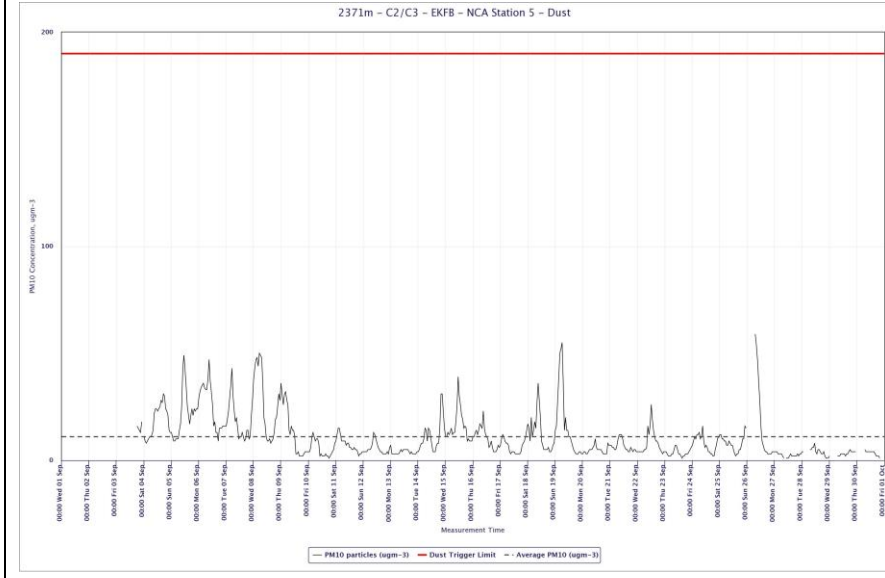
Hunts Green



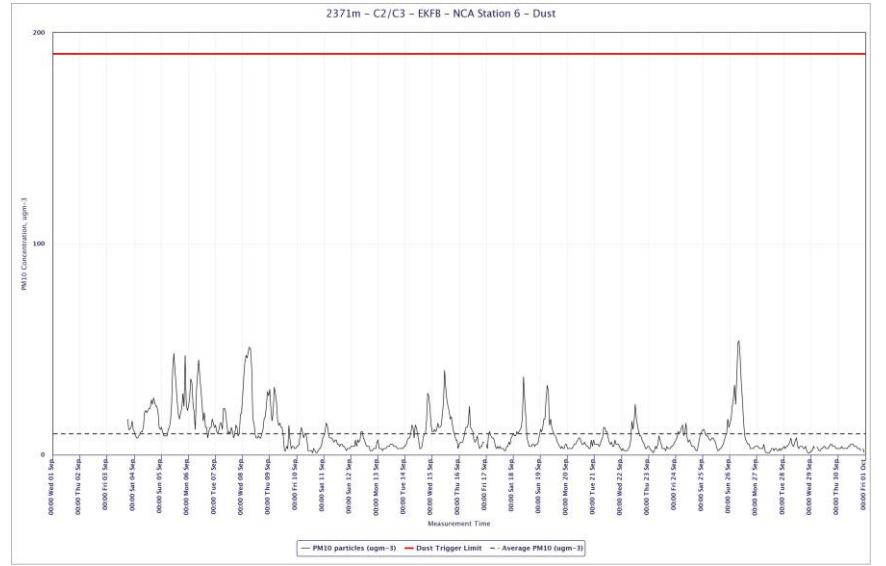
Grimms Ditch



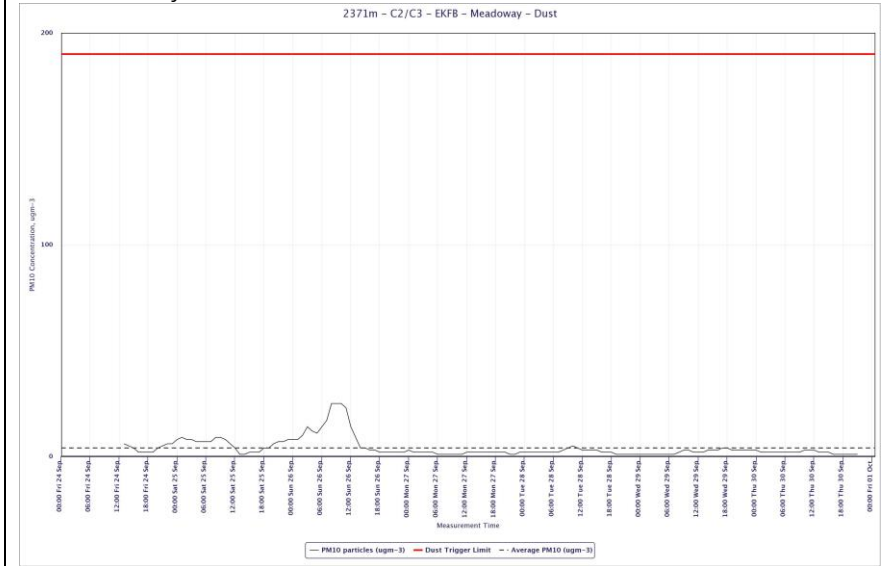
NCA Station 5



NCA Station 6



EKFB Meadoway



AQ001

