February 2023

HS2

Air Quality and Dust Monitoring Monthly Report — February 2023 Buckinghamshire Council

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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 February 2023.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for November 2022.
- 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 worksites, as presented in Appendix A, Figures 1-7, include:

CVV LTP1

- Jetty Piling: piling platform relocation works;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- North Embankment Compound: compound operation;
- DWSC Compound: compound operation;
- Haul Road and Jetty Maintenance River Colne to GUC: operation and maintenance;
- Ground Investigation Works: GI works and Overwater GI Works;
- Pier Construction: standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- Pumping water management;
- Satellite welfare;
- Generator farms;
- North Abutment Works: yard supporting activities and FRC works;
- Core Drilling of Concrete;
- Pile Trimming;
- A412 Gas Crossing Emergency Dismantling;
- SCS Material Storage;
- Fencing;
- Utility Diversion;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farms: Base Slab Construction;
- River Colne Crossing: Emergency removal of obstruction to RC Crossing;

- Launching Girder and Deck Works: Span segmental erection with launching gantry, shoring steel structure erection and dismantling, internal post-tensioning (PT) and grouting; and
- Deck Finishes: delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, construction of robust kerbs, installation of parapets, construction of concrete stitch filling of voids and secondary concrete (within deck), supply and installation of carrier drainpipe and access ramps required within the deck and main deck waterproofing.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connection to Tunnels: concrete floors; and
- Basement Construction: excavate to formation and headhouse concrete works.

Amersham Vent Shaft

- General Site Activities;
- Internal Structure: concrete walls and floors; and
- Basement Construction: excavation to B1 formation levels, headhouse basement internals and demolition of D-wall.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connections to Tunnels: demolition and reinforced concrete works; and
- Basement Construction: excavation of basement and basement internals.

Little Missenden Vent Shaft

- General site activity;
- Shaft Base Slab: concrete pour;
- Internal Structures Core Slip-form: slipform;
- Internal Structures: remaining walls and slabs; and
- Small basement construction; excavation to B1 formation level and headhouse basement internals.

Chesham Road Vent Shaft

- General site activity: general compound;
- Internal Structure: reinforced concrete works; and
- Superstructure: reinforced concrete works.

North Portal work site

- Access Road: drainage and services, scrape formation, hardstanding and kerbing, asphalt and signage;
- Piling Platform Area 1: traffic management and temporary access from Firth Hill Road
- North Portal Compound: general plant;
- North Portal Road: general plant;
- Temporary Access Haul Road: dismantling related to temporary access road;
- North-Portal Building Platform: scraping / hardstanding / surfacing / services/ drainage;
- North-Portal Tracks Platform: scraping / hardstanding / surfacing / services / drainage;
- Piling Platform Removal: dismantling related to areas D.1,D.2 piling platforms;
- Headwall Capping-Beam and Excavation: excavation / RC works/ temporary propping;
- Portal Drainage: excavation / drainage installation / backfilling; and
- Porous Portal Structure: RC works and concrete pours.

North Chilterns Area

Nash Lee

- Temporary bridge foundations;
- Excavating to formation level;
- Laying geogrid and backfilling with 6f5 and type 1;
- · Silt Fencing;
- Widening West access road from crossing 2 to crossing 3;
- Stockpiling
- Temporary Surface water management: Trial Trenches Pond and V-ditch excavations;
- Installation of Hard Standing for Laydown area; and
- Increase size of Pre-cast yard.

Wendover Green Tunnel

- Archaeology works;
- Temporary Surface water management: Trial Trenches Pond and V-ditch excavations;
- Superstructure completed by MAYBEY bridge;
- Topsoil strip tie in works embankment (vac ex);
- Stockpiling;
- Concrete batching;
- SAR extension;
- V-ditching;
- Drainage and kerb install at west embankment finishing works fuel slab; and
- Archaeology works.

Small Dean South Embankment

- Remedial works between A413 and railway, hauling material, creating stone road;
- Surface water management works/maintenance;
- Excavation works and platform installation; and
- Utilities Ductile iron 400mm pipe and telecom duct installation.

Leather Lane

- Surface Water Management System maintenance;
- Archaeological works (Grimms Ditch); and
- Topsoil strip.

South Heath Cutting Worksite

• Surface Water Management System - pond installation.

Wendover Dean Viaduct

- Wendover Dean compound;
- Pile cropping completed;
- Shuttering;
- Steel fixing;
- Concreting;
- pre-grouting (started 23/01/23);
- Continuous Concrete Pour for Abutment Pile Caps and Abutment Base.

Calvert Area

- Charndon Lodge Underbridge* technical backfill.
- Charndon Lodge Pumping station formwork reinforced concrete works.
- East West Rail Overbridge* technical backfill, rebar fixing and formwork lifting.
- Perry Hill Overbridge* rebar fixing, formwork lifting, concrete pouring, delivery of bridge steel components i.e. beams and girders, assembly of bridge steel components and platform extensions, and technical backfill for foundation.
- Addison Road Overbridge approach earth embankments, steel deck lifting and landing, FRC (formwork reinforced concrete) works incl. capping beams, cheek walls, approach slab bases and WPR (western power distribution) electricity substation.
- SCL/08 Overbridge rebar fixing, formwork lifting and concrete pouring.
- OXD Culverts (EWR Culvert, IMD West Culvert and IMD East Culvert) no works at EWR or IMD East; technical backfill at IMD west.
- Portway Culvert* bulk excavation and D&R (dig and replace), delivery and installation of culvert units, delivery and installation of precast headwalls, and waterproofing.
- OXD Line Earthworks* embankment capping layers and drainage.
- Calvert Cutting* pre-earthworks drainage i.e. ponds.
- IMD* (Infrastructure maintenance depot) platform fill and landscape bund fill.
- Hills Farm Earthworks stockpile fill and maintenance.

- MCJ Line Earthworks no works.
- Bat Mitigation Structure sheet piling.
- GUN28 Overbridge excavation of pilecap, pile cropping and rebar fixing.
- River Ray Culvert and Adams Accommodation Underbridge* no works.
- Woodlands Culvert* bulk excavation and D&R (dig and replace), installation of precast units, rebar fixing for headwalls and chambers.
- Edgcott Road Overbridge piling.
- Doddershall No.6 and No.7 Culvert concreting of headwall and access chambers, and waterproofing.
- Quainton Temporary Utility Diversions* installation of chambers, construction of electricity substation and utility connections.
- West Street Overbridge* site mobilisation.
- West Street Temporary Utility Diversions* field trenching for duct laying, installation of connection chambers, utility connections and connection testing.
- SGN Pipe Temporary Diversions* no works.
- Secant Retaining Wall* topsoil stripping and stone laying for piling platform and piling.
- School Hill Batching Plant * production of concrete.
- MHR Utilisation* haulage of material across worksites.

Twyford to Greatworth

Turweston North:

- Road Diversion
- Aggregate Delivery
- Turweston Cutting Excavation
- Utilities Mobilisation
- Water Management

Aylesbury

Moat Farm:

- Stoke Mandeville Bypass piling
- PRA Overbridge piling
- Surface water management remedial works
- Stockpiling
- Earthworks Aylesbury South Cutting

Westfield:

- PRA Overbridge Piling
- Earthworks Aylesbury South Cutting
- Stockpiling

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- Vegetation clearance
- Overhead utility diversion
- Haul road construction

Oat Close:

- Earthworks Aylesbury Embankment
- Stockpiling
- Haul road construction

Glebe House:

- Earthworks Aylesbury North Cutting
- Earthworks A418 Overbridge
- A418 Overbridge Piling
- Stockpiling
- Piling platform works
- Haul road construction

Meadoway:

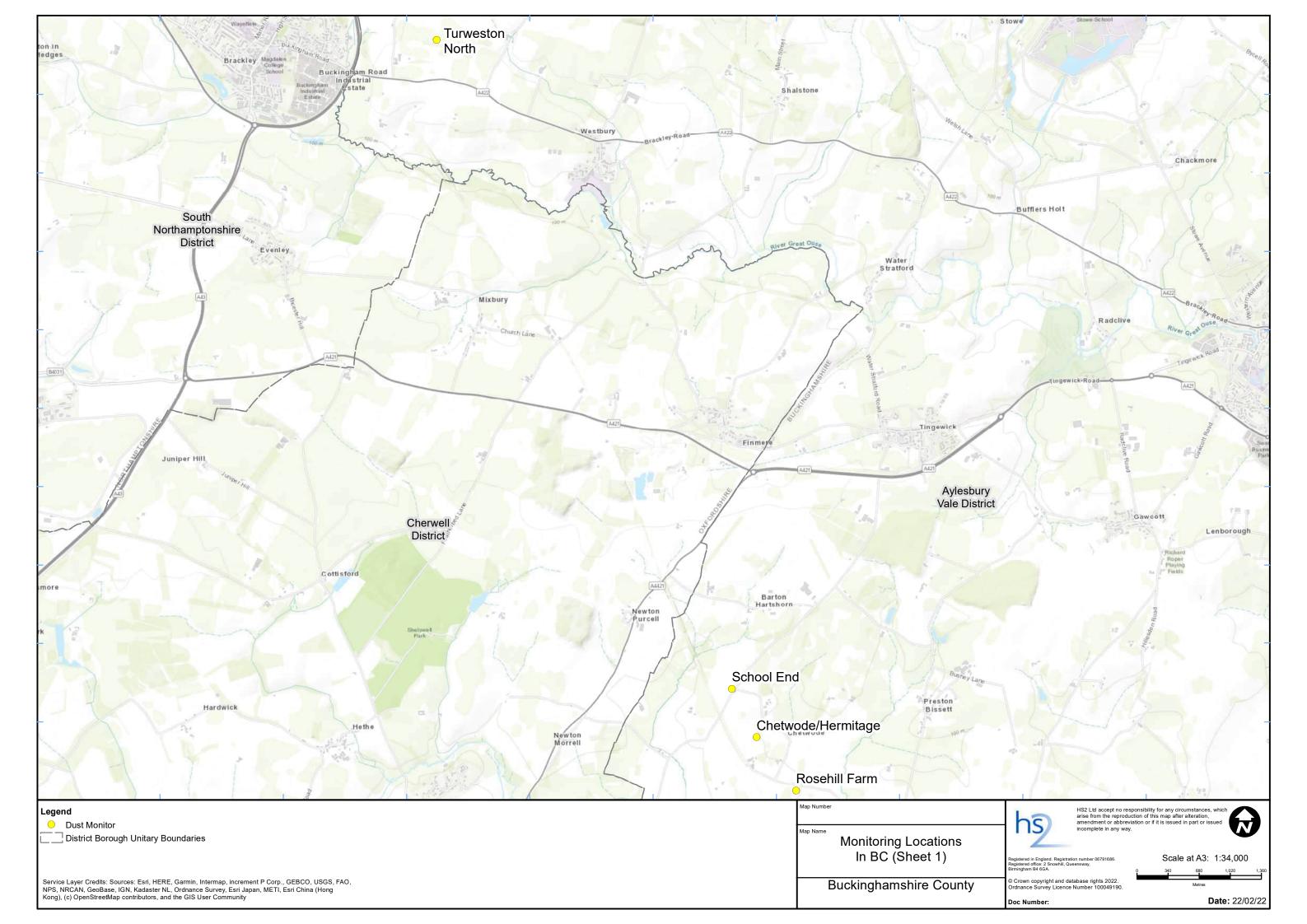
- Earthworks Aylesbury North Cutting
- A418 Overbridge piling
- Vegetation clearance
- Stockpiling
- Piling platform works
- Haul road construction
- 1.1.5 Thirty-eight (38) dust monitors are installed around the worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for November 2022 are presented in Appendix B, Table 1, together with a line chart of monthly data from each dust monitor presented 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 PM_{10} concentrations of 190 μ g/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 (December 2018)' has been applied.
- 1.1.8 Data capture was below 90% for multiple monitors due to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using solar/wind power.

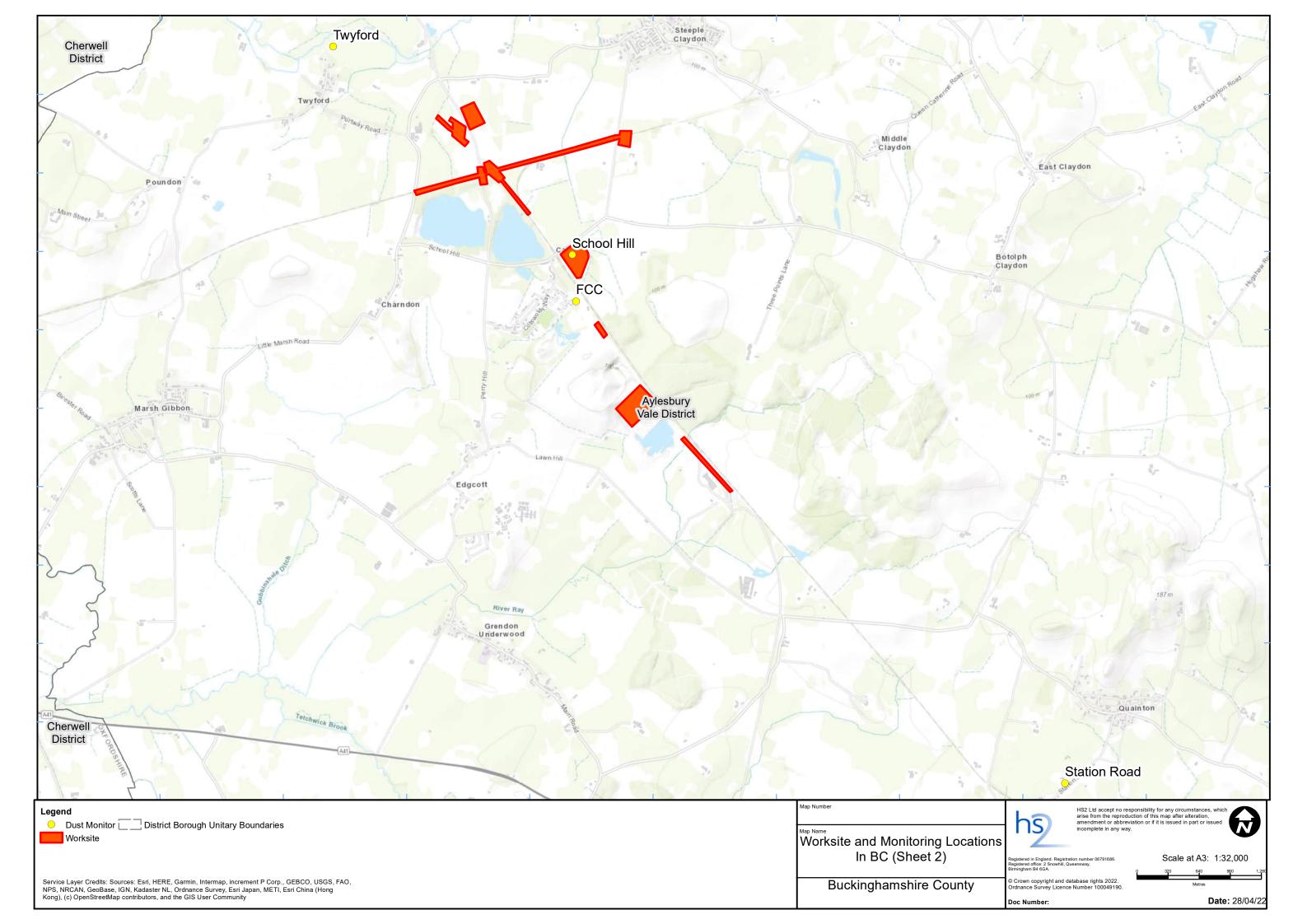
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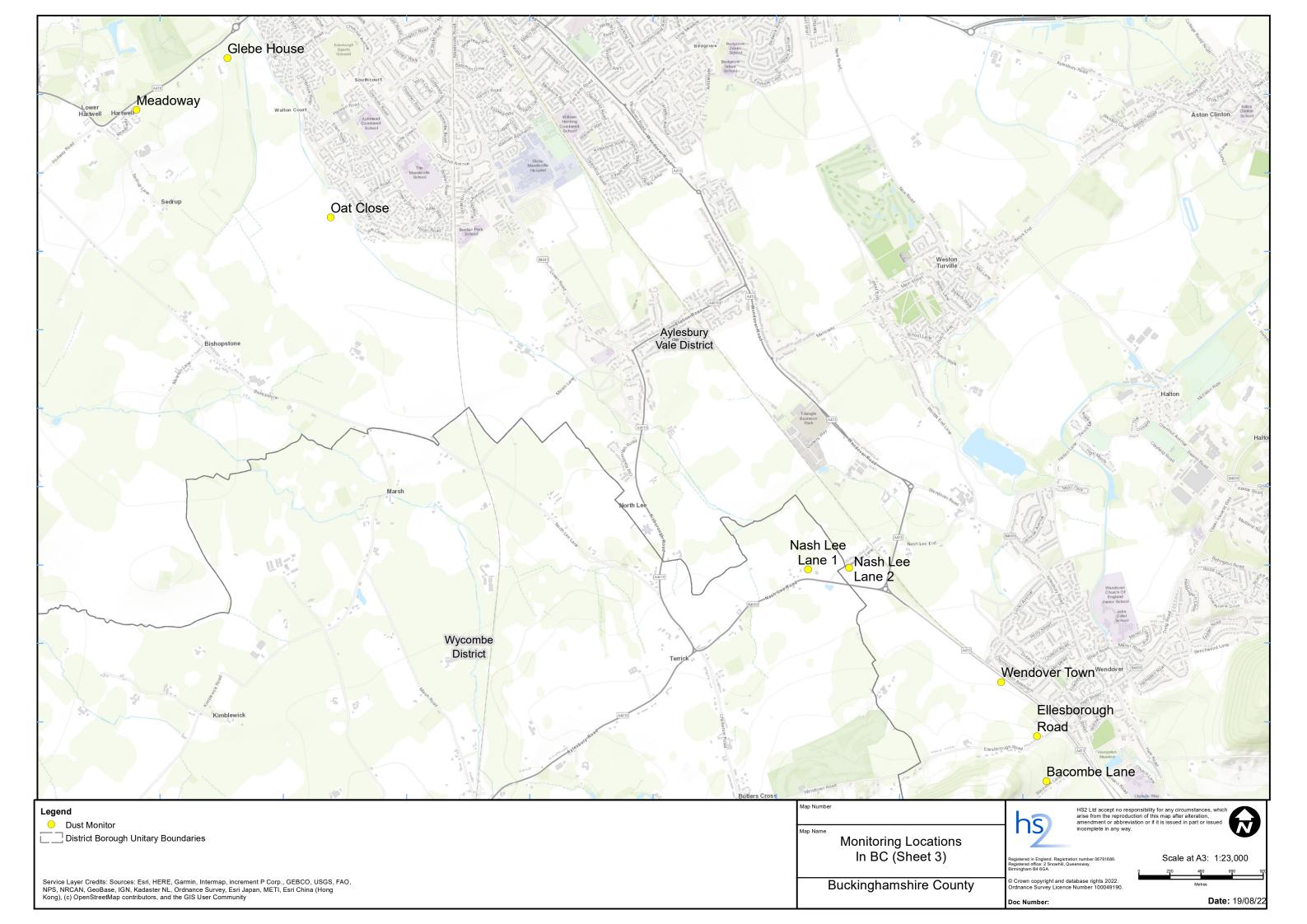
- 1.1.9 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.
- 1.1.10 No (0) complaints were received during the monitoring period (February 2023).
- 1.1.11 Data capture was below 90% for the South Heath monitor, as this monitor was taken down prior to this monitoring period.

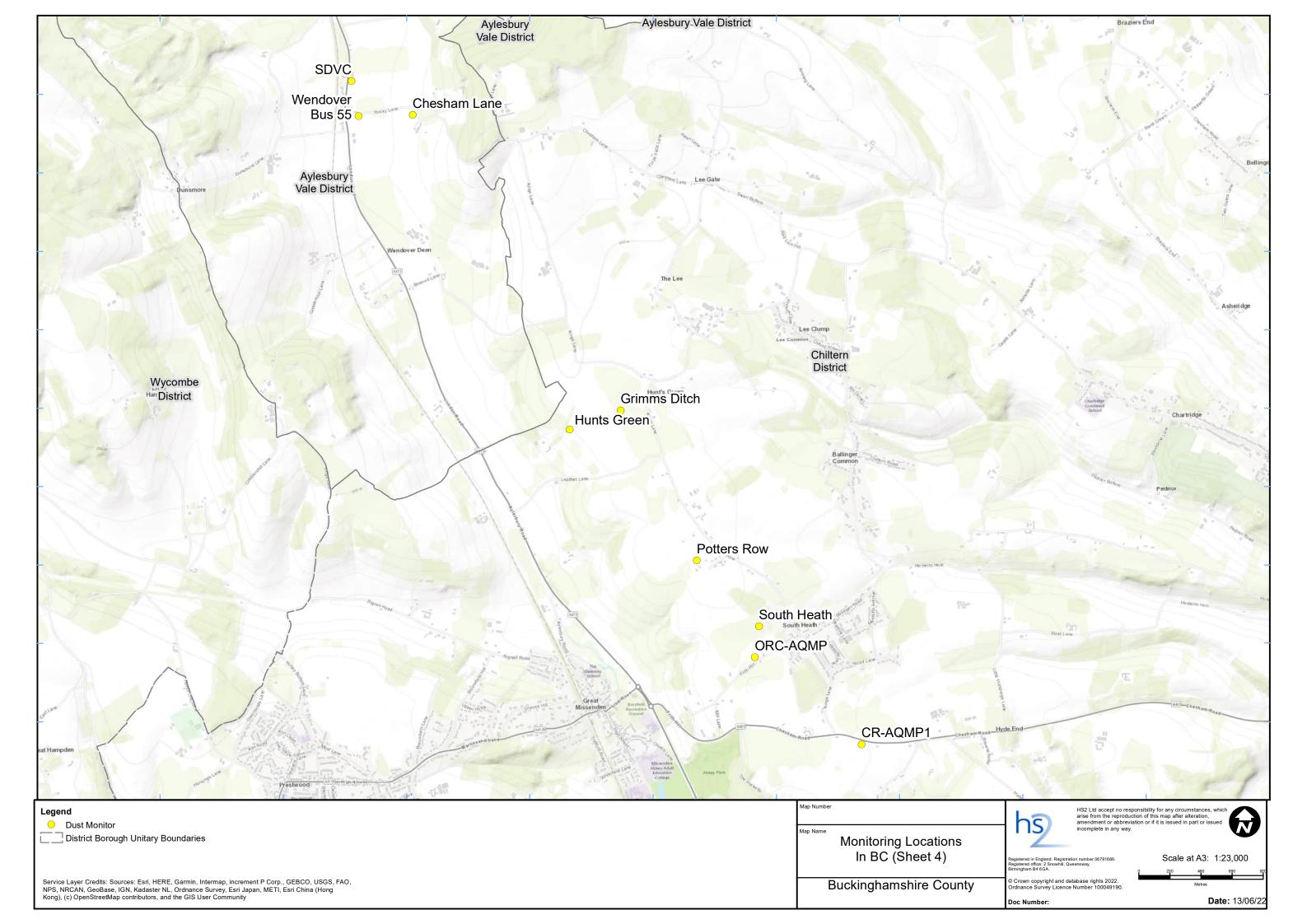
Appendix A - Worksite and Dust Monitoring Locations

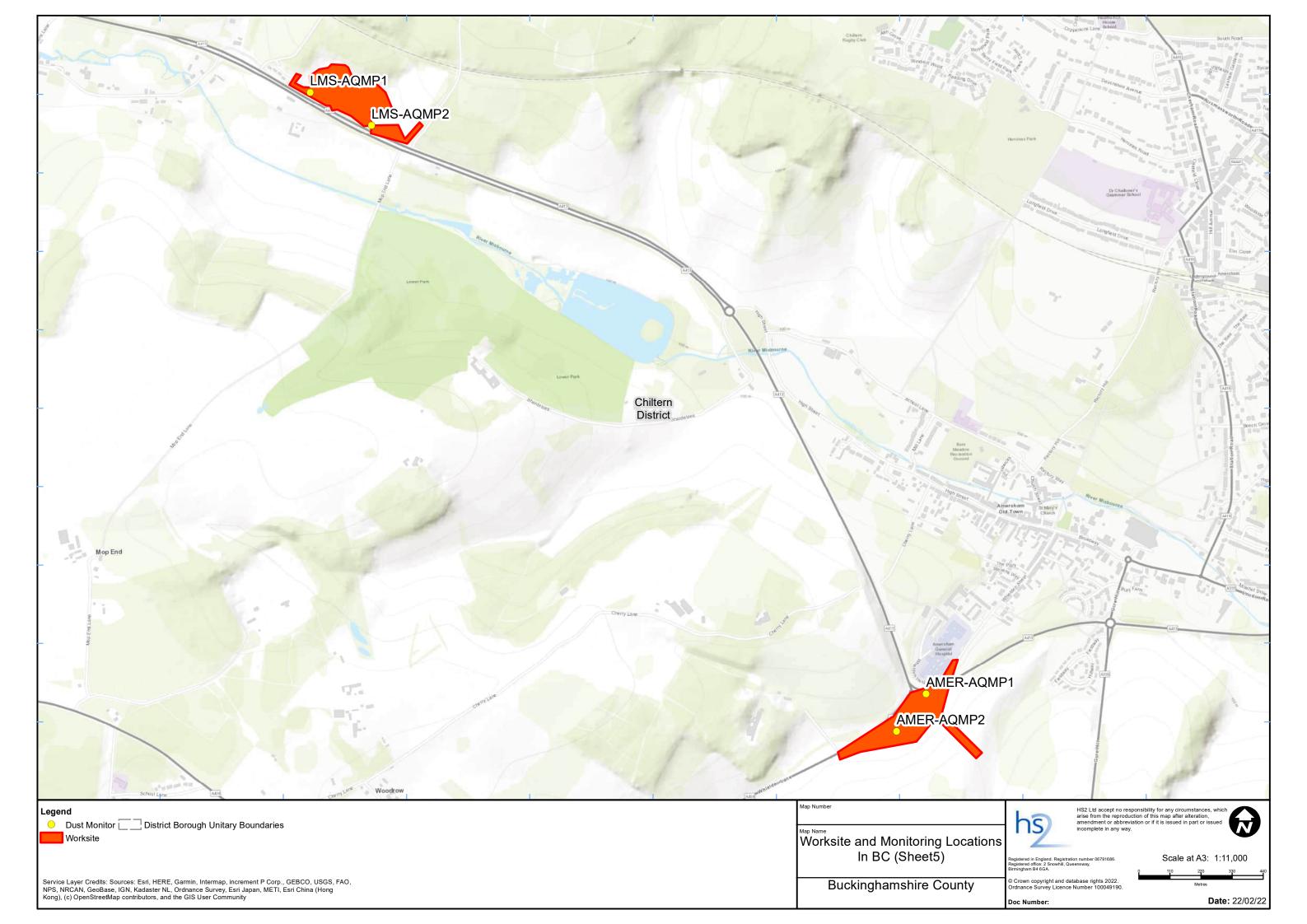
Figures 1-7: Worksite and Monitoring locations within the BC

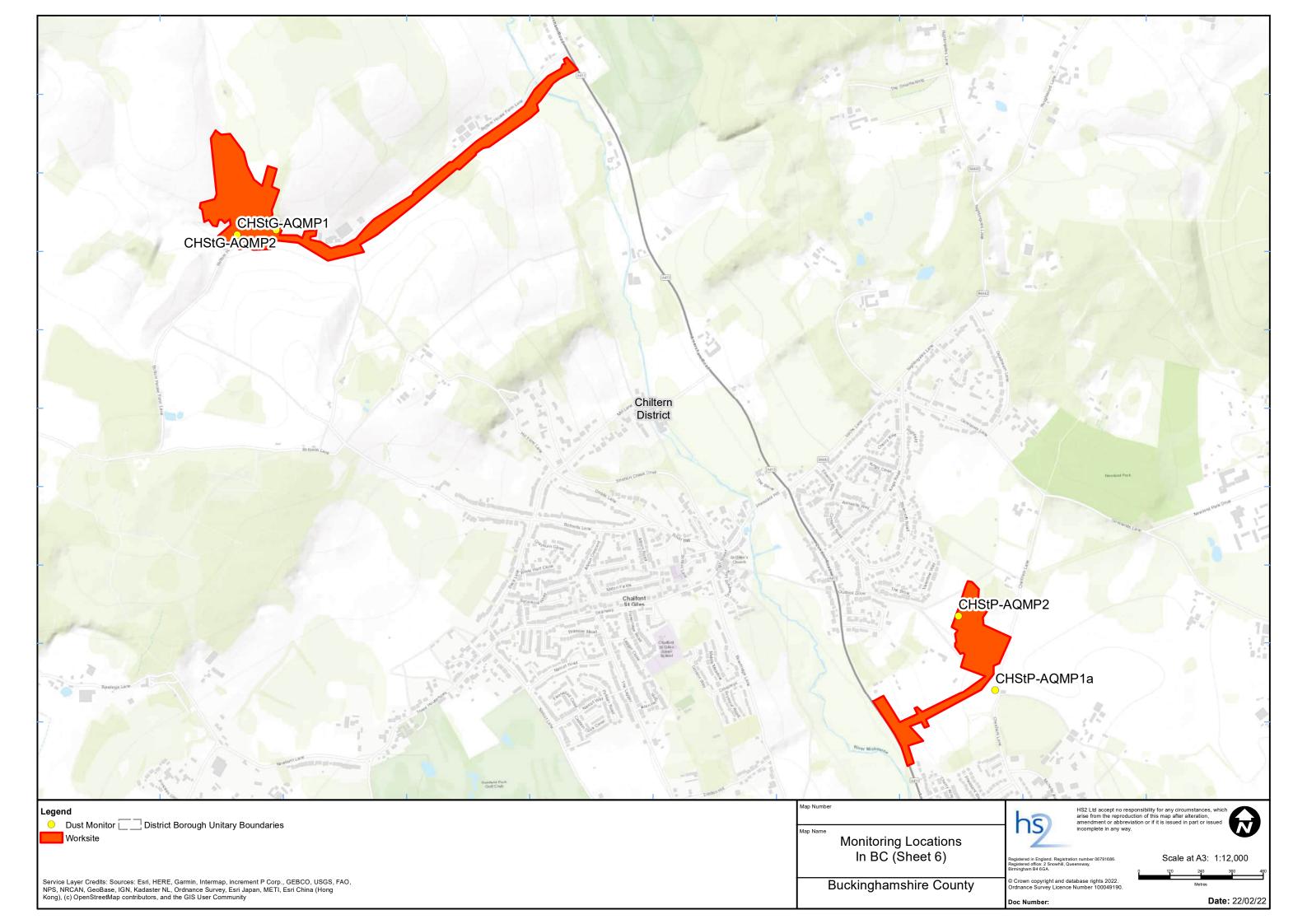


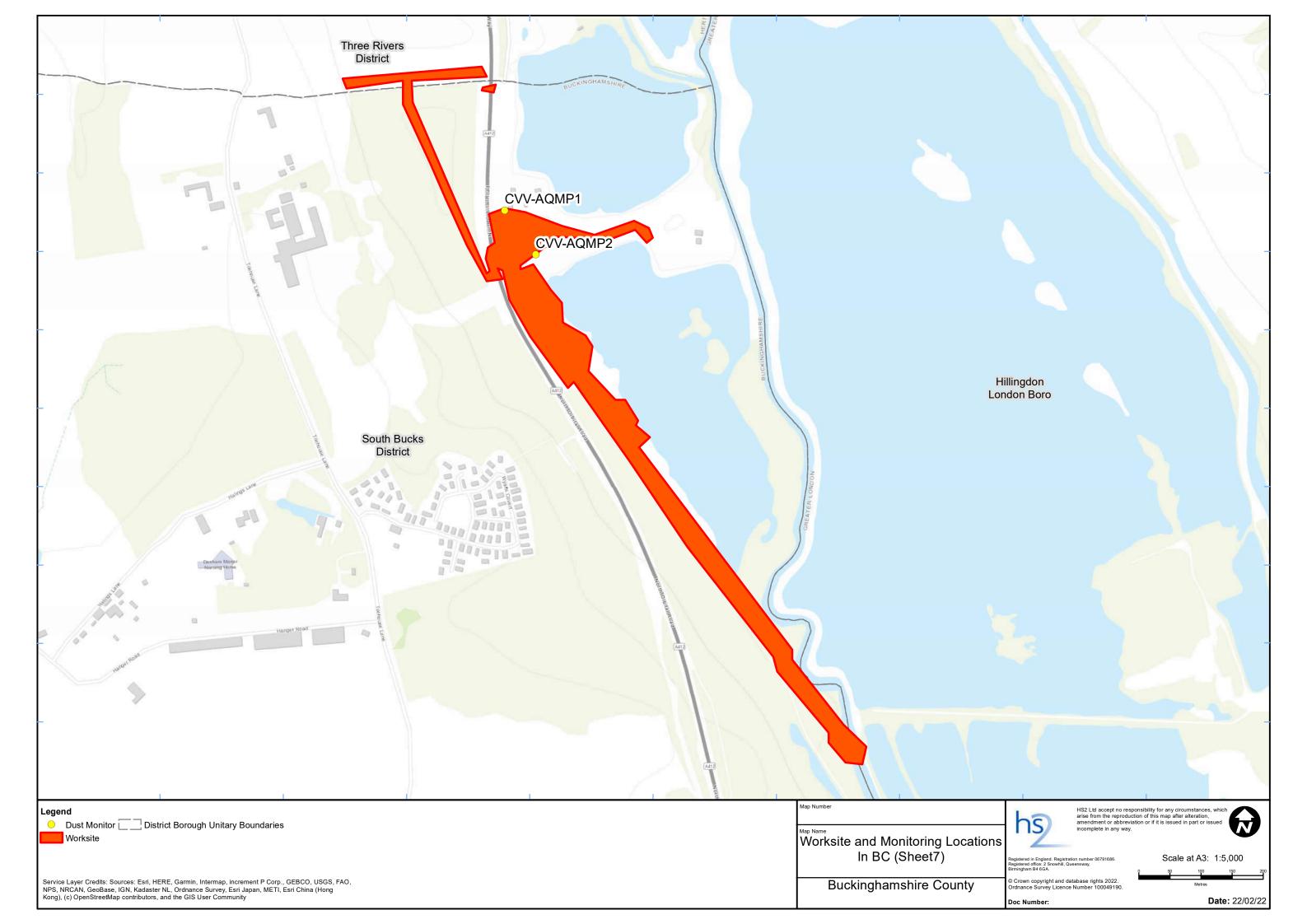












Appendix B - Dust Monitoring Results

Table 1: Dust monitoring locations and November 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/m³)	Minimum 1-hour PM ₁₀ concentration (μg/m³)	Maximum 1-hour PM ₁₀ concentration (μg/m³)	Number of 1-hour periods exceeding trigger level of 190 µg/m³	Data capture (%)
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	М	Yes	Yes	12.7	1.0	173.0	0	76.8
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	11.6	1.0	80.0	0	98.5
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	10.6	1.0	66.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	11.7	1.0	61.0	0	88.2
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	12.6	1.0	60.0	0	100.0
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	11.0	1.0	71.0	0	100.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	5.3	1.0	53.0	0	50.3
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	10.2	1.0	56.0	0	100.0
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	11.3	1.0	56.0	0	81.7
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	11.4	1.0	50.0	0	63.8

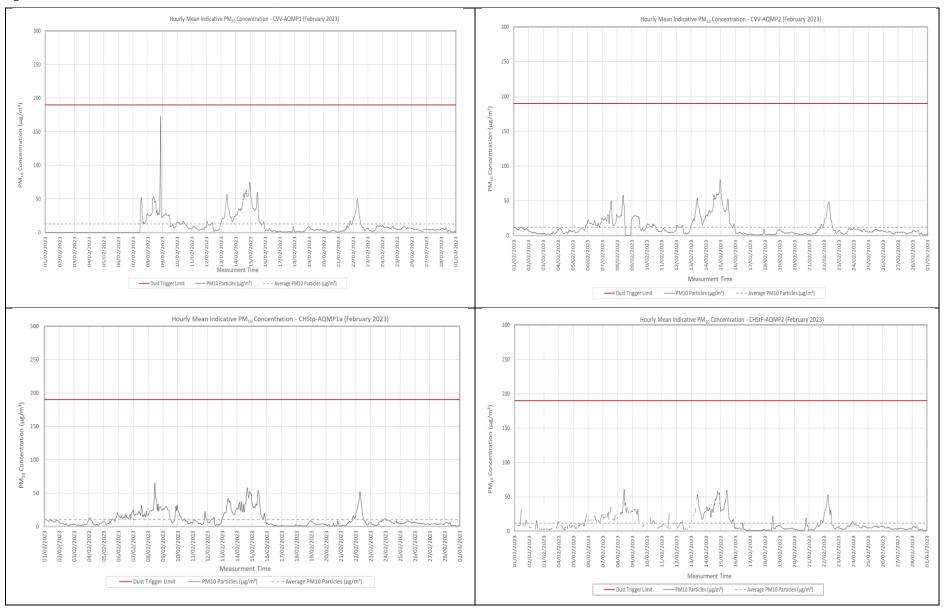
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (μg/m³)	Minimum 1-hour PM ₁₀ concentration (μg/m³)	Maximum 1-hour PM ₁₀ concentration (μg/m³)	Number of 1-hour periods exceeding trigger level of 190 µg/m³	Data capture (%)
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	10.2	1.0	60.0	0	100.0
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	М	Yes	Yes	9.6	1.0	65.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	М	Yes	Yes	9.5	1.0	59.0	0	97.0
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	8.9	1.0	52.0	0	69.0
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	10.3	1.0	67.0	0	99.9
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	9.1	0.3	151.9	0	75.6
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	-	-	-	-	-
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	17.0	1.0	647.0	4	97.5
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	9.4	1.0	58.0	0	99.7
Hunts Green – Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	10.1	1.0	66.0	0	97.8
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	9.3	1.0	57.0	0	98.8
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	10.6	1.0	58.0	0	90.3
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	12.3	1.0	61.0	0	95.1
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	M	Yes	Yes	10.3	1.0	57.0	0	97.2
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	9.5	1.0	46.0	0	95.7

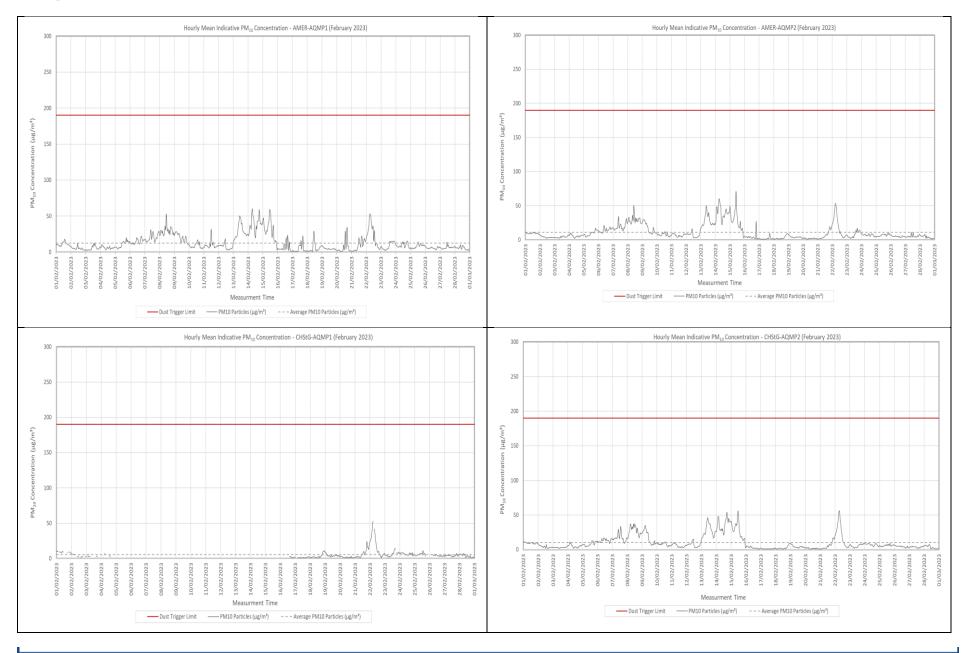
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM₁₀ concentration (μg/m³)	Minimum 1-hour PM₁0 concentration (µg/m³)	Maximum 1-hour PM ₁₀ concentration (μg/m³)	Number of 1-hour periods exceeding trigger level of 190 µg/m³	Data capture (%)
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	3.3	1.0	15.0	0	2.8
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	11.3	1.0	58.0	0	80.1
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	9.6	1.0	55.0	0	93.8
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	10.3	1.0	52.0	0	93.5
Ellesborough Road - Dust	486458, 207550	Ellesborough Road, Wendover	М	Yes	Yes	8.4	1.0	74.0	0	63.2
Nash Lee Road - Dust	484766, 208782	Nash Lee Lane (west)	М	Yes	Yes	10.5	1.0	51.0	0	91.8
Nash Lee Lane - Dust	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	10.4	1.0	135.0	0	76.8
Bacombe Lane – Dust	486528, 207217	Bacombe Lane, Wendover	М	Yes	Yes	9.2	1.0	54.0	0	78.7
SDVC - Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	11.1	1.0	74.0	0	97.5
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	10.6	1.0	64.0	0	99.9
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	10.3	1.0	58.0	0	87.4
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	M	Yes	Yes	9.1	1.0	48.0	0	87.9
Grove Farm	486957, 206908	Grove Farm, London Road, Wendover	М	Yes	Yes	5.5	1.0	14.0	0	19.6

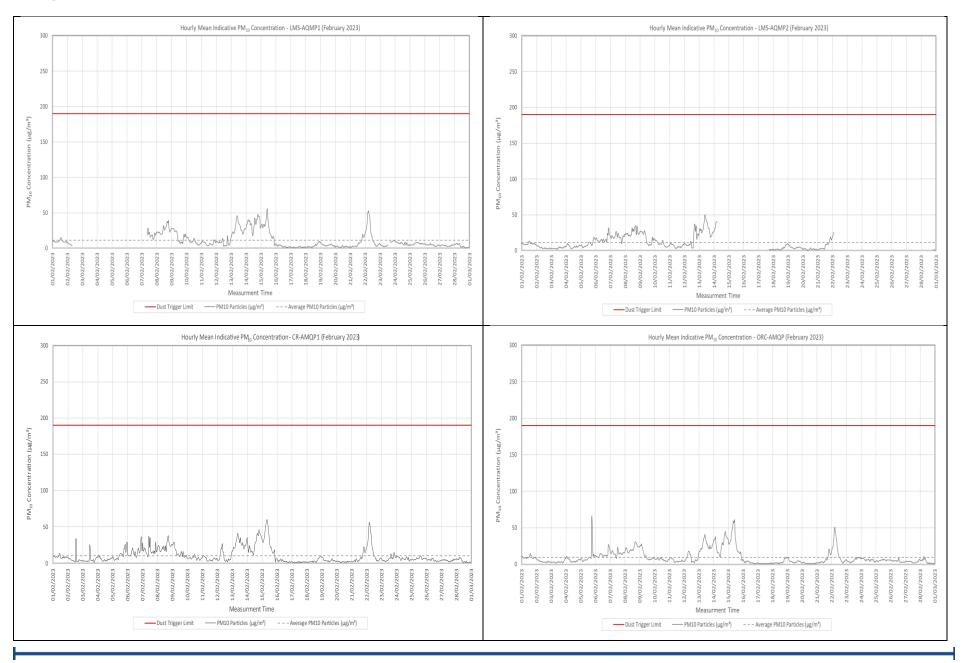
Table 3: Summary of exceedances during period (February 2023)

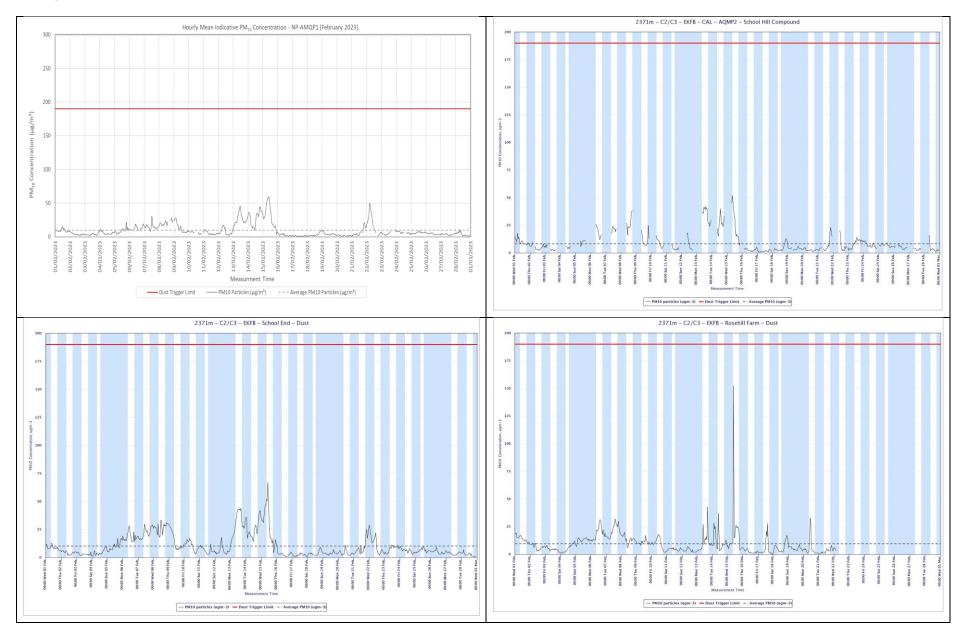
Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Potters Row	26/02/23: 14:00 – 14:59: 647 μg/m ³ 16:00 – 16:59: 313 μg/m ³ 17:00 – 17:59: 255 μg/m ³	No works were being undertaken on that area at that time	Exceedance is considered non work related
Potters Row	28/02/23: 02:00-02:59 333 μg/m ³	The site was closed at this time and no works were being undertaken.	Exceedance is considered non work related

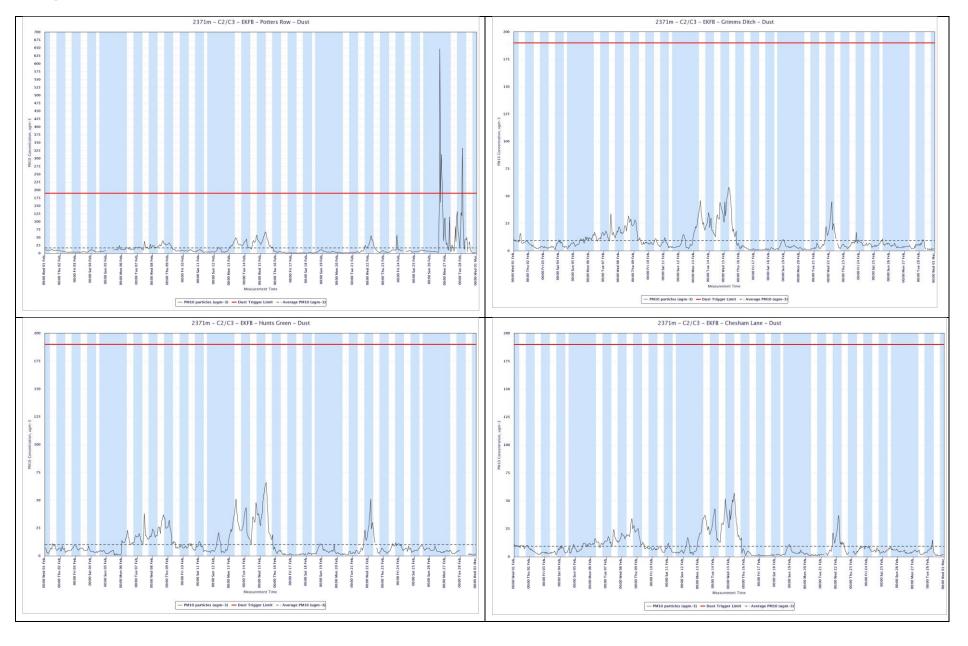
Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentration for all dust monitors

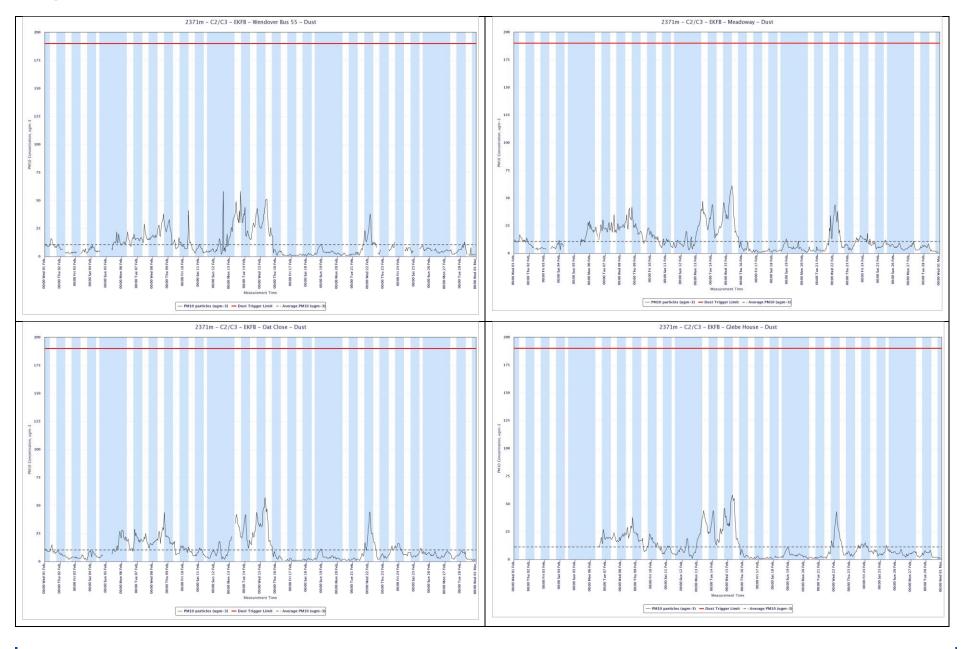


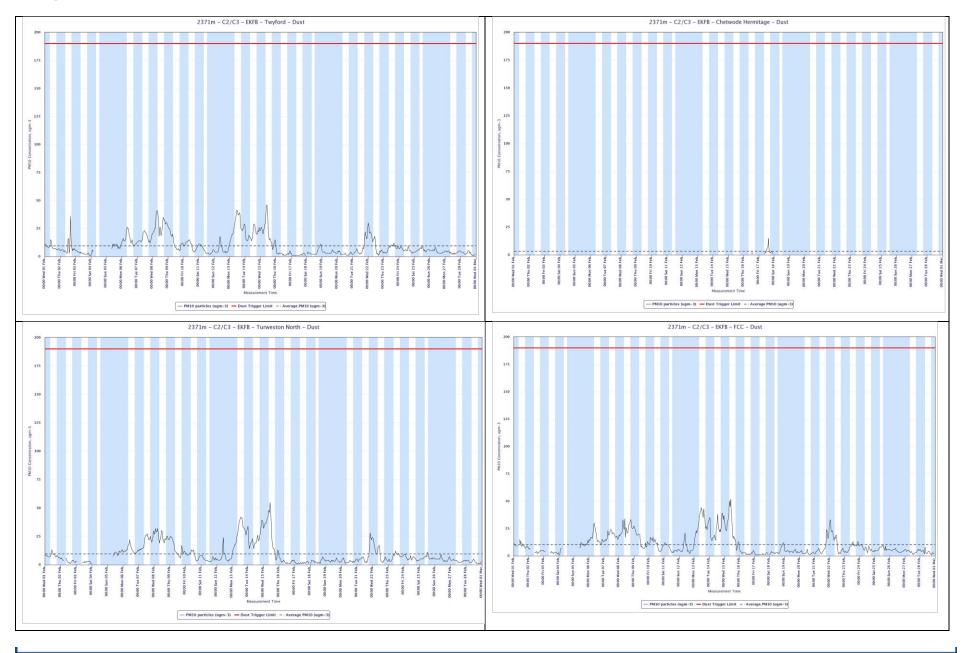


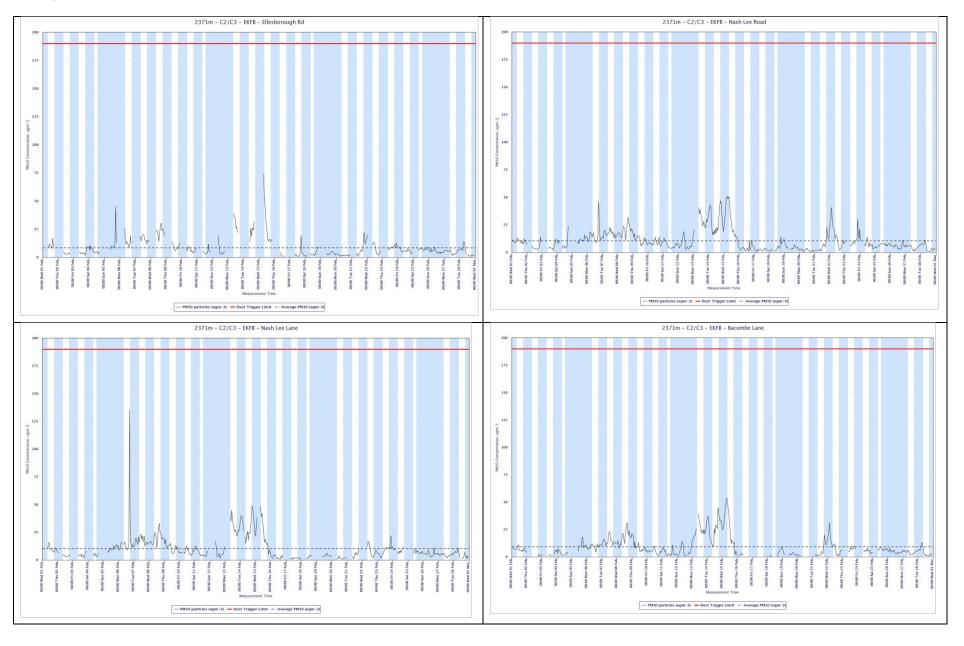


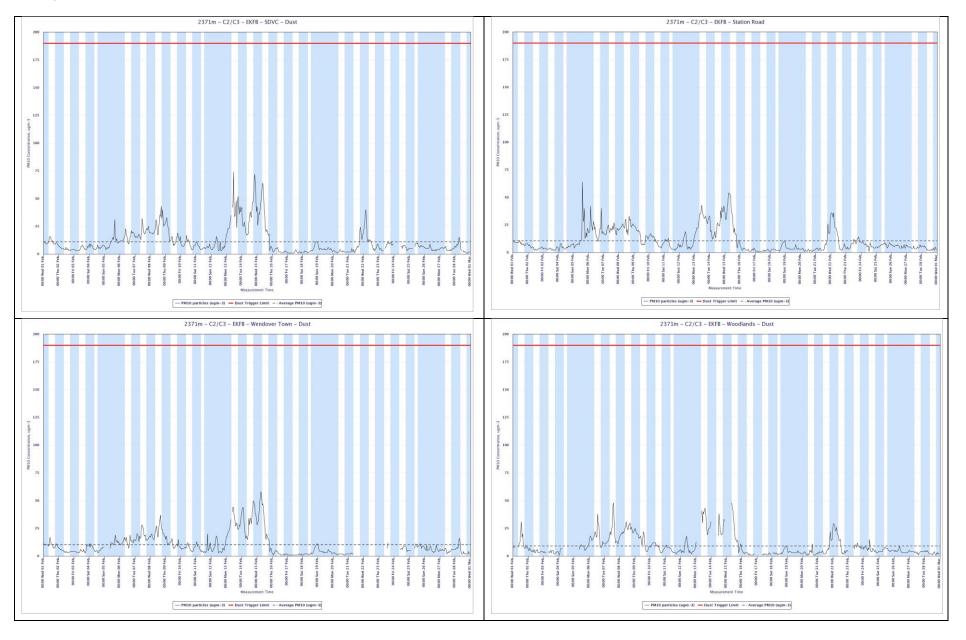




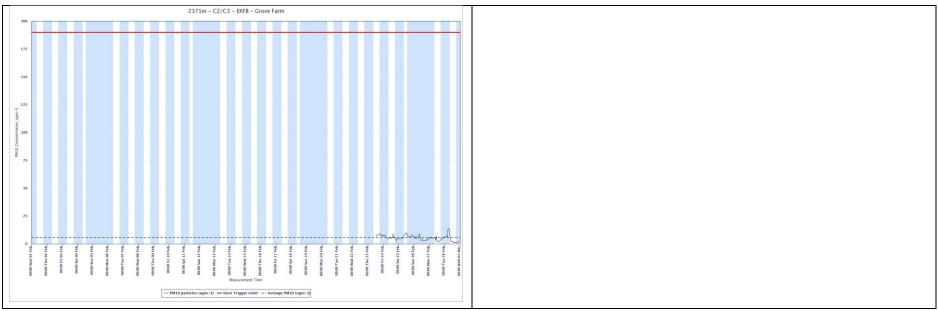








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