June 2022

HS2

Air Quality and Dust Monitoring Monthly Report – June 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 June 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for June 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:

The Colne Valley Viaduct (CVV) LTP1

- Jetty Piling; piling plant platforms, support plant, compound, piling platform relocation works
- Cofferdam Sheet Piling; Piling plant, Support plant
- Pile Caps at P22 and P30; Piling, FRC to Pile Caps; Earthworks
- Permanent Main Piling Works; Boring pile, De-sanding pile bore at pile position, installing reinforcement cage and concreting pile, Assemble tremie string and lower into bore. Bored pile and bentonite break-sown to prepare pile surface, Grout curtain around viaduct pile groups, Maintenance plant, Clean up around piles.
- North Embankment Compound; compound operation
- DWSC Compound; compound operation
- Satellite Welfare; Satellite Welfare
- Generators; Generators
- Utilities; H3
- Utility Diversion and Temporary M&E; Utility Diversion and Temporary M&E
- River Colne Re-alignment; Re-alignment works
- Cofferdam Excavation, Waling Beams and Concrete Plugs; Cofferdam excavation, dewatering, waling beams and concrete plugs
- Pier Construction; Arch Form Deck Pier 33, 32, 31, 30 FRC works for V Pier Pile cap and pier
 - Standard Piers and Pile caps P54 to P29 = FRC works for V pier pile cap and pier pile cap and pier. Yard supporting activities. Post tensioning of AFD legs. Tower crane mob/demob
- Pile Trimming; Pile trimming

- INNS River Colne to GUC; Removal
- INNS GUC to Harvil Road; Removal
- Ground Investigation Works; GI Works, Overwater GI works
- Pumping Water Management; Pumping water management
- Maintenance of Haul Roads; Maintenance and vehicle movements of haul roads
- North Abutment Works; Abutment completion works at bearing shelf/parapet, Yard
 Supporting Activities
- A412 Gas Crossing Emergency Dismantling; A412 gas crossing emergency dismantling
- Fencing; Fence construction
- Environmental Maintenance; Environmental maintenance
- Core drilling of Concrete; Core drilling of concrete
- Bentonite Farms; Base slab construction, Finish upstand walls and installation of equipment, Demolition of Bentonite farms
- 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, External PT
- General Works All locations; General works

Chalfont St Peter Vent Shaft

- Activity 1 General Site Activities (including Tower Crane Erection)
- Activity 2 Excavate Surplus Secant Piles
- Activity 3 Road Maintenance Works
- Activity 4 Secondary Lining
- Activity 5 Reinforced Concrete Internal Structure
- Activity 6 Connection to Tunnels
- Activity 8 Basement Construction

Amersham Vent Shaft

- Activity 1 General Site Activities (including Tower Crane Erection)
- Activity 2 Waterproofing
- Activity 3 Basement Secant Pile Works
- Activity 4 Shaft Base Works
- Activity 5 Collar Construction
- Activity 6 Secondary Lining
- Activity 7 Internal Structures
- Activity 8 Small Basement Construction

Chalfont St Giles Vent Shaft

- Activity 1 General Site Activities (including Tower Crane Erection)
- Activity 2 Secant Piling
- Activity 3 Road Maintenance Works
- Activity 4 Secondary Lining

- Activity 5 Reinforced Concrete Internal Structure
- Activity 6 Connections to Tunnels
- Activity 7 Basement Construction

Little Missenden Vent Shaft

- Activity 1 General Site Activities (including Tower Crane Erection)
- Activity 2 Basement Secant Piling Works
- Activity 3 Shaft Base Slab
- Activity 4 Collar Construction before TBM Crossing
- Activity 5 Secondary Lining
- Activity 6 Small Basement Construction
- Activity 7 Stockpile Removal

Chesham Road Vent Shaft

- Activity 1 General Site Activity
- Activity 2 Shaft Construction using In-Situ Caisson Method

North Portal work site

- Early Works; Mobilisation and Site Setup, Site Fencing
- Temporary Access Road; Scrape 1formation, Hardstanding and Kerbing, Drainage and Services, Asphalt and Signage
- Permanent Access Road; Scrape Formation, Hardstanding and Kerbing, Drainage and Services, Asphalt and Signage
- Compound Carpark; Scrape Formation, Hardstanding and Kerbing, Drainage, Foulage, and Services, Asphalt, Site Accommodations RC Works, Site Accommodations Delivery and Fit-Outs
- Piling Platform Area 1; Traffic Management and Temporary Access from Frith Hill Road, Weights and Measures Pub Demolition, Cut and Fill, Stabilisation, and Hardstanding, Ducting and Drainage
- Piling Platform Area 2; Cut and Fill, Stabilisation, and Hardstanding, Ducting and Drainage, Temporary Utilities, Temporary Water Connection
- Foundations Headwall (Mobilisation), Mobilisation of D-Wall Piling Equipment
- North Portal Barrettes and Headwall; Ground Pre Treatment Works: Included by Variation 1MC05-ALJ-EV-REP-CS02-CL16000005 dated 01/02/2022

North Chilterns Area

- South Heath Earthworks;
- 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;
- Wendover Compound;
- Wendover Batching Plant; and
- Nash Lee Road Diversion.

Calvert Area

- Charndon Lodge Underbridge FRC works including rebar fixing, formwork lifting / removal and concreting
- East West Rail Overbridge FRC works including rebar fixing, formwork lifting / removal and concreting
- Perry Hill Overbridge pilecap excavation, pile cropping, and FRC works including rebar fixing, formwork lifting / removal and concreting
- Addison Road Overbridge FRC works including rebar fixing, formwork lifting / removal and concreting
- OXD Culverts blinding, installation of pre-cast culvert units, waterproofing and sealing, rebar and shuttering for in-situ headwalls, and technical backfill
- GUN28 Overbridge piling platform build-up
- OXD Line Earthworks embankment removal, dig and replace (D&R), starter layers and embankment fill, permanent drainage / ponds, and track layers
- Hills Farm Earthworks import and stockpiling of materials, and stockpiling of site won materials
- MCJ Line Earthworks removal of existing ballast embankment, pre-earthworks drainage, and demolition / removal of existing culverts
- West Street Temporary Diversion formation excavation, laying and compacting of stone, cutting of drainage ditches, and surfacing / tarmacking
- Addison Road Temporary Diversion removal of existing embankment
- Creighton Road Traffic Lights concrete works for traffic light bases
- Site Access Roads formation excavation, laying and compacting of stone, cutting of drainage ditches, and surfacing / tarmacking
- Demolitions demolition of Adams Accommodation Underbridge, CAG2 Underbridge, QUA26 Underbridge and Woodlands Farm double garages
- Quainton Temporary Utility Diversions Concrete shaft sinking for under track crossings (UTXs), microtunnelling for UTXs, and field trenching for duct laying.
- West Street Temporary Utility Diversions field trenching for duct laying
- SGN Pipe Temporary Diversions field trenching for duct laying

Twyford to Greatworth

- School End/Hermitage/Old Stable Cottage: compound development, topsoil stripping, Drainage, pond maintenance, I&M, Stockpiling, Topsoil Stripping, Manthorn Farm demolition, and IDTs movement.
- Twyford: Access Road, Haul Road, drainage/culvert.

- Routewide Vegetation clearance, access road, drainage, and ponds maintenance along SAR from ch 86;700 to 85;000.
- Turweston: access road, topsoil stripping, compound maintenance, drainage/ponds, bulk excavation, stockpiling, and slab crossing.

Aylesbury

Meadoway

- Construction of the A418 Security Plaza access road
- Earthworks (Aylesbury North Cutting excavation, stockpile construction)

Oat Close

• Earthworks (Aylesbury Embankment excavation, stockpile construction)

Glebe House

• Earthworks (Aylesbury North Cutting excavation, stockpile construction)

Moat Farm

- Earthworks (Aylesbury South Cutting excavation, stockpile construction)
- PRA Overbridge piling works
- PRA Rail Deliveries maintenance of stockpile and access road
- PRA Rail Deliveries by train and unloading, transport to stockpile area

Westfield

- Earthworks (Aylesbury South Cutting excavation, stockpile construction)
- PRA Overbridge piling works
- PRA Rail Deliveries maintenance of stockpile and access road
- PRA Rail Deliveries by train and unloading, transport to stockpile area
- 1.1.5 Thirty-five (35) 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 June 2022 are presented in Appendix B, Table 2, 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 (October 2018)' has been applied.

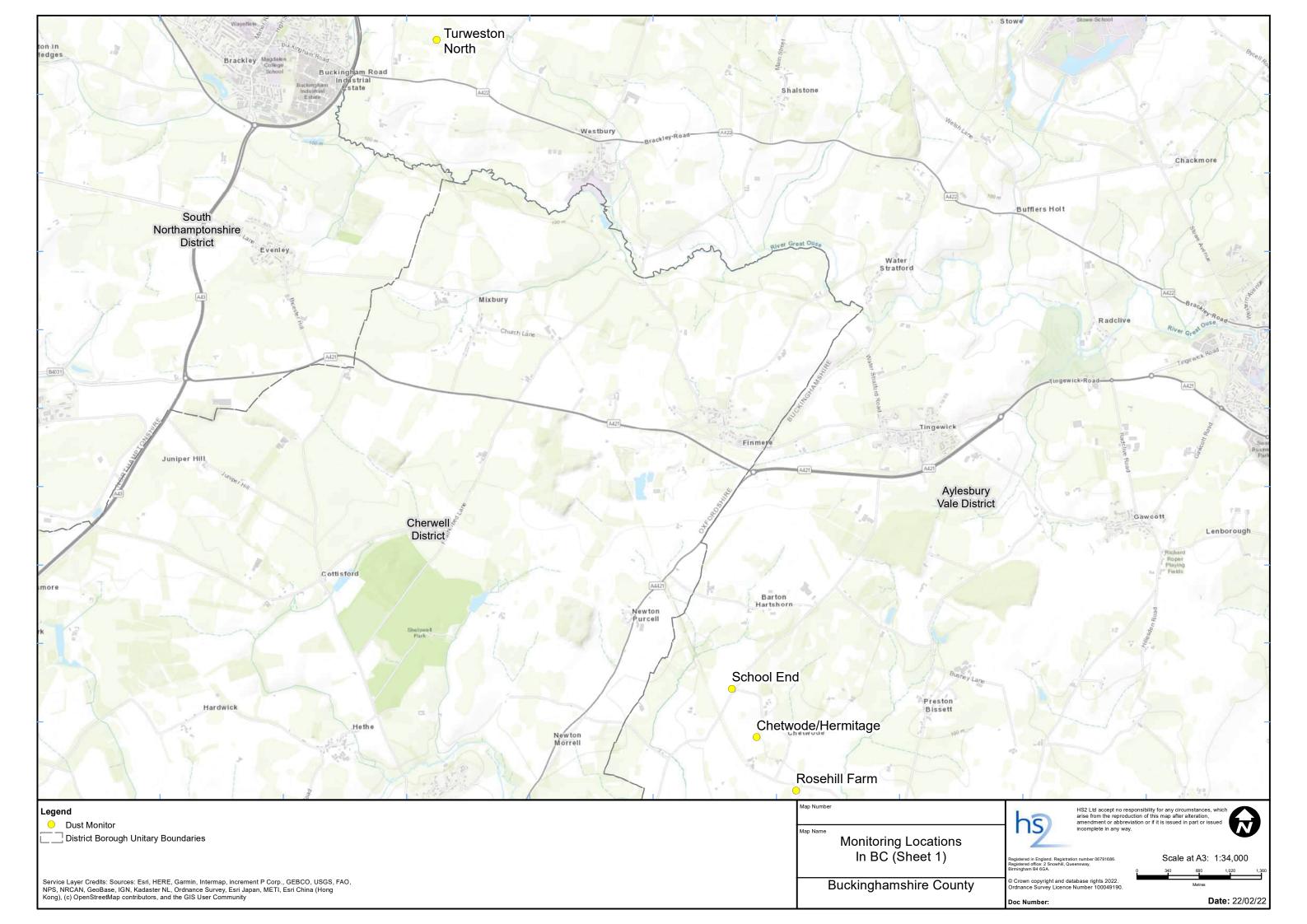
- 1.1.8 Data capture was below 90% for multiple monitors in June 2022 due to technical issues, remote connection problems and loss of power.
- 1.1.9 Details of trigger alert investigations and remediations are presented in Appendix B, Table3.
- 1.1.10 Table 1 provides a summary of the complaint information related to dust or air quality received during the reporting period, together with the findings of any related investigations.

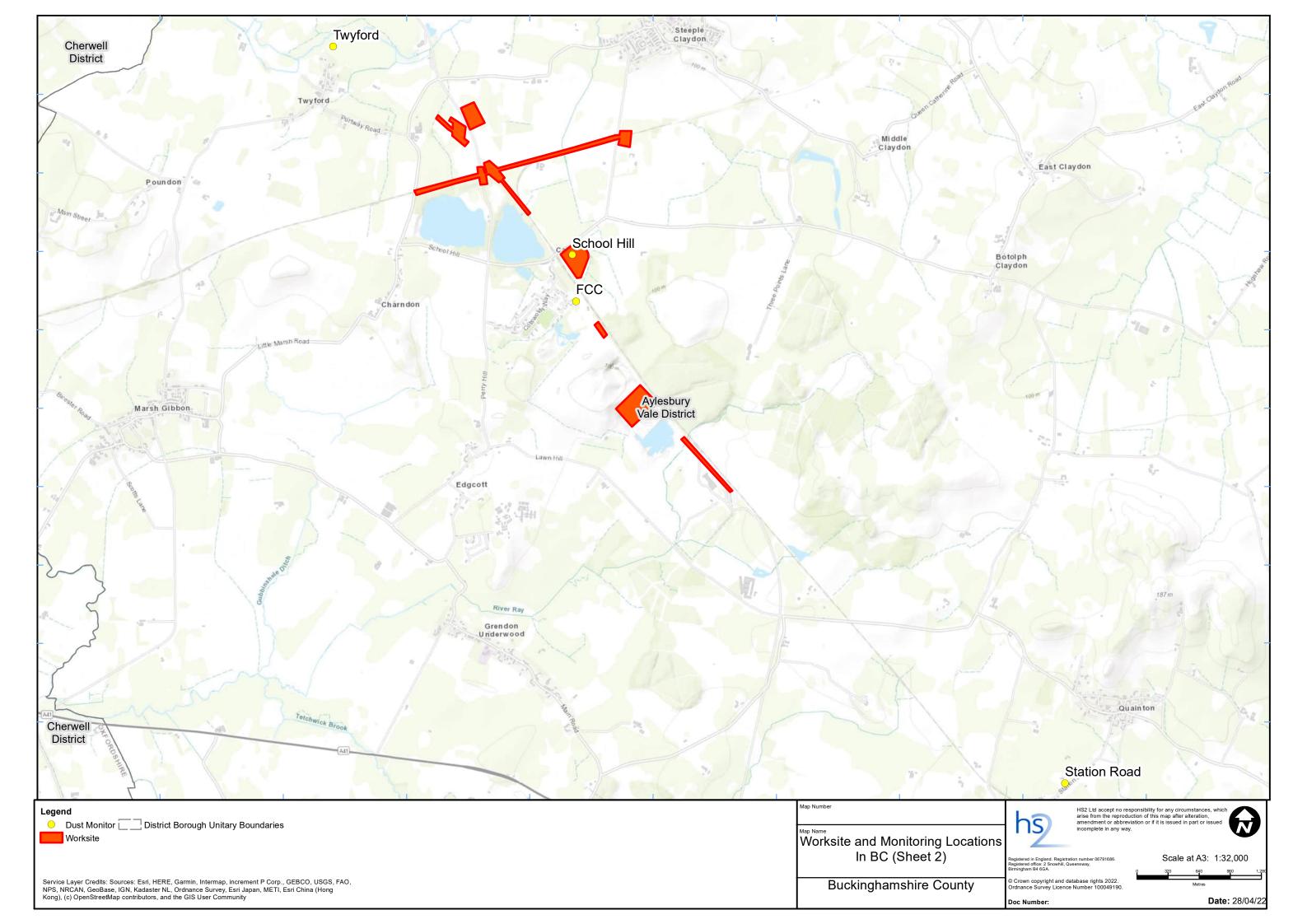
Table 1: Summary of complaints received during June 2022 in BC

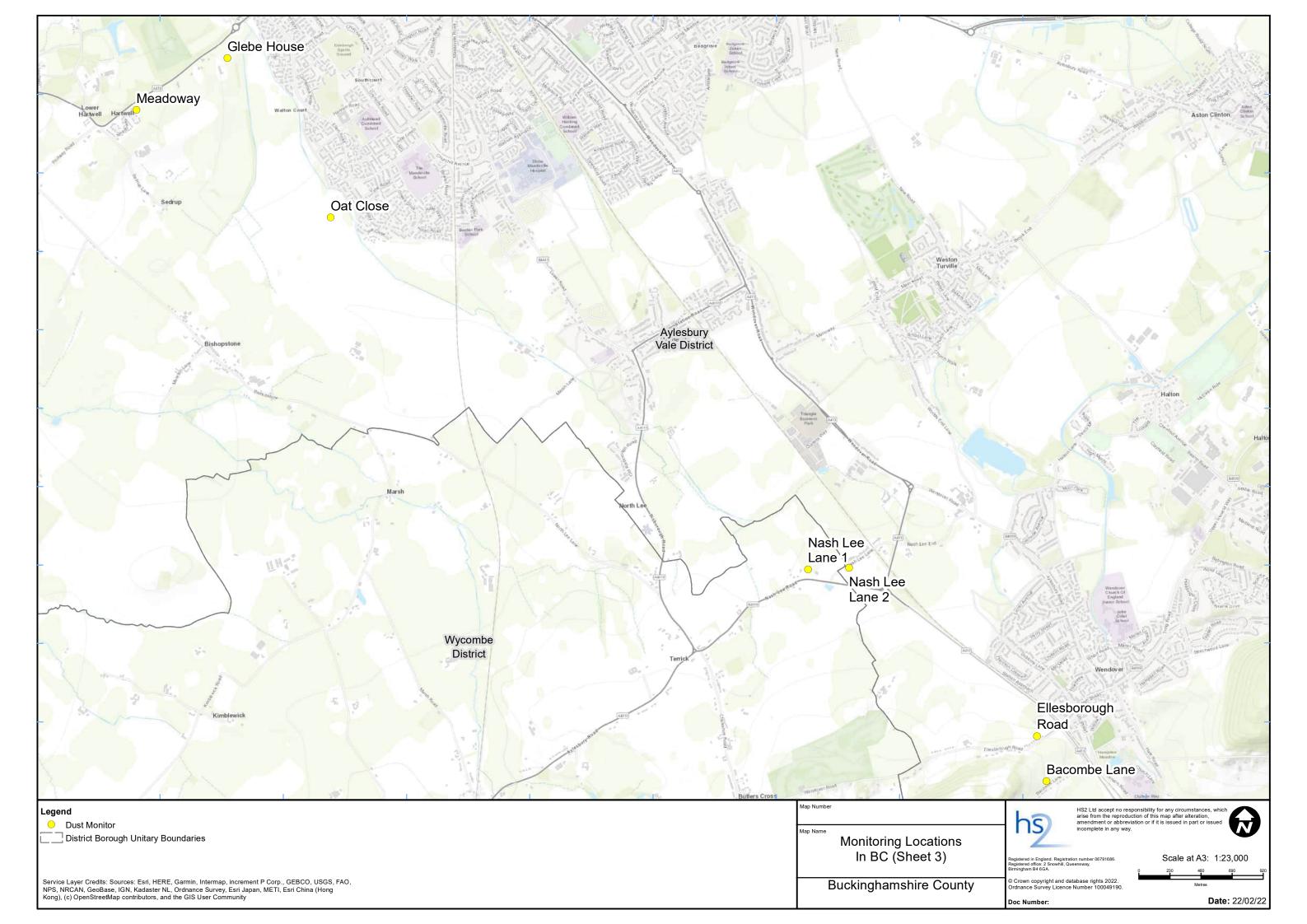
Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
HS2-22-43745-C	N/A	Levels of dust from heavy machinery and lorries.	Dust management practices are used across the entire site, including the regularly dampening down of haul roads and the use of screening where practicable. Site teams confirm that dust suppression is constantly deployed when work occurs in the area adjacent to Old Shire Lane. Daily monitoring of dust pollution is conducted using air quality monitors at the boundaries of our site. In June, no exceedances were reported. The stakeholder was notified that with a large and exposed site, not all dust pollution can be prevented however work continues on ways to improve the response to particularly dusty working conditions, including trialling new technologies.

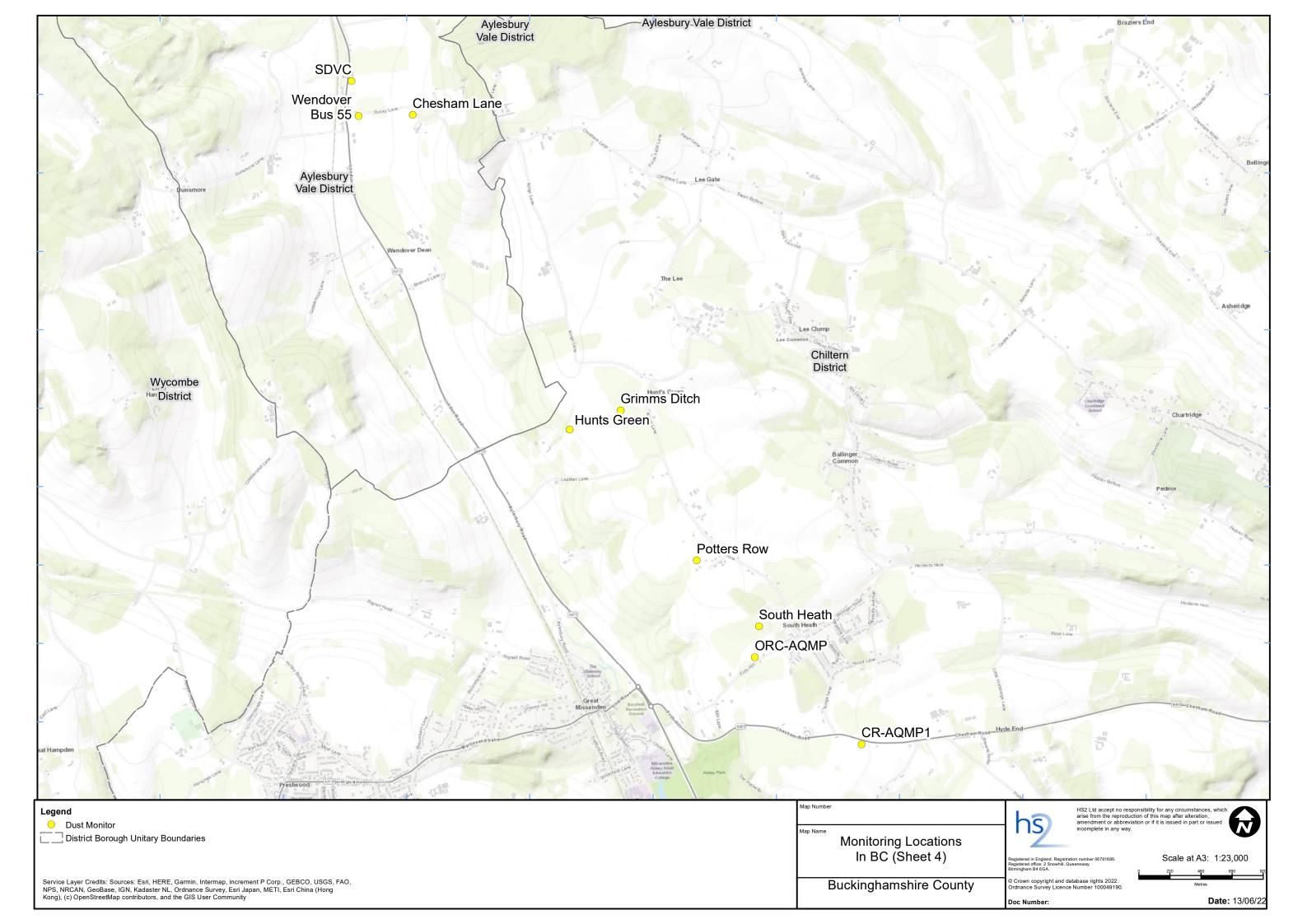
Appendix A - Worksite and Dust Monitoring Locations

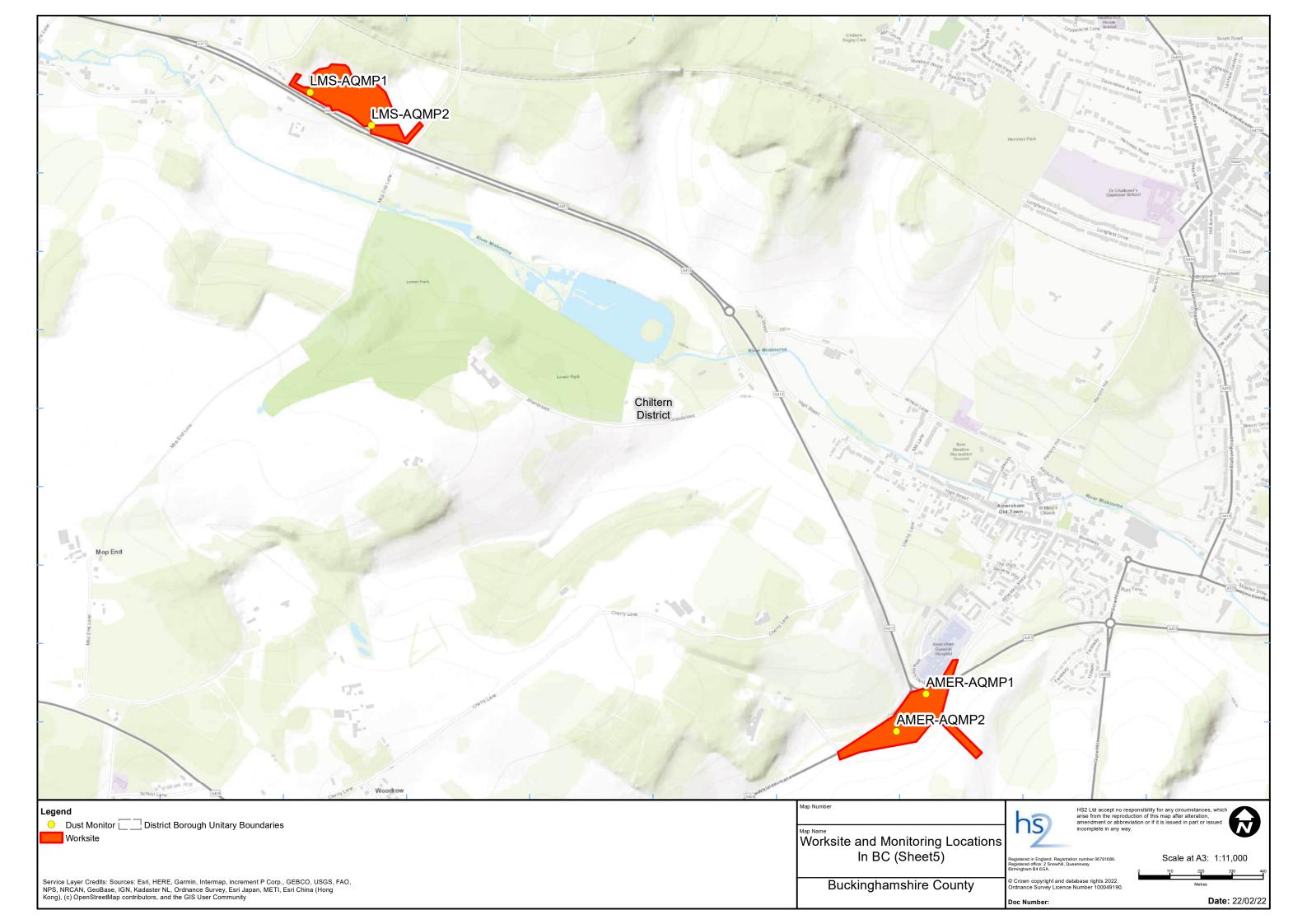
Figure 1-7: Worksite and monitoring locations within the BC

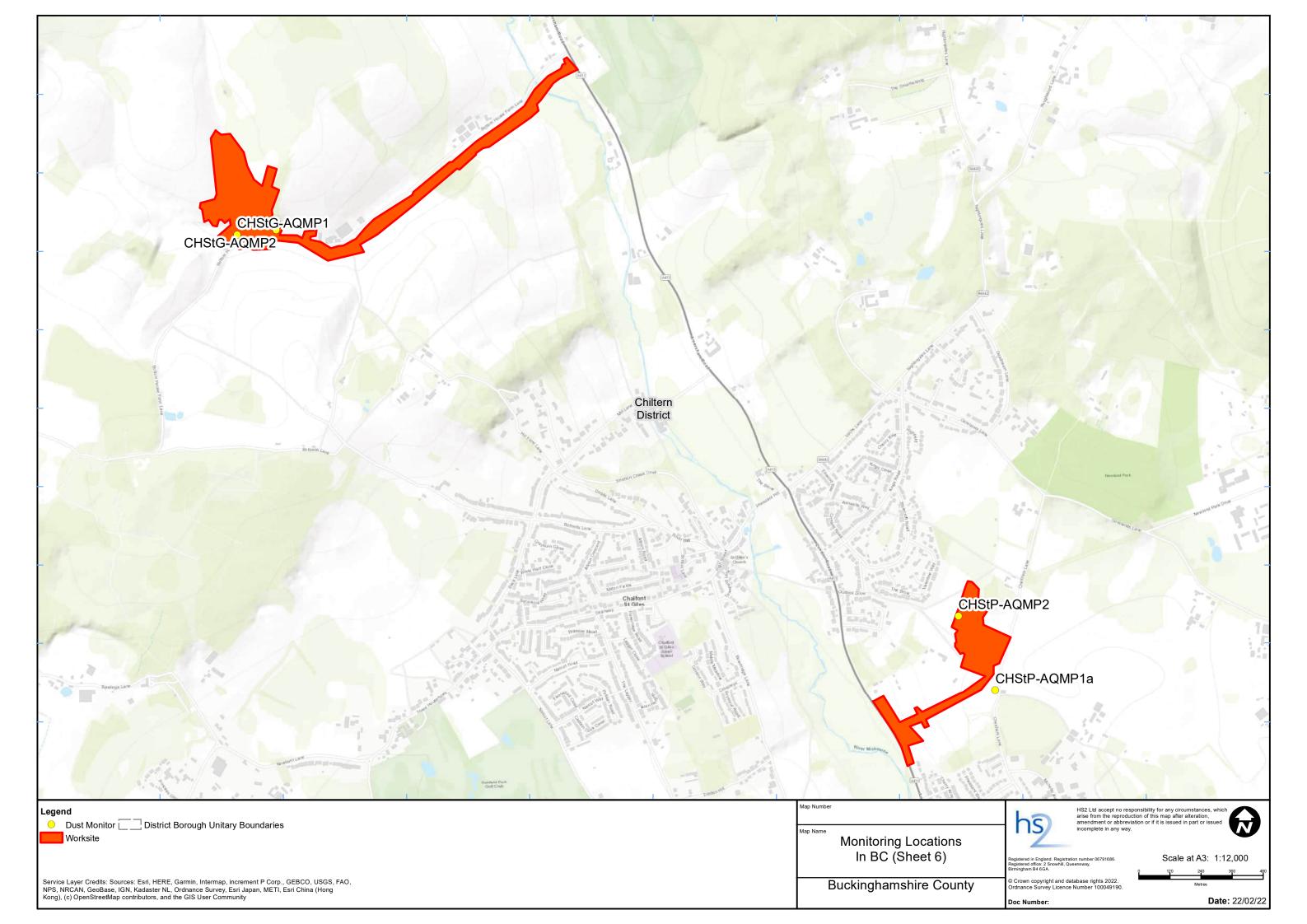


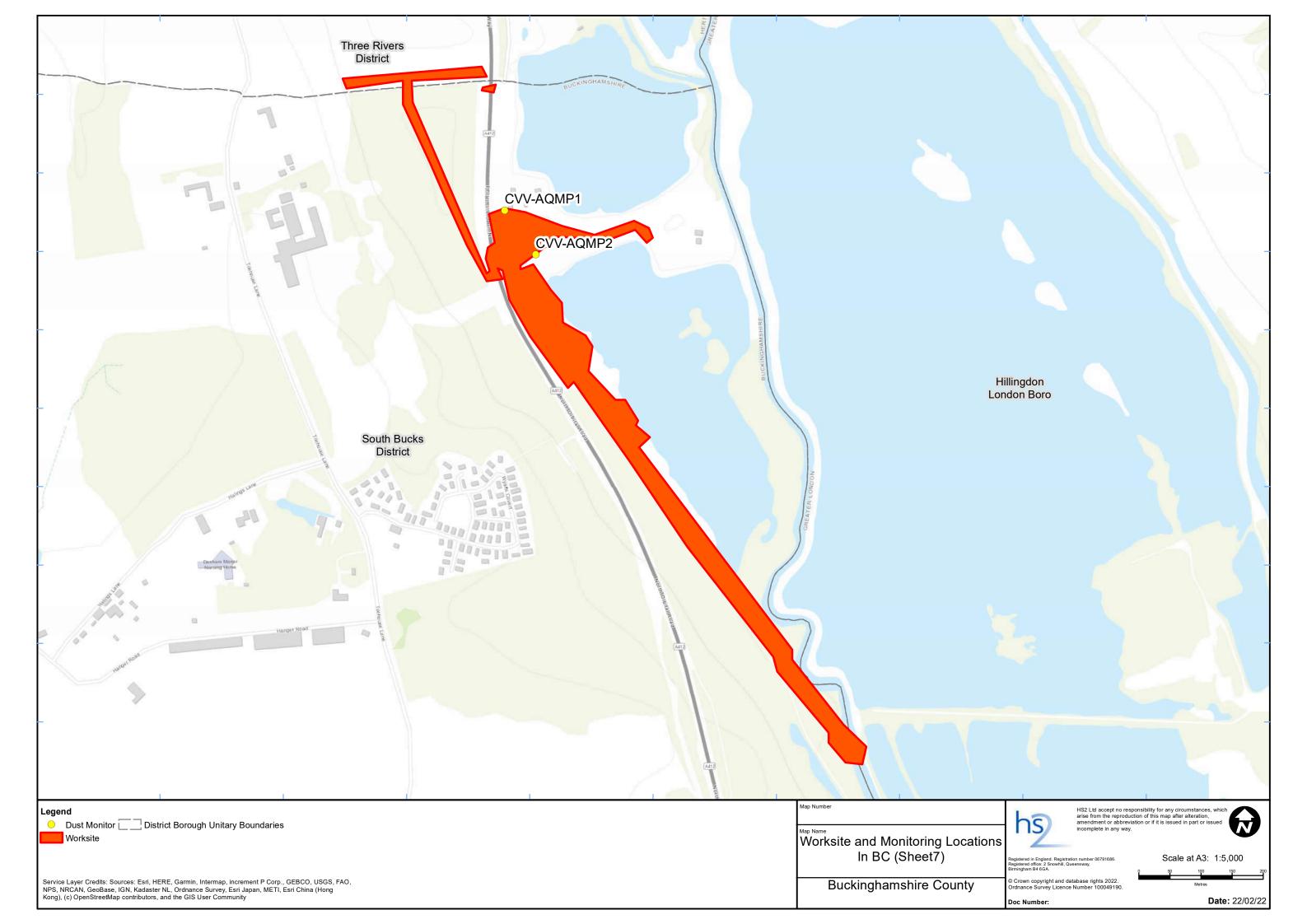












Appendix B - Dust Monitoring Results

Table 1: Dust monitoring locations and June 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	5.8	1.0	21.0	0	99.6
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	5.8	1.0	22.0	0	98.6
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	M	Yes	Yes	5.4	1.0	16.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	5.8	1.0	19.0	0	99.6
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	6.4	1.0	29.0	0	98.2
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	6.5	1.0	99.0	0	100.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	5.1	1.0	18.0	0	84.2
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	5.8	1.0	140.0	0	55.0

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 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 (%)
LMS-AQMP1	493190, 198848	On the southwest of the site	M	Yes	Yes	6.1	1.0	20.0	0	97.1
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	6.3	1.0	22.0	0	96.3
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	5.8	1.0	34.0	0	98.2
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	M	Yes	Yes	5.4	1.0	23.0	0	95.0
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	5.4	1.0	14.0	0	16.9
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	6.6	1.0	36.0	0	99.6
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	14.7	1.6	216.3	1	90.3
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	6.8	1.0	30.0	0	99.0
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	7.1	1.0	39.0	0	52.4
Grimms Ditch- Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	-	-	-	-	-
Hunts Green – Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	5.9	1.0	18.0	0	63.9
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	M	Yes	Yes	7.2	1.0	354.0	1	81.3
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	6.2	1.0	96.0	0	81.1
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	5.9	1.0	26.0	0	99.6

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 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 (%)
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	5.8	1.0	26.0	0	99.7
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	5.6	1.0	26.0	0	100.0
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	6.1	1.0	34.0	0	100.0
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	5.7	1.0	23.0	0	99.6
Turweston North - Dust	460439 , 237140	Turweston, Buckinghamshire	М	Yes	Yes	5.7	1.0	38.0	0	99.9
FCC - Dust	469042 , 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	7.6	1.0	48.0	0	100.0
Ellesborough Road	486458 , 207550	Ellesborough Road, Wendover	М	Yes	Yes	5.6	1.0	20.0	0	99.2
Nash Lee Road	484766 , 208782	Nash Lee Lane (west)	М	Yes	Yes	6.2	1.0	37.0	0	99.6
Nash Lee Lane	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	5.8	1.0	29.0	0	99.6
Bacombe Lane	486528 , 207217	Bacombe Lane, Wendover	М	Yes	Yes	5.6	1.0	38.0	0	100.0
SDVC	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	6.5	1.0	76.0	0	99.3
Station Road	474068, 219307	Station Road, Quainton	М	Yes	Yes	5.8	1.0	29.0	0	99.6
Wendover Town	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	3.8	1.0	17.0	0	31.7

Table 3: Summary of exceedances during period (June 2022)

Monitoring Site ID	Period of trigger alert &	Investigation	Outcomes / Resolution / Remedial measures implemented
	Concentration recorded		
Chesham Lane – Dust	02/06/22 18:00 - 18:59; 354 µg/m ³	No works undertaken by EKFB after 18:00h	N/A
Rosehill Farm – Dust	15/06/22 14:00 - 14:59; 216.3 μg/m ³	During this day, EKFB were moving materials (Subsoil/Topsoil) from Chetwode North Excavation to Twyford. The dust exceedance was recorded by Rosehill Farm monitoring, located 50m from the site access road. It was a particular dry day and works have to stop during the afternoon due to amount of dust.	activities were observed on site. Therefore, dust exceedances may have been generated by ADTs movement.

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

