December 2022

HS2

Air Quality and Dust Monitoring Monthly Report - December 2022 **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 November 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for December 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 worksite

- 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 filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within the deck.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Secondary Lining;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connection to Tunnels: demolition and reinforced concrete works; and
- Basement Construction.

Amersham Vent Shaft

- General Site Activities:
- Internal Structure: concrete walls and floors; and
- Basement Construction: excavation to B1 formation levels, capping beams and prop beams

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.

Little Missenden Vent Shaft

- General site activity;
- Collar Construction;
- Secondary Lining; and
- Small basement construction; capping beam and prop beams.

Chesham Road Vent Shaft

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

North Portal work site

- Permanent Access Road: drainage and services, scrape formation, hardstanding and kerbing, asphalt and signage;
- Piling Platform Area 1: traffic management and temporary access from Frith Hill Road:
- North Portal Compound: general plant;
- Dismantle Temporary Access Haul Road;
- North-Portal Building Platform: scraping / hardstanding / surfacing / services/ drainage;
- North-Portal Tracks Platform: scraping / hardstanding / surfacing / services / drainage;
- Piling Platform Reinstatement and Maintenance: scraping / hardstanding;
- 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.

Calvert Area

- Charndon Lodge Underbridge* rebar fixing, formwork lifting and concrete pouring
- Charndon Lodge Pumping station concrete shaft sinking and excavation works.
- East West Rail Overbridge* back of wall drainage and concrete repairs.
- Perry Hill Overbridge* rebar fixing, formwork lifting and concrete pouring
- Addison Road Overbridge reinforced earth embankment wall and approach earth embankments.
- SCL/08 Overbridge no works.
- OXD Culverts (EWR Culvert, IMD West Culvert and IMD East Culvert) rebar fixing, formwork lifting and concrete pouring (no works at EWR Culvert or IMD East Culvert).
- Portway Culvert* waterproofing, rebar and shuttering fixing for headwalls and chambers.
- OXD Line Earthworks* no works.
- Calvert Cutting* no works.
- IMD* (Infrastructure maintenance depot) no works.
- Hills Farm Earthworks stockpile fill and maintenance.
- MCJ Line Earthworks no works.
- Bat Mitigation Structure construction of piling platform and sheet piling.
- GUN28 Overbridge pile excavation and cropping,
- River Ray Culvert and Adams Accommodation Underbridge no works.
- Edgcott Road Overbridge eat abutment piles.
- Doddershall No.6 and No.7 Culvert rebar and shuttering fixing for headwalls and chambers.
- Quainton Temporary Utility Diversions* utility connections, cable pulling and backfilling of UTX shafts.
- West Street Temporary Utility Diversions* field trenching for duct laying, installation of connection chambers and utility connections.

- SGN Pipe Temporary Diversions* field trenching for duct laying.
- Secant Retaining Wall* topsoil stripping and piling platform creation.
- School Hill Batching Plant * production of concrete.
- MHR Utilisation* haulage of material across worksites.

Twyford to Greatworth

- Aggregate deliveries
- Processing Limestone (crushing and screening)
- Dewatering and drainage maintenance

Aylesbury

Moat Farm:

- Stoke Mandeville Bypass piling
- Stockpiling
- Siltbuster setup
- Earthworks Aylesbury South Cutting

Westfield:

- PRA Overbridge Piling
- Earthworks Aylesbury South Cutting
- Stockpiling
- Overhead utility diversion
- Haul road construction

Oat Close:

- Earthworks Aylesbury Embankment
- Stockpiling
- Haul road construction

Glebe House:

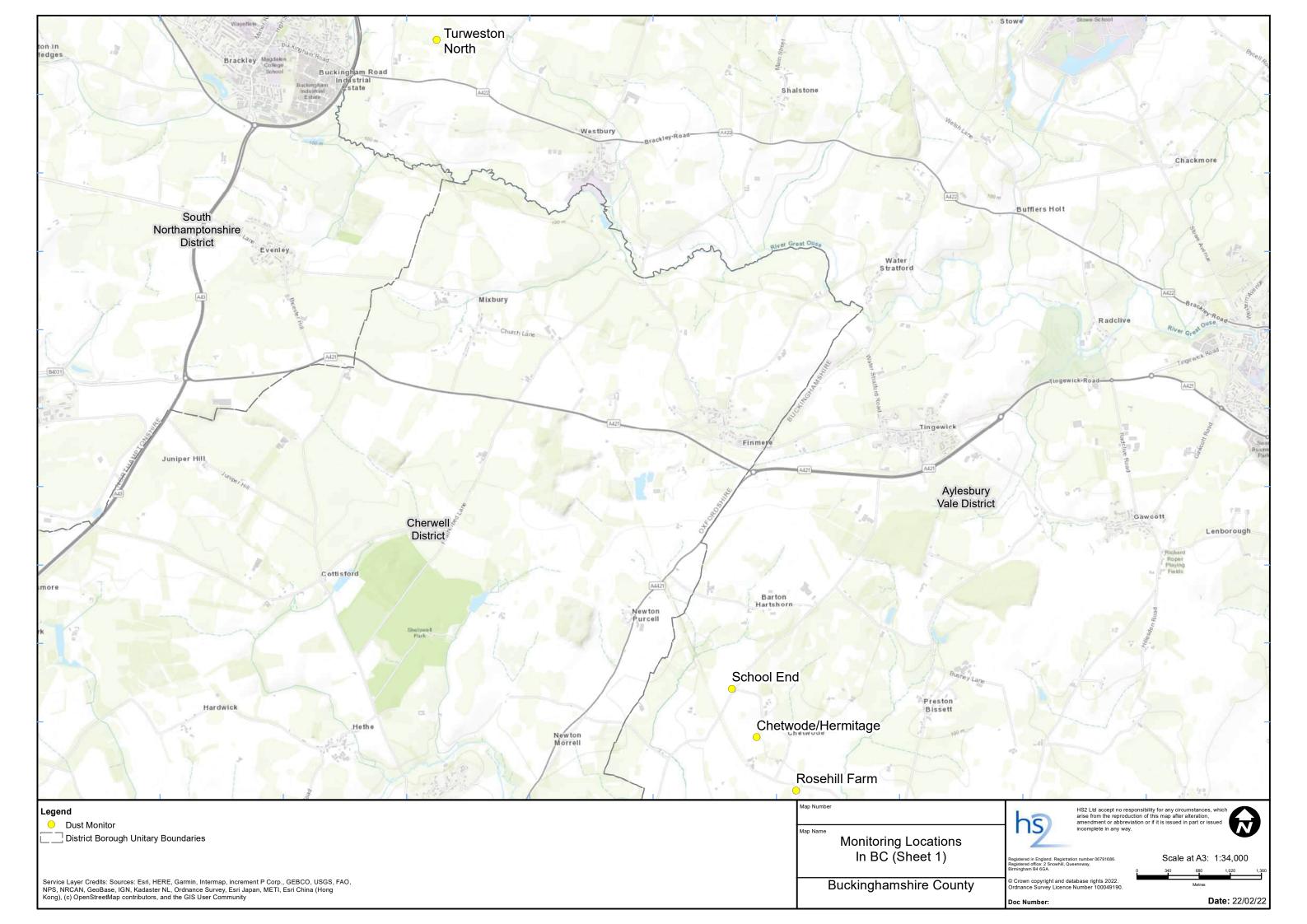
- Earthworks Aylesbury North Cutting
- Earthworks A418 Overbridge
- A418 Overbridge Piling
- Stockpiling
- Piling platform works
- Haul road construction

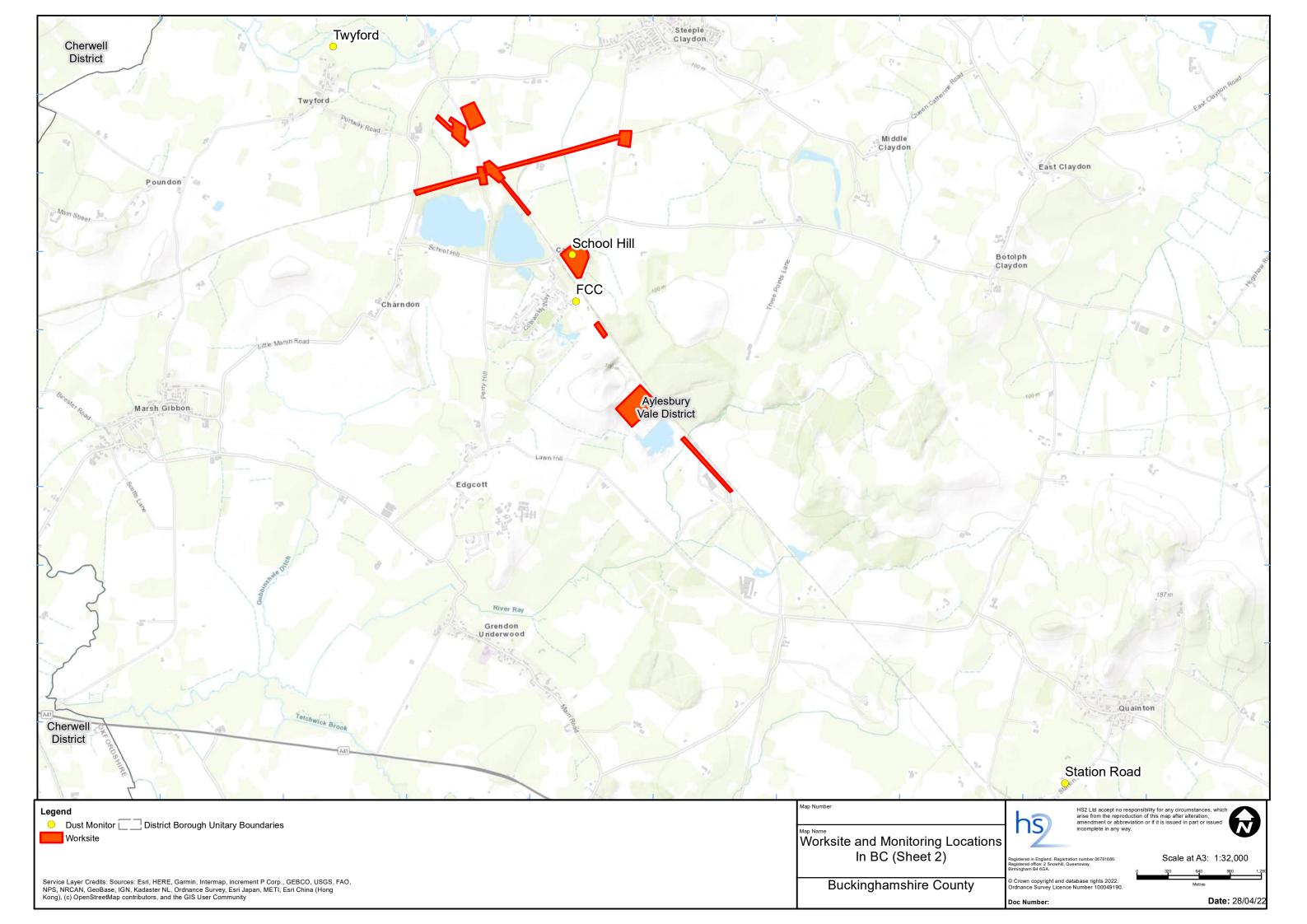
Meadoway:

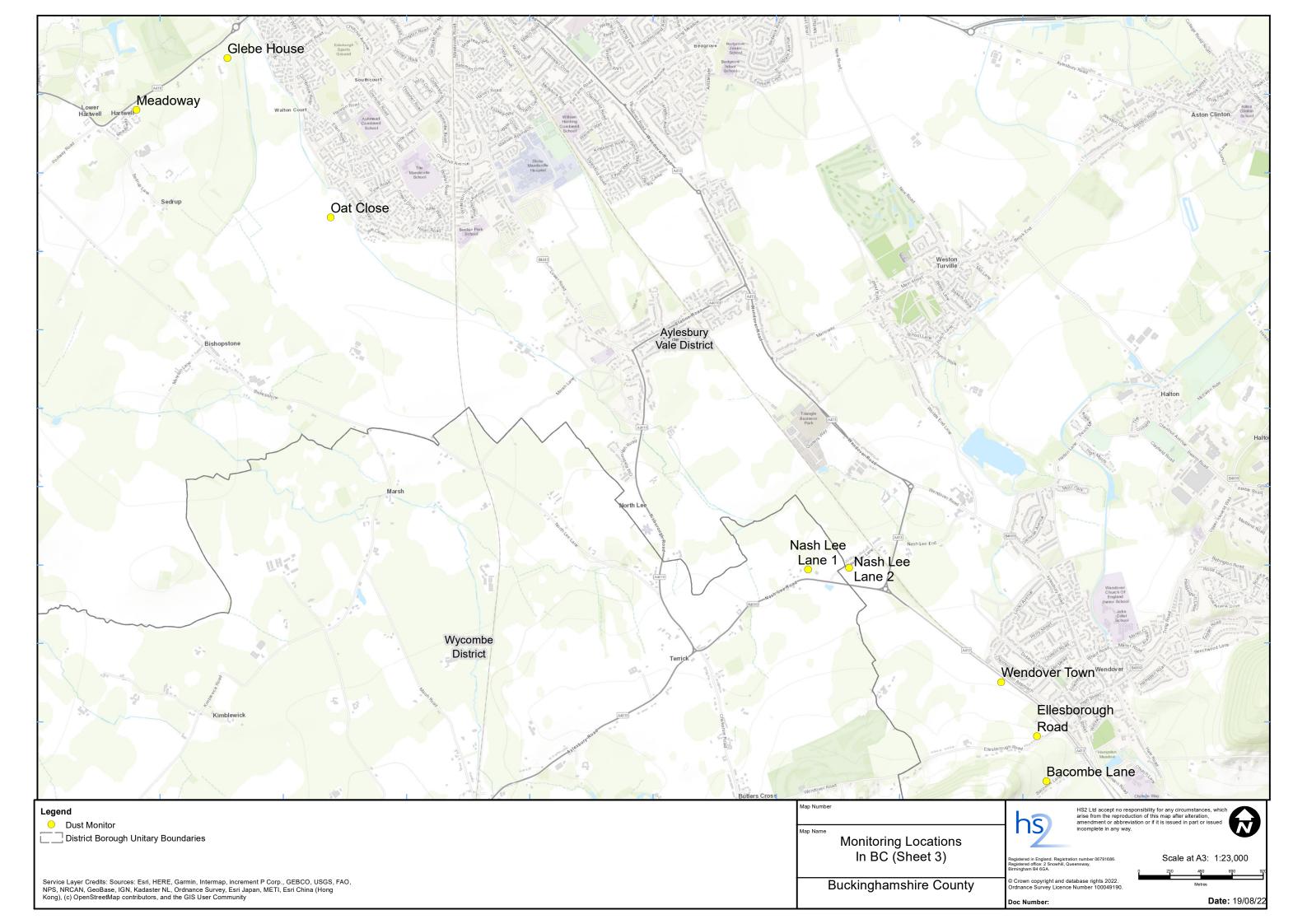
- Earthworks Aylesbury North Cutting
- A418 Overbridge piling
- Stockpiling
- Piling platform works
- Haul road construction
- 1.1.5 Thirty-seven (37) dust monitors are installed around the worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor 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 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.
- 1.1.9 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.
- 1.1.10 No (0) complaints were received during the monitoring period (December 2022).

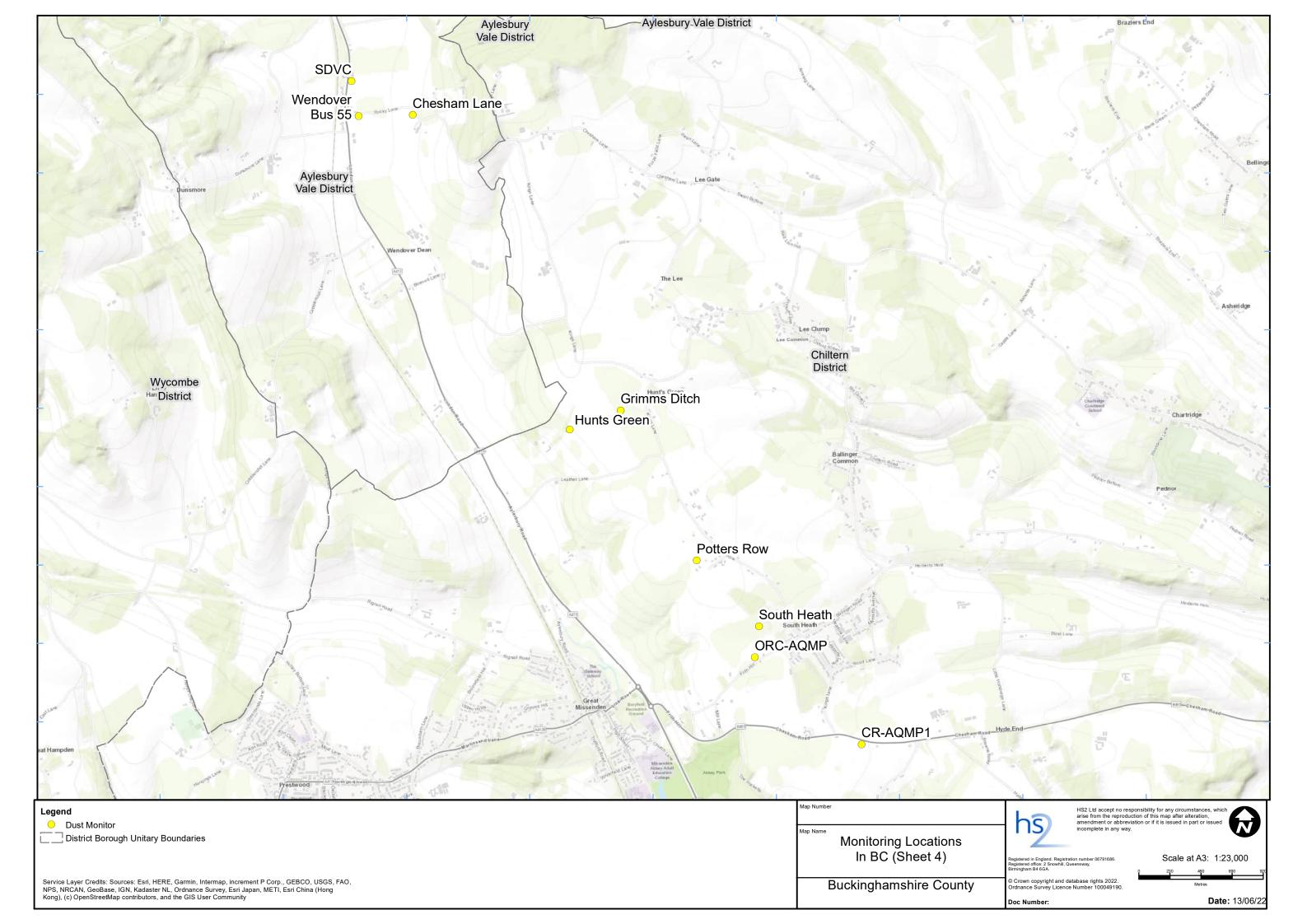
Appendix A - Worksite and Dust Monitoring Locations

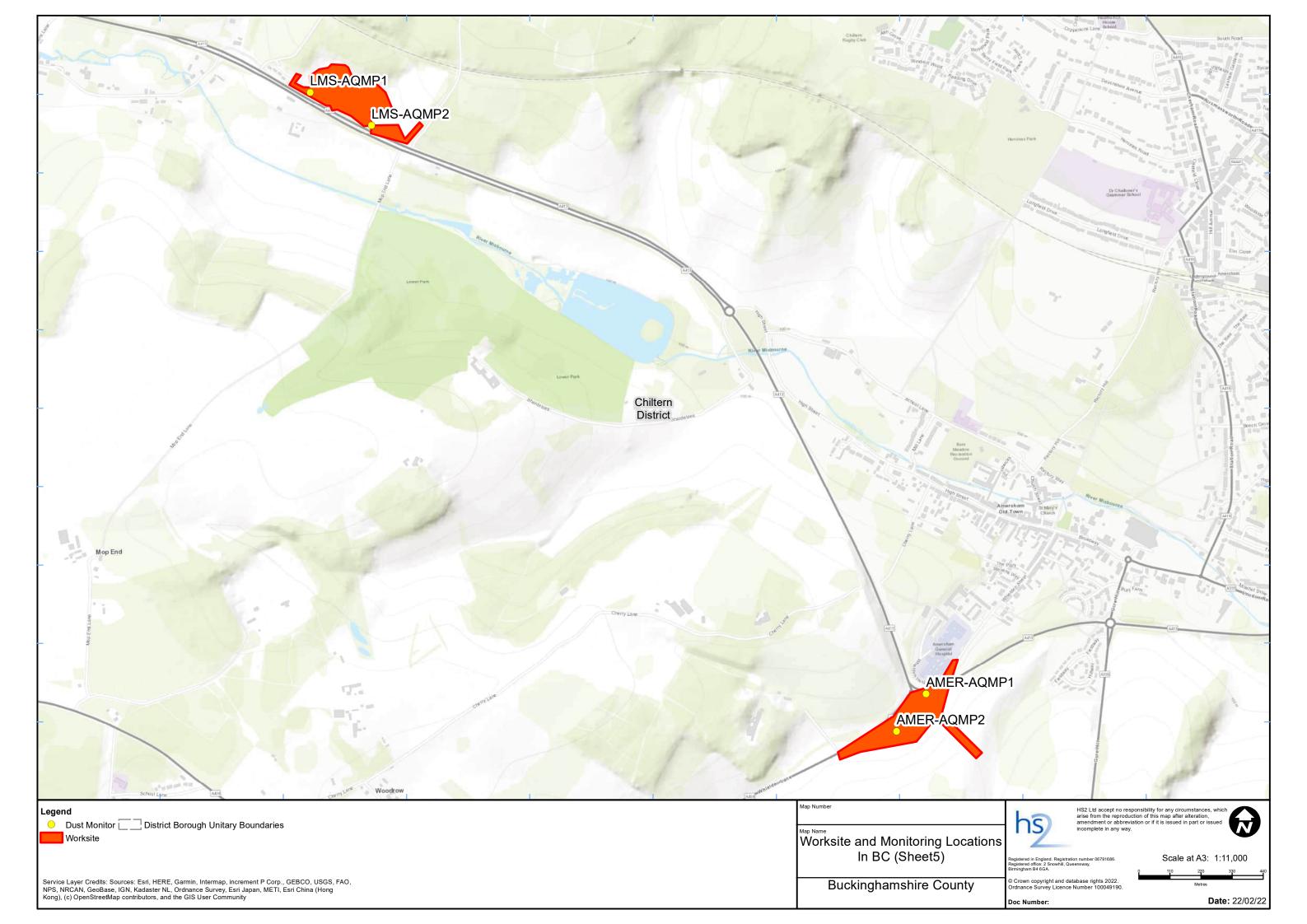
Figures 1-7: Worksite and Monitoring locations within the BC

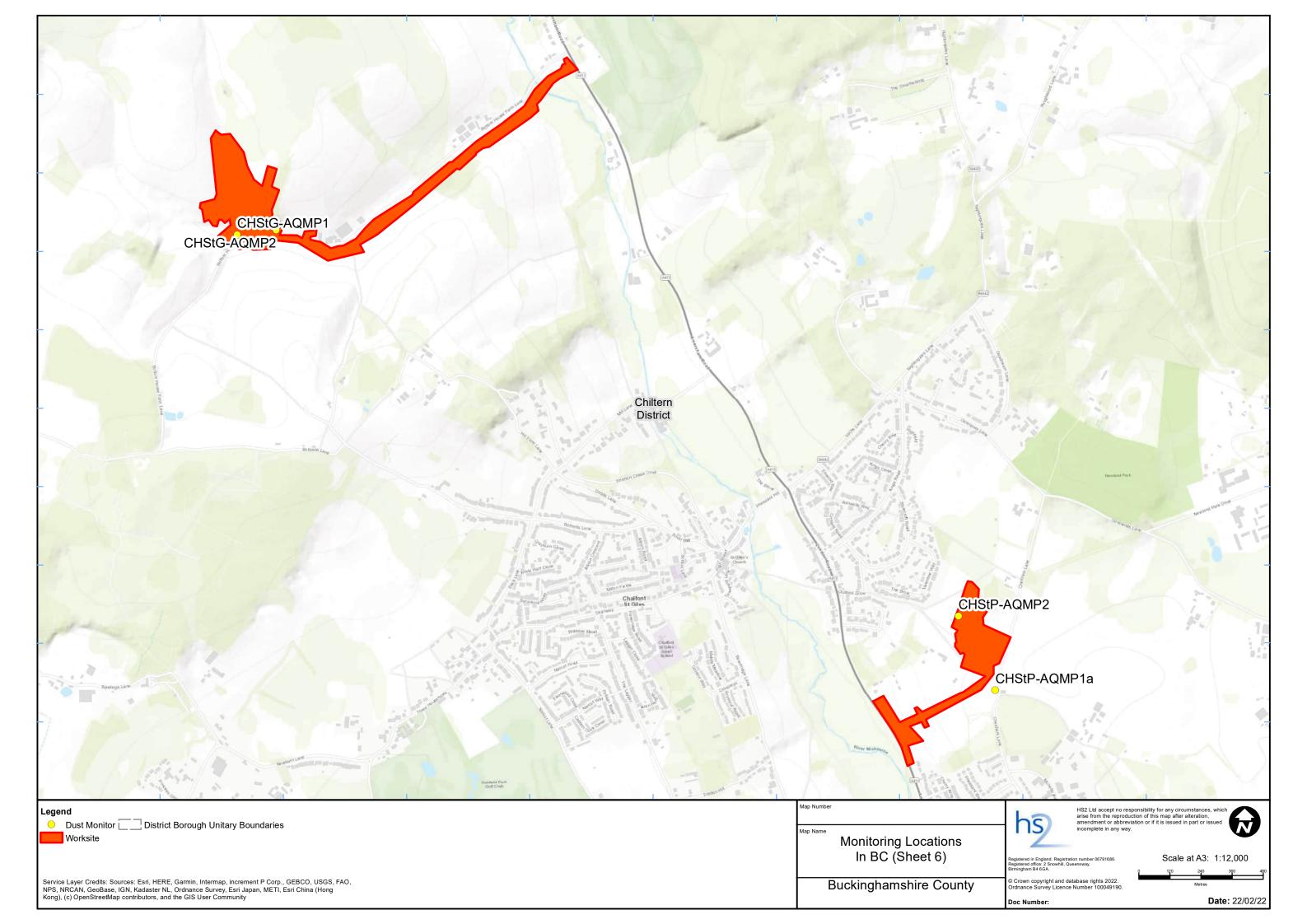


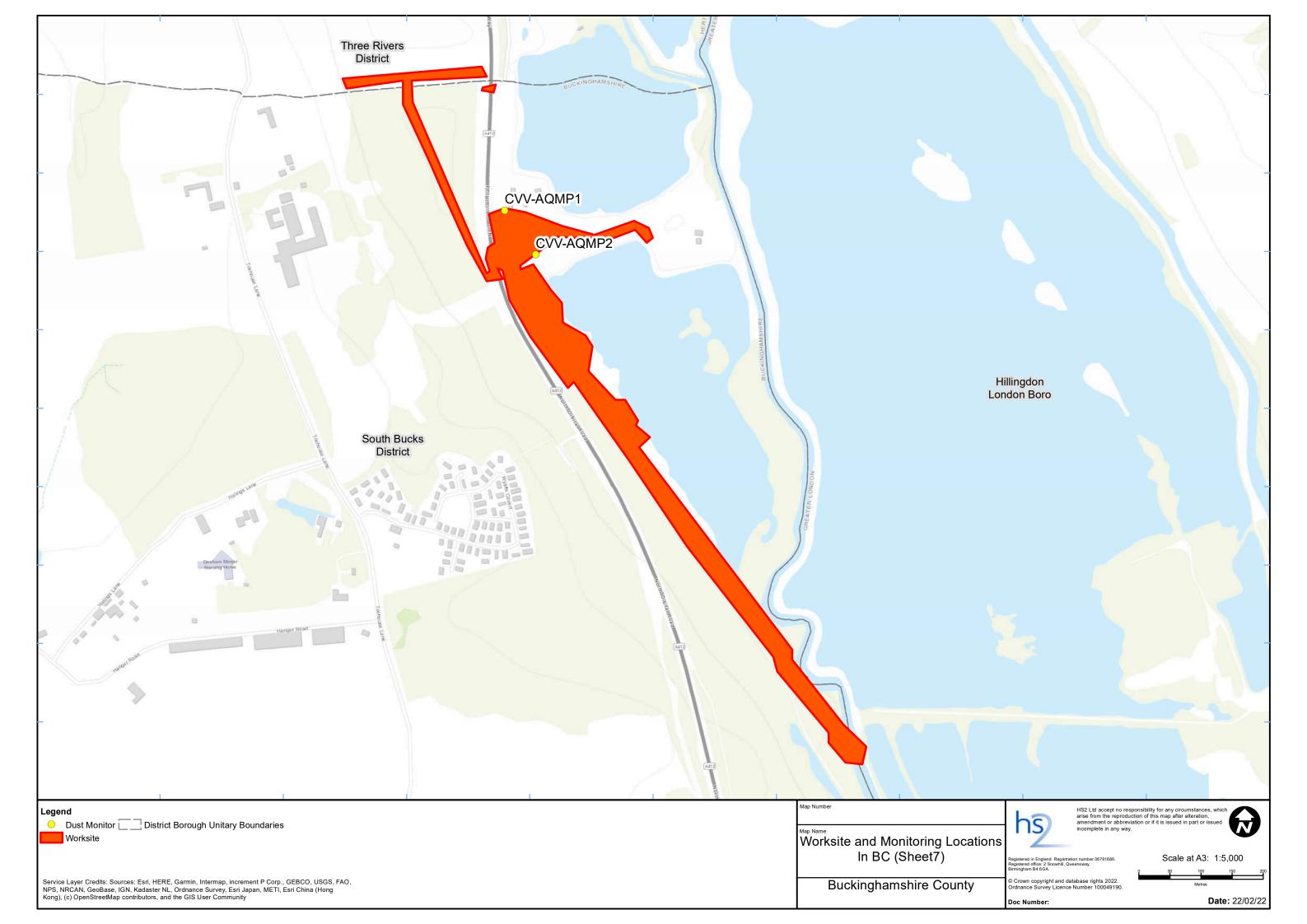












Appendix B - Dust Monitoring Results

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	16.0	3.0	57.0	0	47.3
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	11.8	1.0	64.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	11.2	1.0	53.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	15.7	1.0	58.0	0	68.3
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	12.0	1.0	53.0	0	100.0
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	11.7	1.0	49.0	0	100.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	12.4	1.0	49.0	0	76.2
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	11.2	1.0	48.0	0	99.9
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	15.0	1.0	70.0	0	72.6
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	12.5	1.0	88.0	0	100.0

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 PM₁0 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	8.6	1.0	41.0	0	68.5
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	M	Yes	Yes	9.9	1.0	38.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	М	Yes	Yes	9.1	1.0	42.0	0	90.9
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	10.1	1.0	52.0	0	57.4
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	12.2	1.0	95.0	0	65.9
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	9.5	1.2	603.5	1	36.2
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	14.1	3.0	70.0	0	32.5
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	10.6	1.0	32.0	0	35.6
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	11.6	1.0	41.0	0	66.0
Hunts Green – Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	10.2	1.0	37.0	0	67.5
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	-	-	-	-	-
Wendover Bus 55 – Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	12.0	1.0	49.0	0	44.8
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	10.7	1.0	50.0	0	30.0
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	11.2	1.0	79.0	0	58.5
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	12.9	1.0	78.0	0	44.6

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 PM₁0 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	8.8	2.0	20.0	0	7.1
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	12.3	1.0	56.0	0	61.3
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	9.5	1.0	33.0	0	22.6
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	9.3	1.0	37.0	0	16.0
Ellesborough Road - Dust	486458, 207550	Ellesborough Road, Wendover	М	Yes	Yes	12.8	1.0	40.0	0	9.7
Nash Lee Road - Dust	484766, 208782	Nash Lee Lane (west)	М	Yes	Yes	8.7	1.0	72.0	0	39.2
Nash Lee Lane - Dust	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	11.4	1.0	62.0	0	49.5
Bacombe Lane – Dust	486528, 207217	Bacombe Lane, Wendover	М	Yes	Yes	8.5	1.0	41.0	0	18.1
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	18.4	3.0	312.0	1	33.74
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	14.3	1.0	61.0	0	57.1
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	11.0	1.0	50.0	0	71.0
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	М	Yes	Yes	12.2	4.0	32.0	0	11.3

Table 2: Summary of exceedances during period (December 2022)

Monitoring Site ID	Period of trigger alert &	Investigation	Outcomes / Resolution / Remedial measures implemented		
	Concentration recorded				
Rosehill Farm – Dust	10/12/2022: 09:00 – 09:59; 603.5 µg/m³	This trigger was recorded at the weekend, when no construction activities were being undertaken.	-		
SDVC – Dust	06/12/2022 23:00 - 07/12/2022 16:59 20/12/2022 09:00 - 22/12/2022 20:59 23/12/2022: 13:00 - 17:59 24/12/2022: 12:00 - 19:00 26/12/2022 08:00 - 28/12/2022 12:59 29/12/2022 09:00 - 30/12/2022 04:59	Data were investigated with SEC and marked as potentially erroneous.	Data were marked as potentially erroneous and removed from calculations. Issue was reported internally and to HS2. Visit from SEC was arranged after December's shutdown and monitor was retrieved to be sent to the lab for repairs.		

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

