October 2023

HS2

Air Quality and Dust Monitoring Monthly Report - October 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 October 2023.
- 1.1.2 Figures 1-7 in Appendix A present 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 worksites, as presented in Appendix A, Figures 1-7, include:

CVV LTP1 worksite

- North Embankment Compound: compound operation;
- DWSC Compound: compound operation;
- Haul Road and Jetty Maintenance River Colne to GUC: operation and maintenance;
- Ground Investigation Works: Gl works;
- Pier Construction: arch form deck FRC works for pile cap and pier, standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- ATFS: site preparation, bulk earthworks and permanent drainage;
- Water pumping management;
- Satellite welfare;
- Generator farms;
- North Abutment: transportation (yard supporting activities) and FRC works for ancillary items;
- A412 Gas Crossing Emergency Dismantling;
- Fencing;
- Environmental Maintenance;
- 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) stressing and grouting, external PT and crane assembly/disassembly;
- Deck Finishes Logistics: preparation and operation of storage yards and installation of below deck access provision, traffic management on the deck surface, installation of parapets, noise barriers, troughs, pipes, steel works and other minor material to the storage yards and deck, installation of accesses top of the deck (HAKI stairs) and deck finishes support plan;

- Deck Finishes On-deck Construction: construction of robust kerbs, installation of parapets, construction of concrete stitch, filling of voids and top openings, verge deck waterproofing, trough installation, noise barriers installation and north abutment works;
- Deck Finishes In-deck Construction: diaphragm walls and concrete works within the deck, drainage works within the deck and steel works within the deck; and
- Landscaping: advanced Works including removal of cofferdams, early earthworks including ground profiling and cut, Initial ground drainage including manhole chamber, early soil (subsoil and topsoil) placement and tree removal & vegetation removal.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Shallow Basement Construction: basement internals & headhouse concrete works;
- Ground Level Works: headhouse concrete works and external works; and
- Building Trade: external and internal works.

Amersham Vent Shaft

- General Site Activities;
- Tunnel Connections;
- Headhouse Superstructure Concrete Works;
- Landscaping; and
- Permanent Drainage.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connections to Tunnels;
- Ground Level Works: headhouse concrete works and ATS buildings; and
- Building Trades: external works and internal works.

Little Missenden Vent Shaft

- General site activity;
- Tunnel Connection;
- Small basement construction; headhouse basement internals; and
- Headhouse Superstructure Concrete Works.

Chesham Vent Shaft

- General site activity: general compound;
- Internal Structure: reinforced concrete works;
- Ground Level Works: headhouse ATS concrete works and external works; and
- Building Trades: internal works.

North Portal work site

- General Plant: site support;
- Piling Platform Reinstatement: scraping/hardstanding/earthworks and dismantling piling platforms;
- Porous Portal Structure: construct reinforced concrete frame and concrete works;
- TBM Arrival: preparation for TBM break-through; and
- Construct North Portal Building: scraping/ hardstanding/surfacing/services/drainage.

North Chilterns Area

Potters Row, Grimms Ditch

- Earthworks (relocation of stockpiles from Mulberry Park to Eastern Rocky Lane)
- Fugro drilling at Grimms ditch and filling in voids with stone.
- Rig setup at Grimms Ditch

Chesham Lane, Wendover Bus 55

- Earthworks Excavation of materials for landscaping
- Earthworks Hauling chalk from Eastern Rocky Lane to Small Dean South Embankment

Ellesborough Road

- Utilities diversions on Ellesborough Road diversion (Vac-ex for digs, cable pulling etc..).
- Ellesborough Road East/West embankment tie-ins.
- Remedial works on Ellesborough Road temporary bridge.
- De-vegetation at Ellesborough Road compound.
- Installation of Kerbs on Ellesborough Road.
- Decommissioning of temporary welfare at Ellesborough Road.

Nash Lee Road, Nash Lee Lane

- Earthworks (Excavation of Wendover North Cutting Contd.), Movement of Stockpiles
- Installation of Hoarding posts 14m long with semi-dry concrete.
- De-vegetation works at Stoke Brook.
- Foul water connection works
- Horizontal directional Drilling for Utilities Diversion
- Silt fencing around Stockpiles
- Plant crossing GS6 installation

Bacombe Lane

- De-vegetation at Bacombe lane embankment.
- Bacombe Lane Utilities bridge construction.
- Installation of Acoustic barriers on Heras fences.
- Construction of Shet piling platform.
- Enabling works for 33kV diversion (topsoil strip & stone access road).

Earthworks (relocation of Stockpiles).

Grove Farm

- Earthworks (relocation of Stockpiles)
- Completion of infiltration pits.

Small Dean Viaduct

- Earthworks (stabilising and compacting for LEF works at Phase 1 & 2).
- Movement of the ground monitors to the area close to Pier 2 backfill around the monitors
- Pile caps pour and sheet pile backfill
- A413 diversion excavation and backfill
- A413 diversion drainage installation
- A413 utility diversion
- Small Dean Launch embankment installation and backfill
- Ground investigation close to Thames water main (from 30/10)

Wendover Town

- Extension of Slurry Wall SAR
- Building up new road crossing over the existing v-ditch (culvert pipes installed) to allow existing road to be handed over to BKJV for guide wall works.
- Construction of guide wall, backfilling and compacting.
- Interceptor maintenance by Bio-Marsh.
- WGT Surface Water Management excavation to connect V-ditches to improve site runoff.

Calvert Area

Station Road (Quainton)

No works are currently taking place at this worksite.

Woodlands Farm (Woodlands)

- Adams accommodation no works
- River Ray culvert no works
- Mass haulage of aggregate movement of aggregate via heavy good vehicles (HGVs) along the site access road (SAR) through the entire worksite.
- Woodlands culvert all works complete
- Finemere retaining wall no works.

FCC / School Hill (Calvert)

- Calvert Green overbridge construction of a bentonite batching plant and dig and replace (D&R) under structure.
- Secant retaining wall no works

- School Hill batching plant production of concrete
- Mass haulage of aggregate movement of aggregate via heavy good vehicles (HGVs) along the site access road (SAR) through the entire worksite.
- School Hill culvert phase 1 works incl. culvert installation, headwalls, waterproofing and technical backfill.
- Calvert cutting Earthworks excavation and fill i.e., D&R.

Other works ongoing in Calvert not within proximity (greater than 1km) to dust monitors include:

- West Street overbridge
- Perry Hill overbridge
- Portway culvert
- Gawcott Road works: SGN pipeline diversion and temporary highway diversion
- Addison Road overbridge
- East west rail (EWR) overbridge incl. OXD embankment earthworks
- Charndon Lodge underbridge incl. OXD embankment earthworks
- Charndon Lodge pumping station
- OXD line culverts EWR, infrastructure maintenance depot (IMD) west and IMD east
- Shepherds Furze culvert
- IMD earthworks platform and landscape bund
- MCJ4 chord earthworks
- Bat mitigation structure incl. SCL/13 overbridge, Sheephouse Wood North culvert, Greatmoor no. 4 culvert, CAG/2 underbridge, megaditch culvert and megaditch retaining wall
- Greatmoor no. 3 culvert
- GUN28 overbridge
- QUA26 overbridge
- Hills Farm earthworks
- Edgcott Road overbridge
- Doddershall no. 6 and 7 culvert (complete)
- Woods drop inlet culvert
- MCJ Line earthworks Doddershall landscape bund.

Twyford to Greatworth

Turweston North

- Excavate and replace
- Reopen the mill leat channel
- Crushing and Screening
- Turweston Green Overbridge Excavation
- Bentonite Platform
- Drainage Works.

Twyford

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- Twyford East Culvert
- Excavate and replace
- Internal drainage works
- Stabilisation works.

Chetwode

- CHW18 concrete pouring and steel fixing
- SEOB steel work
- A4421 South compound setup works
- Mass haulage
- Internal drainage works

Aylesbury

Glebe House

- A418 Realignment backfill;
- A418 Overbridge main cutting excavation.
- 1.1.5 Thirty-three (33) dust monitors are installed around these 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. Wendover Bus 55 had a fault with the PT10 component. Ellesborough Road, Nash Lee Lane, Bacombe Lane, SDVC, Wendover Town and Nash Lee Road monitors were recording intermittent data due to system fault. Grove Farm had a SD card fault. No data was recorded at Potters Row and Grimms Ditch due to the monitors being retrieved from site. The Twyford monitor recorded intermittent data due to a damaged solar cable. The Turweston North monitor was reported as offline at the end of October due to monitor being retrieved for laboratory calibration. The low data capture at the Woodlands monitor is suspected to be due to poor weather

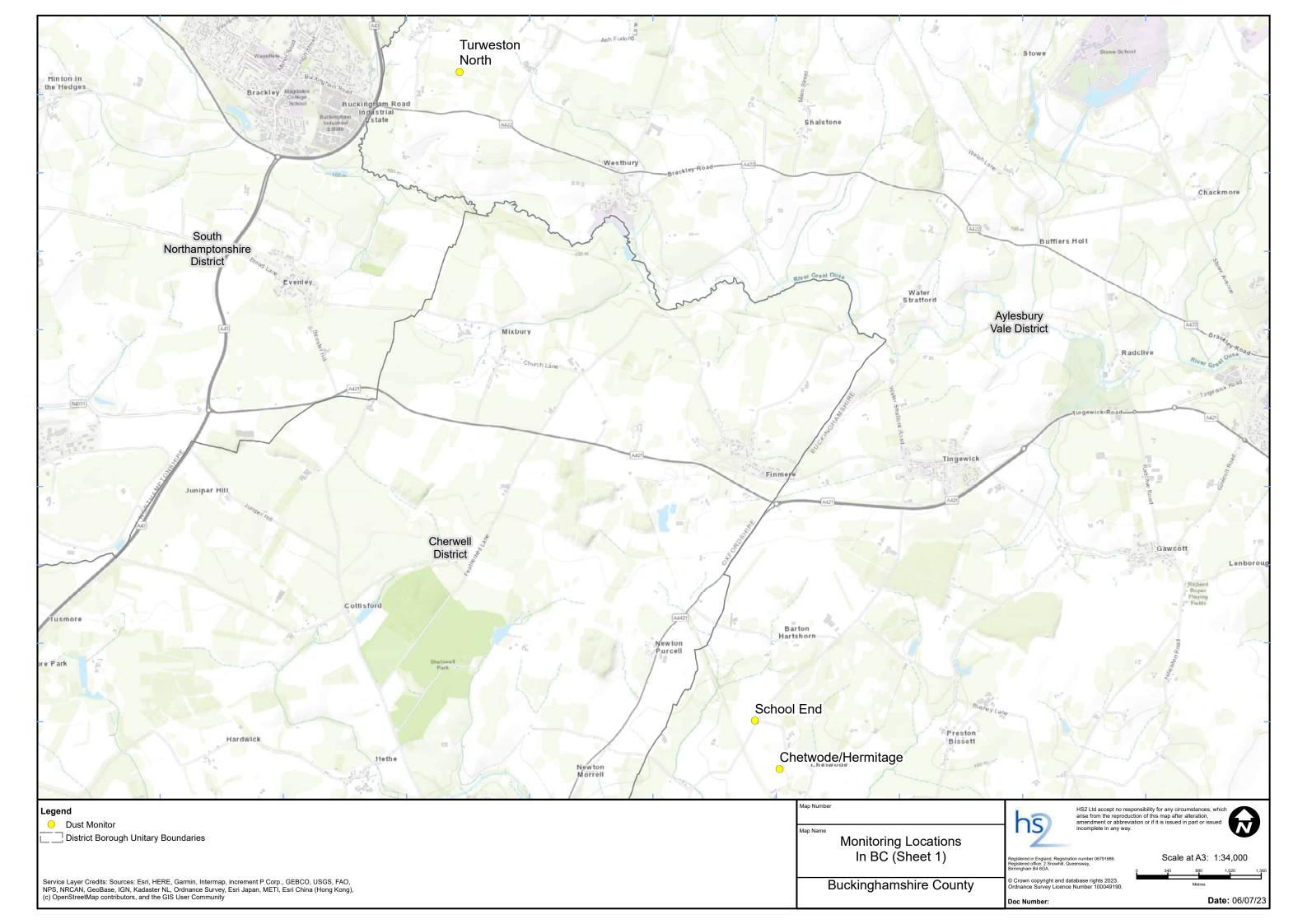
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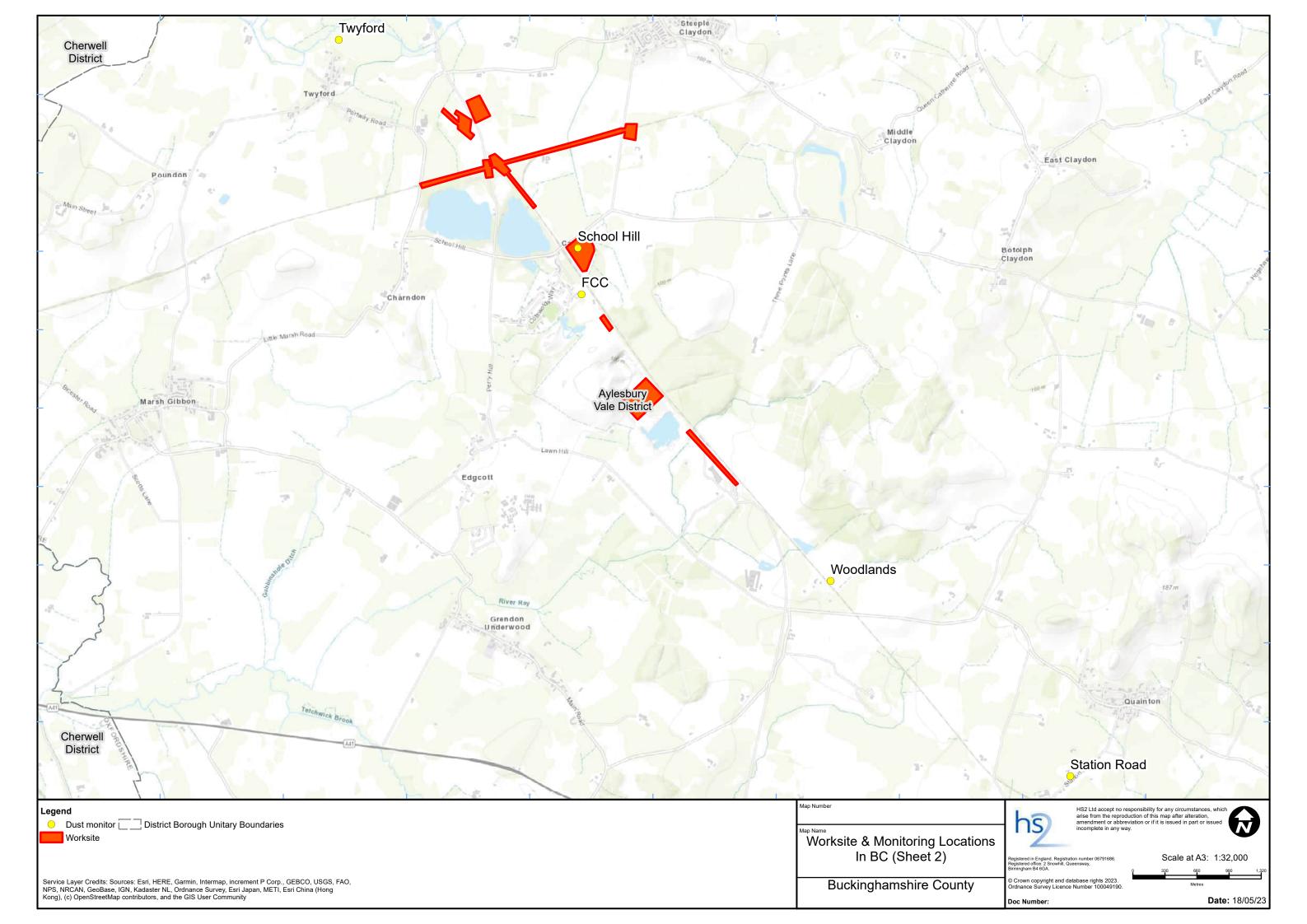
conditions leading to loss of power. Site visit is due to be undertaken to investigate further.

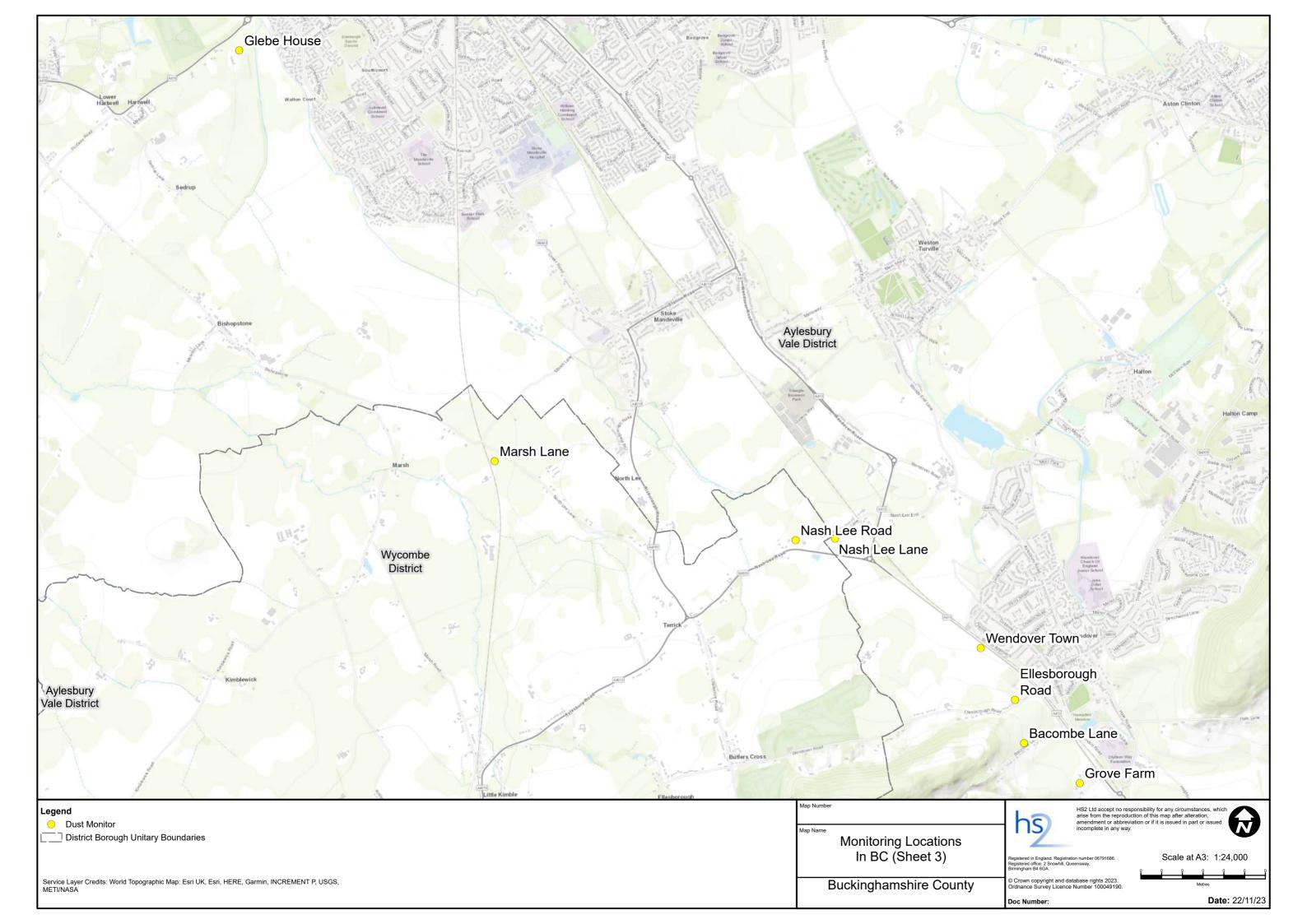
1.1.10 There were no (0) complaints received during the reporting period (October 2023).

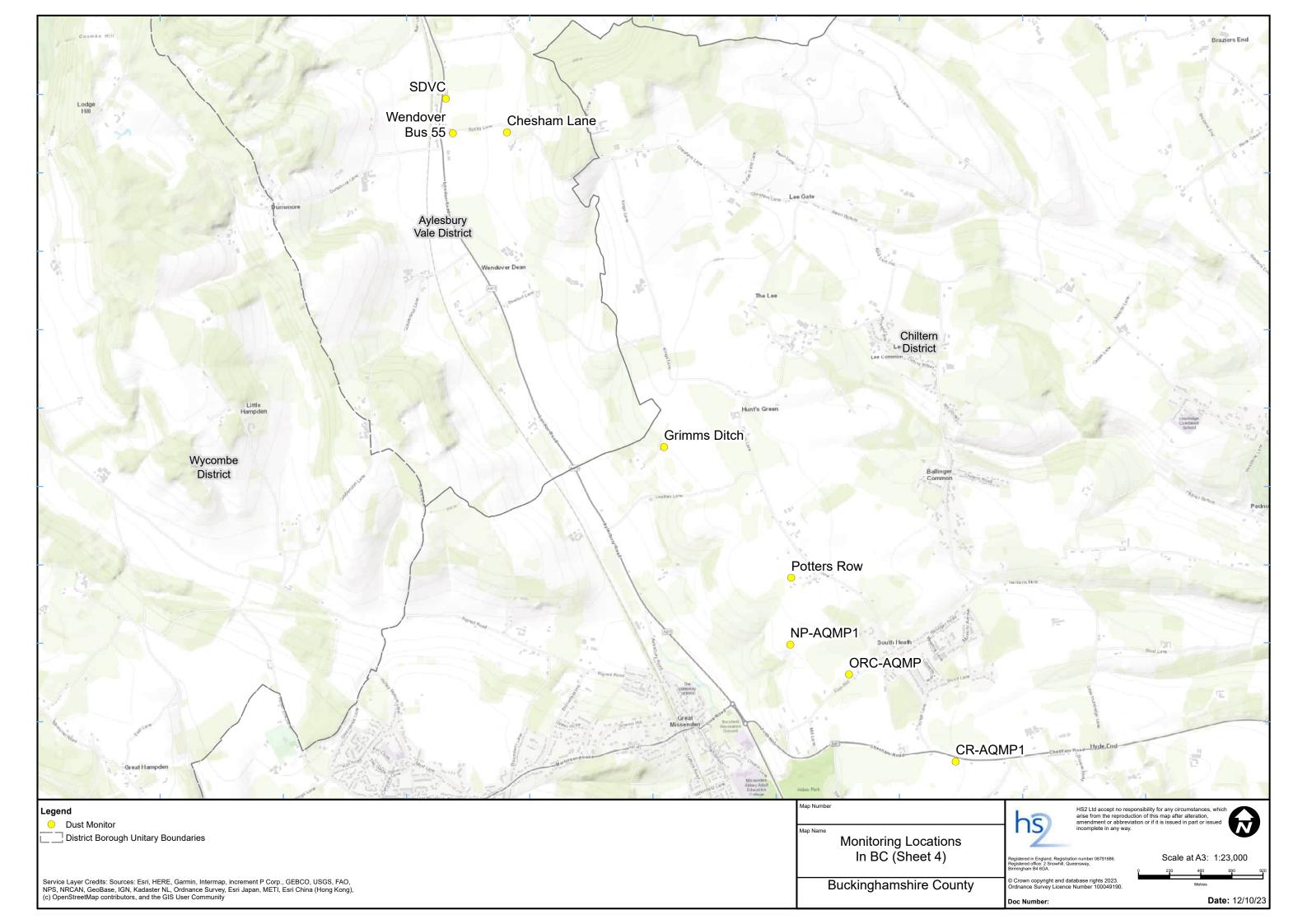
Appendix A - Worksite and Dust Monitoring Locations

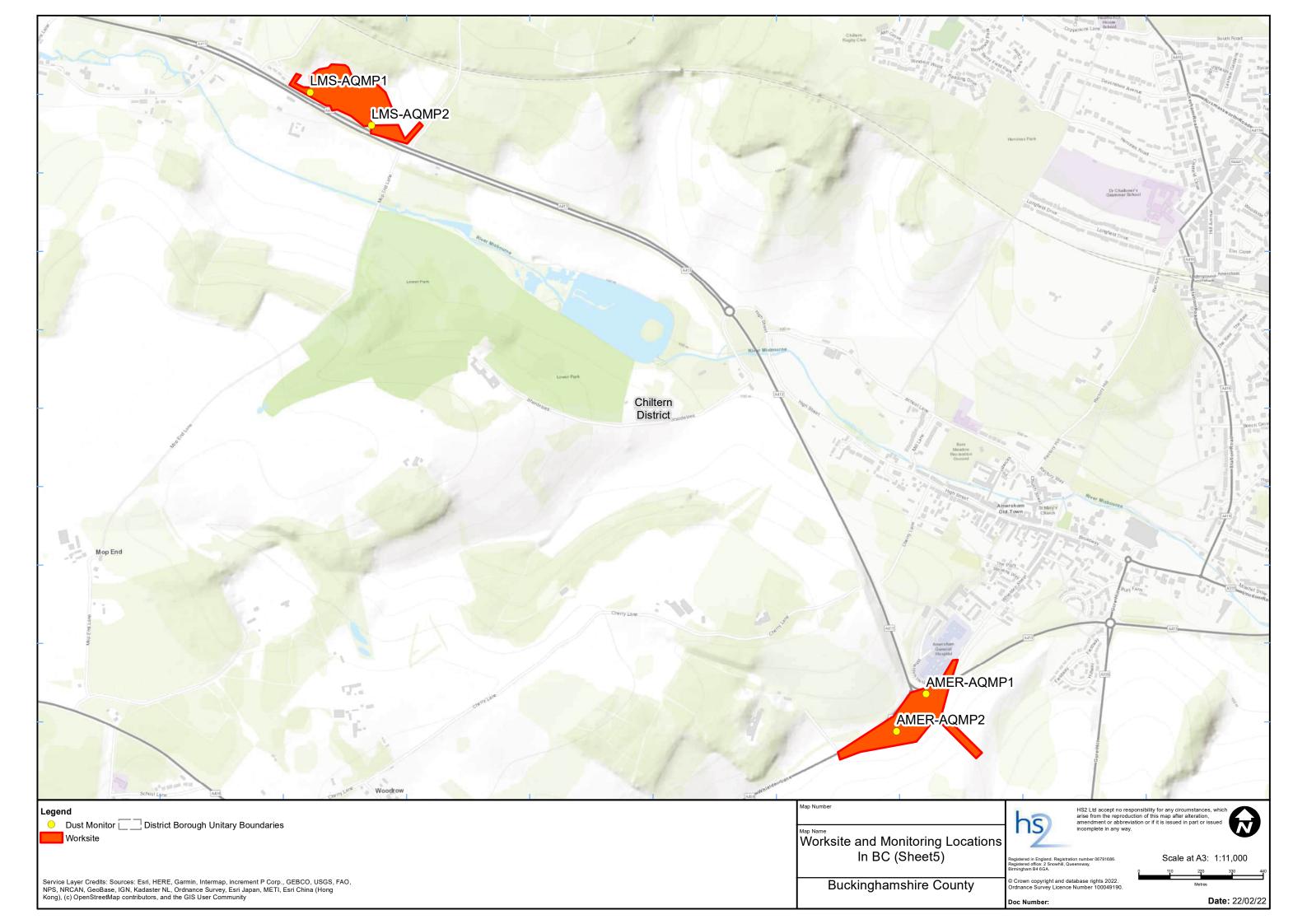
Figures 1-7: Worksite and Monitoring locations within BC

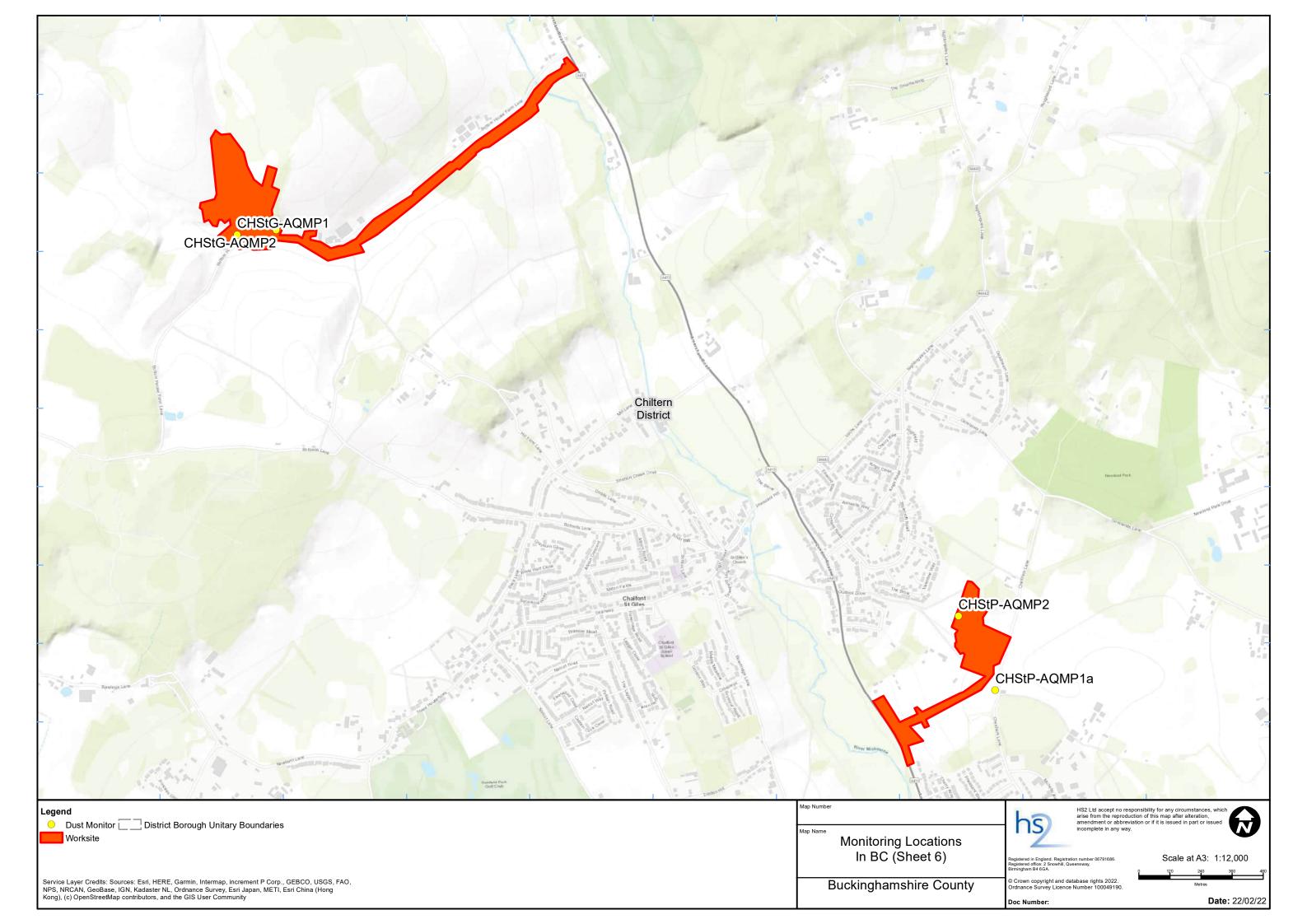


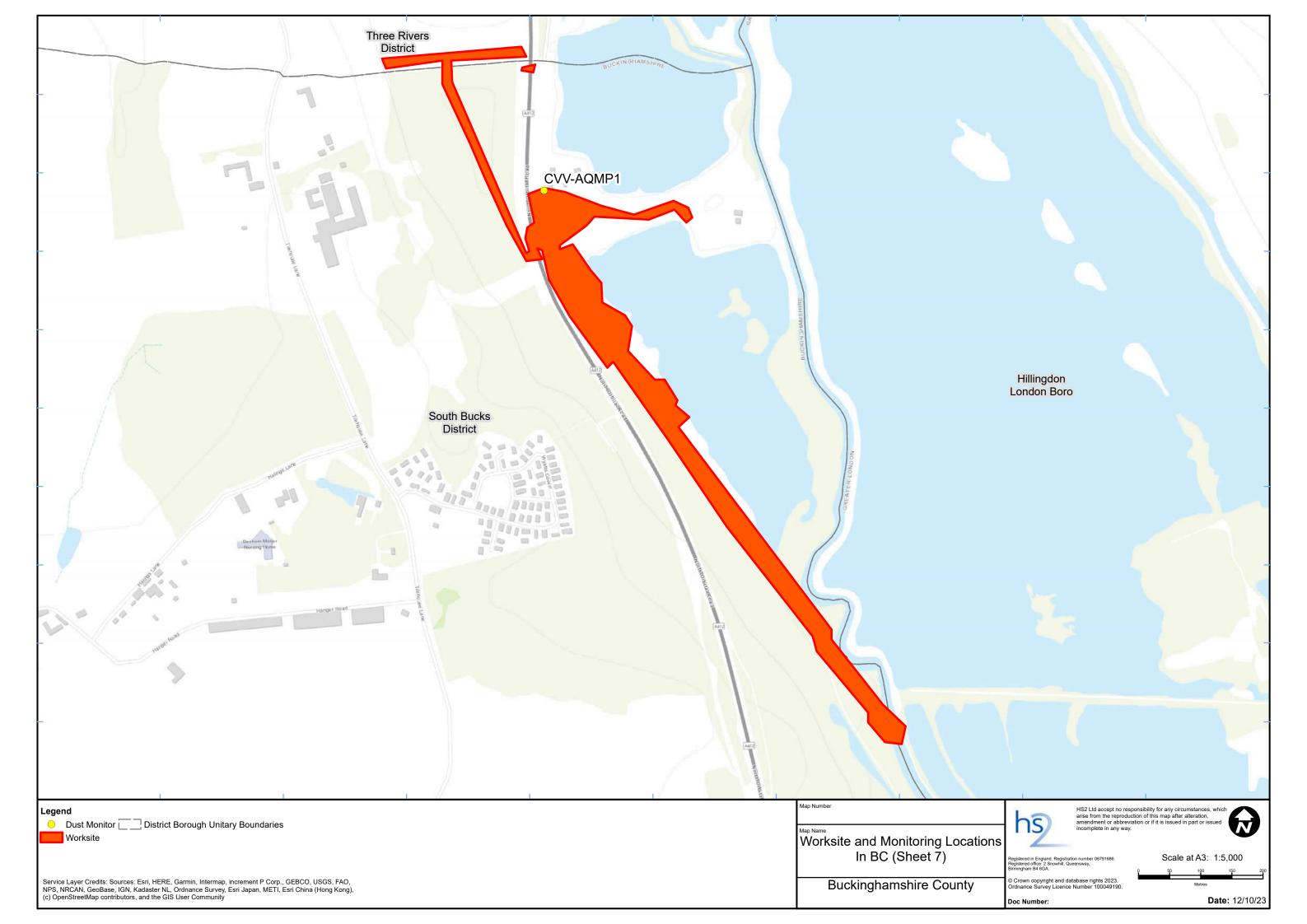












Appendix B - Dust Monitoring Results

Table 1: Dust Monitoring Locations and 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	No	7.3	1.0	72.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	6.1	1.0	26.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	6.7	1.0	40.0	0	100.0
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	7.3	1.0	34.0	0	100.0
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	6.9	1.0	37.0	0	100.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	6.1	1.0	23.0	0	91.8
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	6.2	1.0	22.0	0	99.9
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	6.2	1.0	22.0	0	99.9
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	6.0	1.0	22.0	0	100.0
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	6.5	1.0	70.0	0	99.9

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 (%)
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	М	Yes	Yes	5.8	1.0	61.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	М	Yes	Yes	5.7	1.0	26.0	0	100.0
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	6.3	1.0	24.0	0	98.3
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	7.1	1.0	211.0	1	96.5
Potter Rows – Dust	490075, 202502	Potters Row, South Heath	М	Yes	Yes	-	-	-	-	-
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	-	-	-	-	-
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	5.8	1.0	42.0	0	93.0
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	6.4	1.0	59.0	0	40.3
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	10.3	1.0	1001.0	2	56.3
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	6.7	1.0	34.0	0	99.6
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	6.1	1.0	21.0	0	95.8
Turweston North - Dust	460439 , 237140	Turweston, Buckinghamshire	М	Yes	Yes	6.1	1.0	22.0	0	62.1
FCC - Dust	469042 , 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	6.1	1.0	77.0	0	98.9
Ellesborough Road - Dust	486458 , 207550	Ellesborough Road, Wendover	М	Yes	Yes	5.8	1.0	45.0	0	55.5
Nash Lee Road - Dust	484766 , 208782	Nash Lee Lane (west)	М	Yes	Yes	6.3	1.0	42.0	0	69.4

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 (%)
Nash Lee Lane - Dust	485069 , 208793	Nash Lee Lane (east)	М	Yes	Yes	6.0	1.0	23.0	0	79.0
Bacombe Lane – Dust	486528 , 207217	Bacombe Lane, Wendover	М	Yes	Yes	6.0	1.0	22.0	0	73.5
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	6.5	1.0	28.0	0	85.1
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	6.1	1.0	28.0	0	100.0
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	6.6	1.0	29.0	0	76.9
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	М	Yes	Yes	5.5	1.0	20.0	0	85.9
Grove Farm	486957, 206908	Grove Farm, London Road, Wendover	М	Yes	Yes	6.3	1.0	24.0	0	66.9
Marsh Lane	482445, 209392	Marsh Lane, North Lee.	М	Yes	Yes	5.8	1.0	20.0	0	99.9

Table 2: Summary of exceedances during period (October 2023)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Twyford	16/10/2023 16:00 – 16:59; 1001 μg/m³ 17:00 – 17:59; 783 μg/m³	Pulled site work diaries and investigated for potential site activities. Used satellite imagery and found that a stockpile of stone was moved on that day, which was located in the immediate vicinity of the dust monitor. It is believed this is what may have caused a very localized elevated dust level. The site engineers reported no wider dust issue.	In areas where stockpiles are being moved, dust generation will be monitored by the site team and dust suppression will be actioned by water spraying where required.
School End	09/10/2023 11:00 – 11:59; 211 μg/m ³	This dust exceedance may have been due to the movement of aggregate along the site access road. Works occurred on a dry day. Noting the close proximity of the site access road to the monitor. As these works are not unusual, and the exceedance is an anomaly, it is difficult to be certain on the cause.	Dust levels on dry days will continue to be monitored by the site black hats, and water will be dripped from the water bowser tractors in areas at risk of dust generation.

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

