

April 2022

Air Quality and Dust Monitoring Monthly Report – April 2022 Buckinghamshire Council

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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 April 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for April 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:

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

- East West Rail Overbridge: Casting of east and west wingwalls, reinforcement for wingwall bases, and concrete remedial works;
- Charndon Lodge Underbridge: Casting of east abutment wall, rebar and formwork for west abutment, concrete repair works, and north approach cutting;
- Perry Hill Overbridge: Piling, pile cropping and foundation blinding;
- Addison Road Overbridge: Pile caps and temporary utility diversions;
- East West Rail Culvert: Dig and replace (D&R) and concrete blinding;
- IMD West Culvert: Temporary watercourse diversion and D&R;
- IMD East Culvert: Temporary watercourse diversion and D&R;
- West Street: Temporary utility diversions and temporary road diversions (enabling works);

- FCC Sidings: Demolition of the FCC gantry crane;
- CA North: earthworks: OXD West D&R and 6C capping layer, and mass haul road (MHR) at grade crossings;
- Quainton Utility diversions: UTX1 enabling works (concrete shaft sinking) and doddershall ducting / trenching works; and
- Site access road: School Hill to FCC completion.

Twyford to Greatworth

- School End: compound development, stone deliveries, topsoil stripping, Drainage and I&M;
- Hermitage: no works;
- Twyford: Access Road (causeway crossing), drainage/culvert;
- Rosehill Farm: Old Stable Cottage demolition, I&M and pond maintenance;
- Vegetation clearance, access road, drainage, and ponds maintenance along SAR from ch 86;700 to 85;000; and
- Turweston: access road, topsoil stripping, compound maintenance, drainage/ponds, bulk excavation, and slab crossing.

Aylesbury

<u>Meadoway:</u>

- Construction of the A418 Oxford Road Main Compound;
- Construction of the A418 Security Plaza access road; and
- Earthworks (Aylesbury North Cutting excavation, stockpile construction) (located on north side of the A418 Oxford Road, within Aylesbury Golf Course). Oat Close:
- Earthworks (Aylesbury Embankment excavation, stockpile Construction); and
- PRA Overbridge piling works.

<u>Glebe House:</u>

- Construction of the A418 Oxford Road Main Compound; and
- Earthworks (Aylesbury North Cutting excavation, stockpile construction) (located on north side of the A418 Oxford Road, within Aylesbury Golf Course). <u>Moat Farm:</u>
- Earthworks (Aylesbury South Cutting drainage);
- PRA Overbridge piling works;
- PRA Rail Deliveries maintenance of stockpile and access road; and
- PRA Rail Deliervies by Train and unloading, transport to stockpile area. <u>Westfield:</u>
- Earthworks (Aylesbury South Cutting, stockpiling);

- PRA Overbridge piling works;
- PRA Rail Deliveries maintenance of stockpile and access road; and
- PRA Rail Deliervies by Train and unloading, transport to stockpile area.

The Colne Valley Viaduct (CVV) LTP1

- Jetty Piling: piling plant form, platforms, support plant and compound;
- Cofferdam Sheet Piling: piling plant and support plant;
- 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;
- North Embankment Compound: compound operation;
- Ground Investigation Works: GI works and overwater GI works;
- DWSC Compound: compound operation;
- River Colne Realignment; removal of RC Crossing;
- Core Drilling of Concrete;
- Pier Construction: standard piers(P54 -P29)– FRC works for pile cap and pier yard supporting activities, post tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts and earthworks
- Pumping Water Management from ch 25.900 to 29.500;
- Maintenance of the haul road from ch 25.900 to 29.500;
- Satellite welfares;
- Generator farms;
- Pile Trimming;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversion;
- Environmental Maintenance;
- Bentonite Farms: RC slab demolition;
- Cofferdam Excavation; Dewatering, Waling Beams and Concrete Plugs;
- Utilities;
- Pier Construction;
- INNS River Colne to GUC and GUC to Harvil Road (removal);
- A412 Gas Crossing Emergency Dismantling; and
- Launching Girder and Deck Works.

Chalfont St Peter Vent Shaft

- General Plant;
- Basement Secant Piling Works: excavate & cut contiguous & secant piles;
- Road Maintenance Works;
- Secondary Lining: slipform works;
- Reinforced Concrete Internal Structure: concrete walls and floors;

- Connections to Tunnels: demolition and reinforced concrete works; and
- Basement Construction: reinforced concrete capping beam and ground beams, excavation of capping beam and basement and waterproofing works.

Amersham Vent Shaft

- General Site Activity: general plant;
- Dewatering;
- Temporary Capping Beam: ground monitoring;
- Shaft Base Slab: concrete pours; and
- Secant Piling: secant piling, excavate and cut piles.

Chalfont St Giles Vent Shaft

- General Site Activity: general plant;
- Secant Piling: excavate and cut piles;
- Road Maintenance Works;
- Secondary Lining;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connections to tunnels: demolition and reinforced concrete works; and
- Basement Construction: reinforced concrete capping beam, excavation of capping beam and waterproofing works.

Little Missenden Vent Shaft

- General site activity: general plant;
- Post Treatment: drilling and grouting;
- Dewatering;
- Temporary Capping Beam: ground monitoring;
- Shaft Excavation; and
- Secant Piling.

Chesham Road Vent Shaft

- General site activity: general compound power and muck-away; and
- Shaft construction using In-Situ Casson Method: concrete pour of shaft walls and sinking of shaft to formation levels.

North Portal work site

- Early Works: site fencing, mobilisation and site set-up;
- Temp. & Perm. Access Road: scrape formation, hardstanding, kerbing, drainage, services, asphalt and signage;
- Piling platform -Area 1: Cut & Fill, stabilisation, hardstanding, P1 Ducting and drainage;

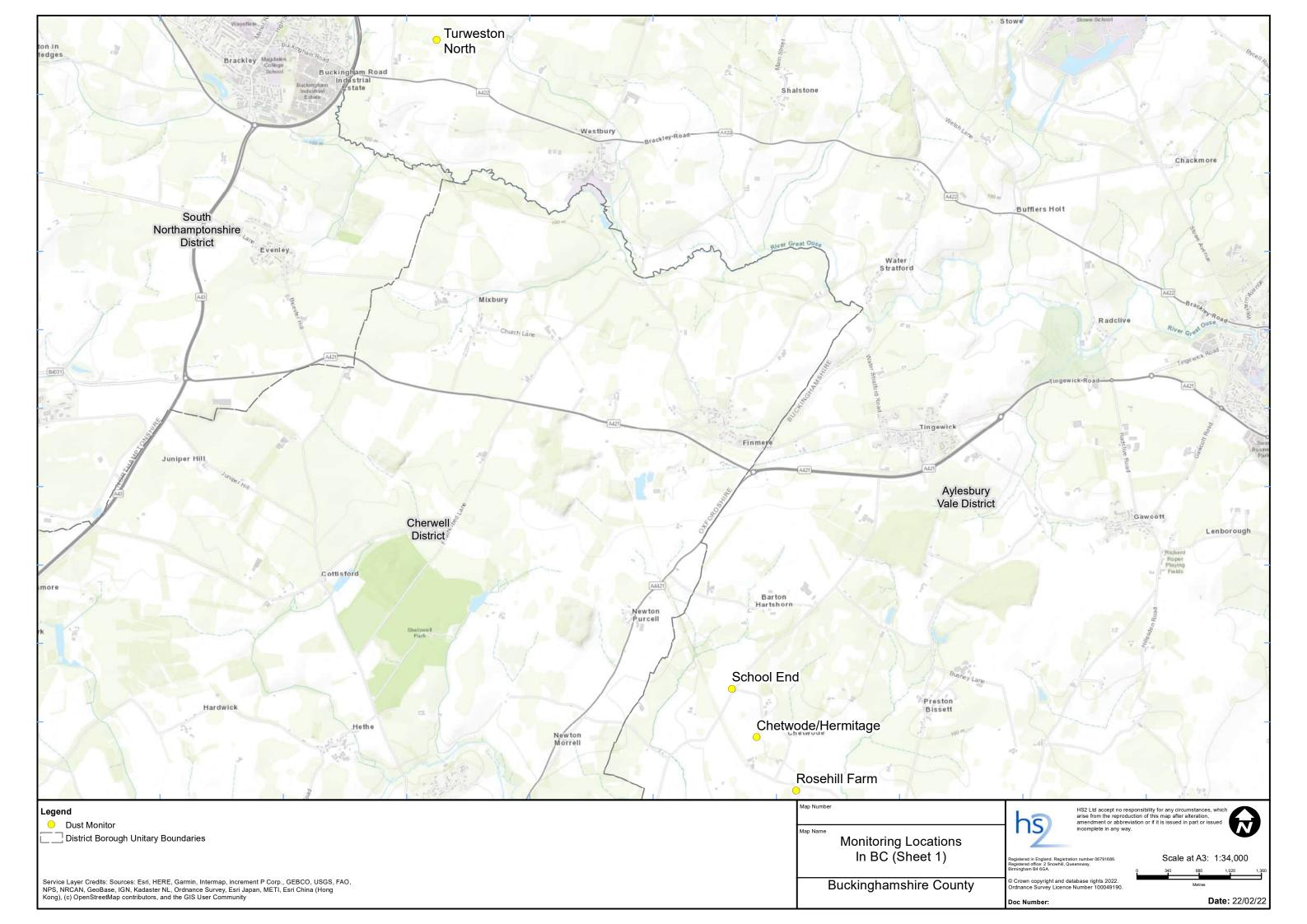
- Piling platform -Area 2: P2 Scrape formation, stabilisation, hardstanding, P2 ducting and drainage;
- Temporary utilities: temporary water connection, temporary IT connection;
- North Portal Barrettes and Headwall: North Portal barrettes and headwall Supporting Compound Plant (inside compound);
- North Portal Compound: general plant; and
- North Portal Barrettes and Headwall-Muck away.
- 1.1.5 Thirty-three (33) dust monitors are installed around the worksites, where works are currently underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 2, together with line charts of monthly data from the dust monitors 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 PM₁₀ concentrations of 190 μg/m³, over a 1-hour period, 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 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 3.
- 1.1.9 Data capture was below 90% for multiple monitors in April 2022 due to power problems and technical issues.
- 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.

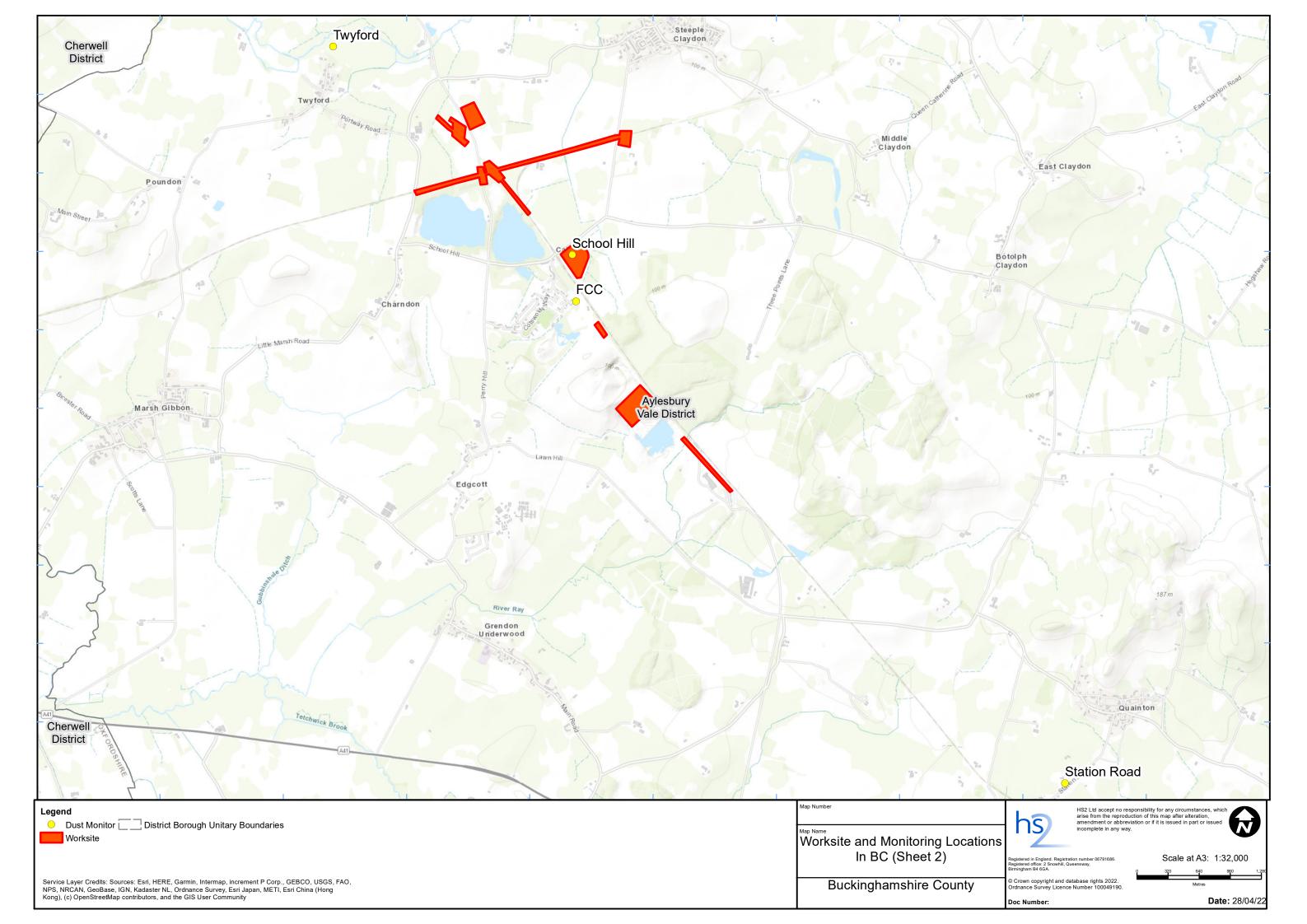
Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
HS2-22-43558-C	N/A	HGV & machinery using temporary access road creating dust. No mitigation.	Mitigations to reduce impact of dust in operation for wet & dry conditions. Situation regularly reviewed, site managers reminded of best practice.

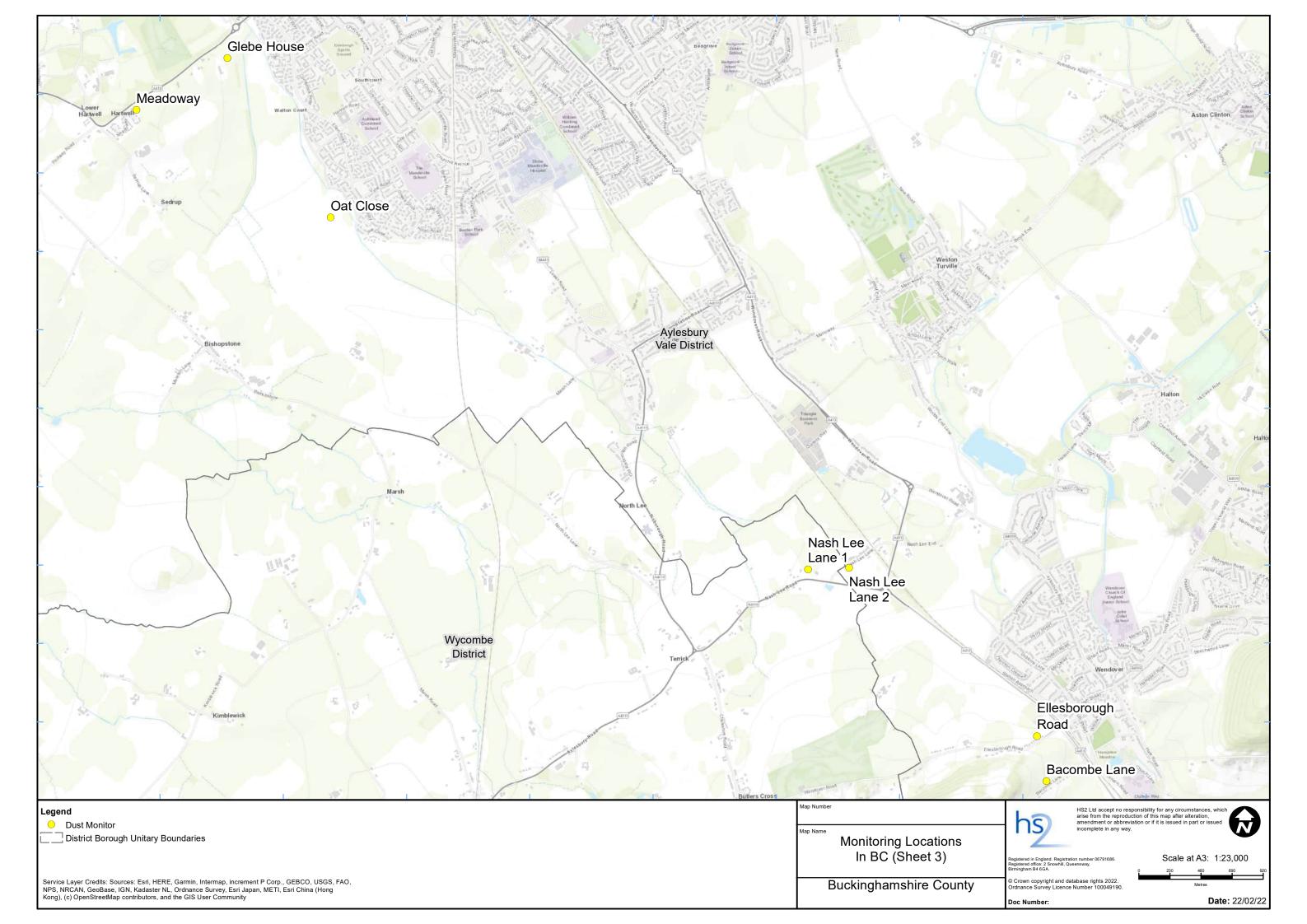
Table 1: Summary of complaints received during April 2022 in BC

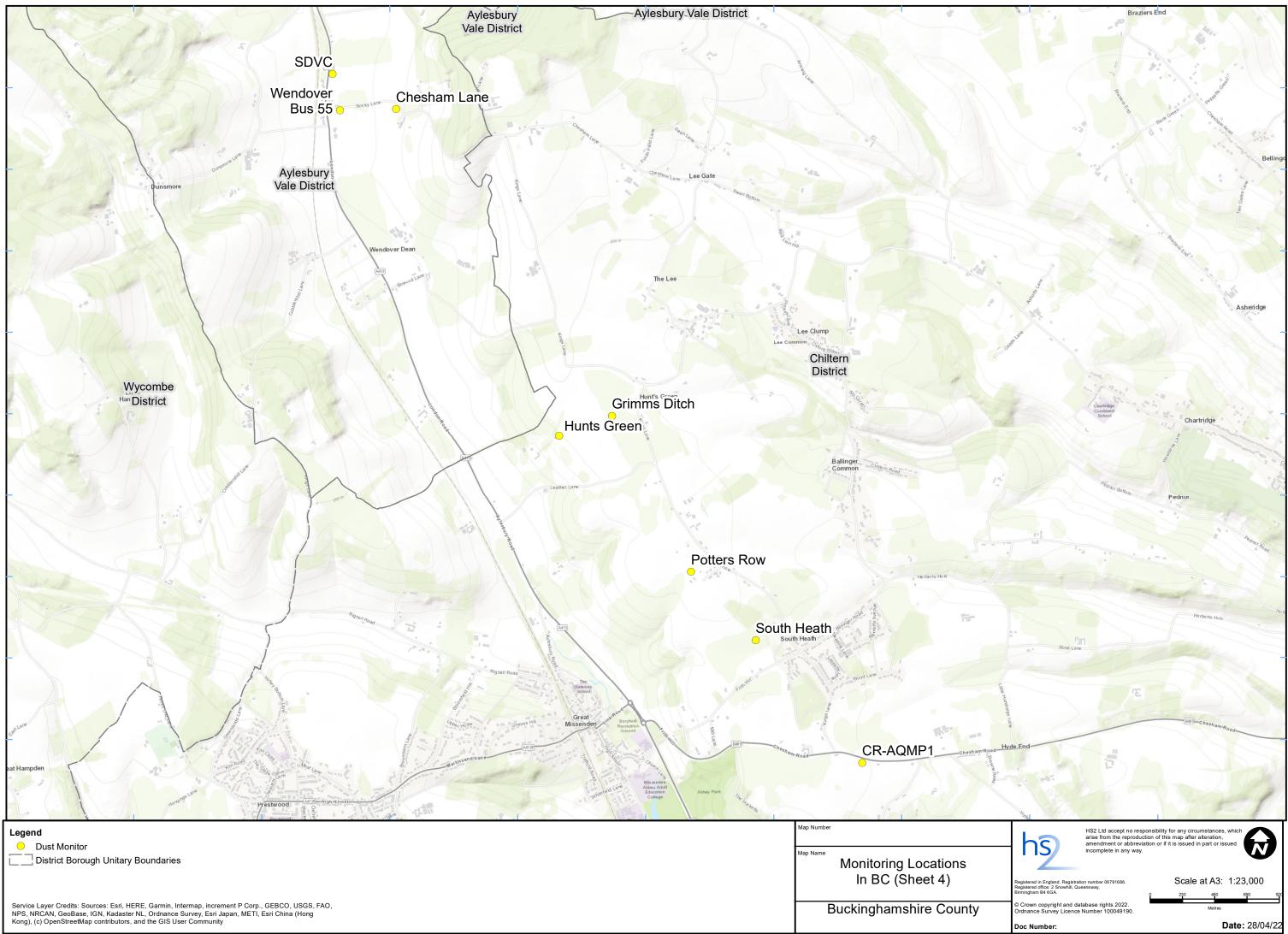
Appendix A – Monitoring Locations

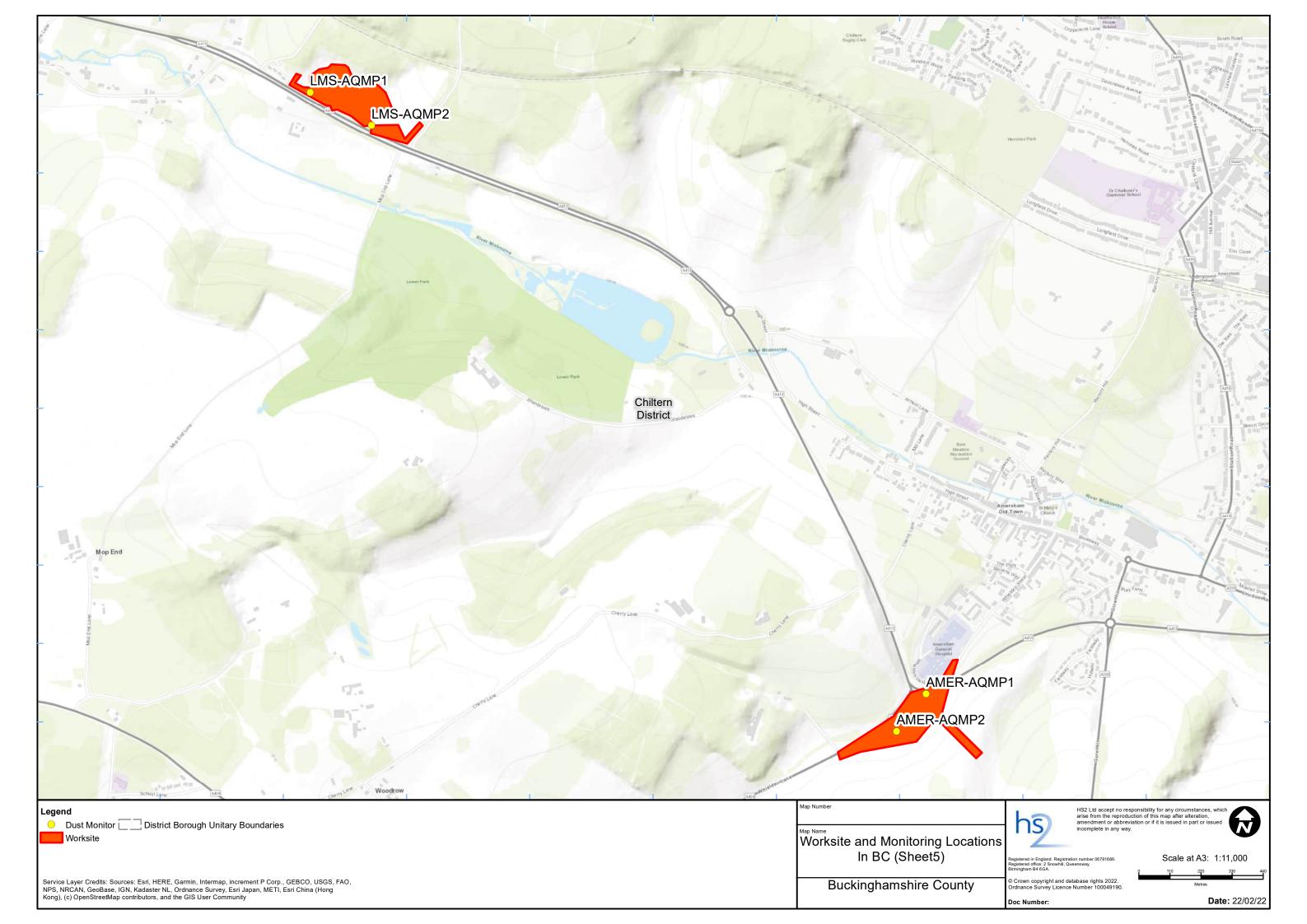
Figures 1-7: Worksite and monitoring locations during April 2022 within the BC

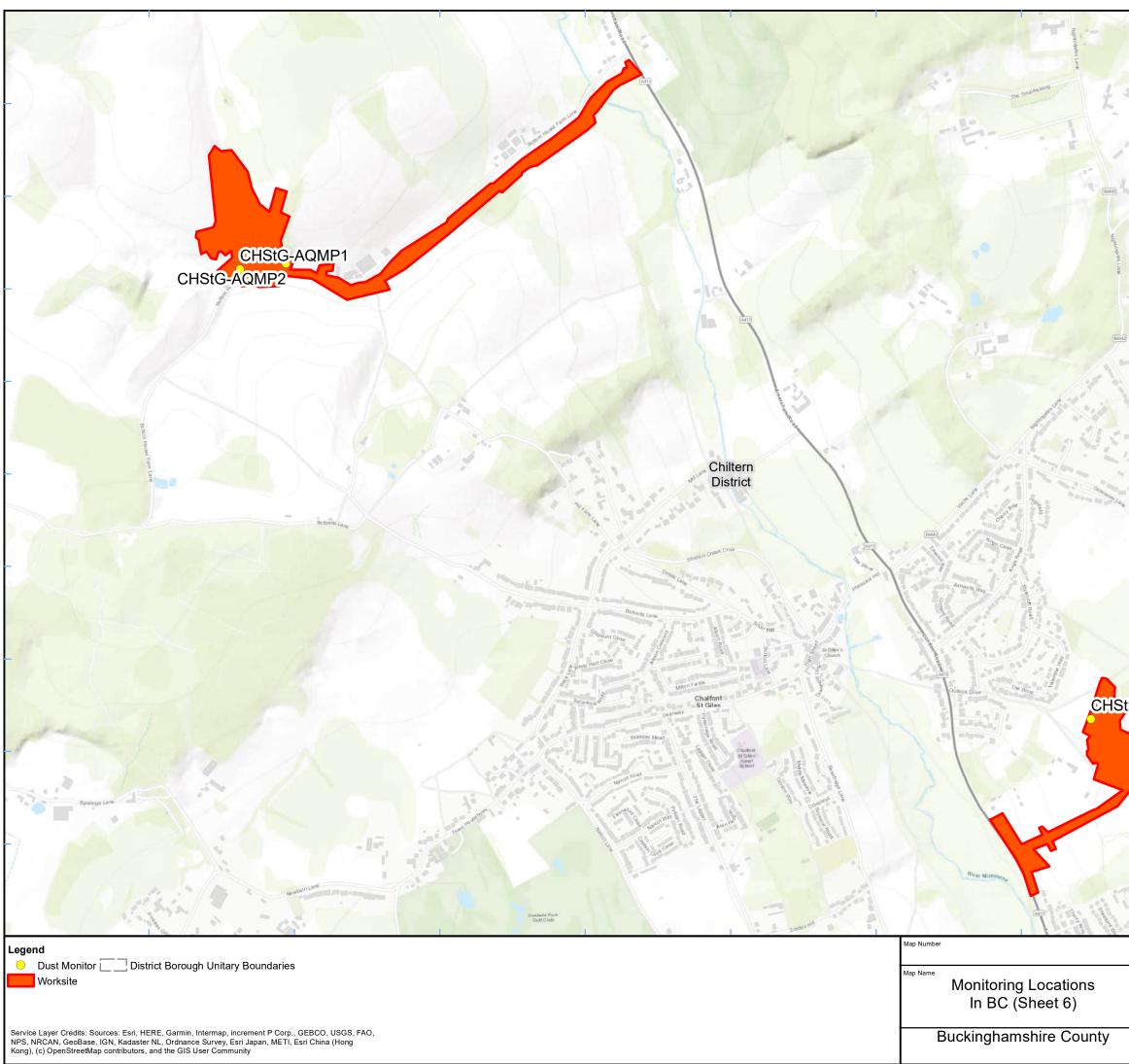




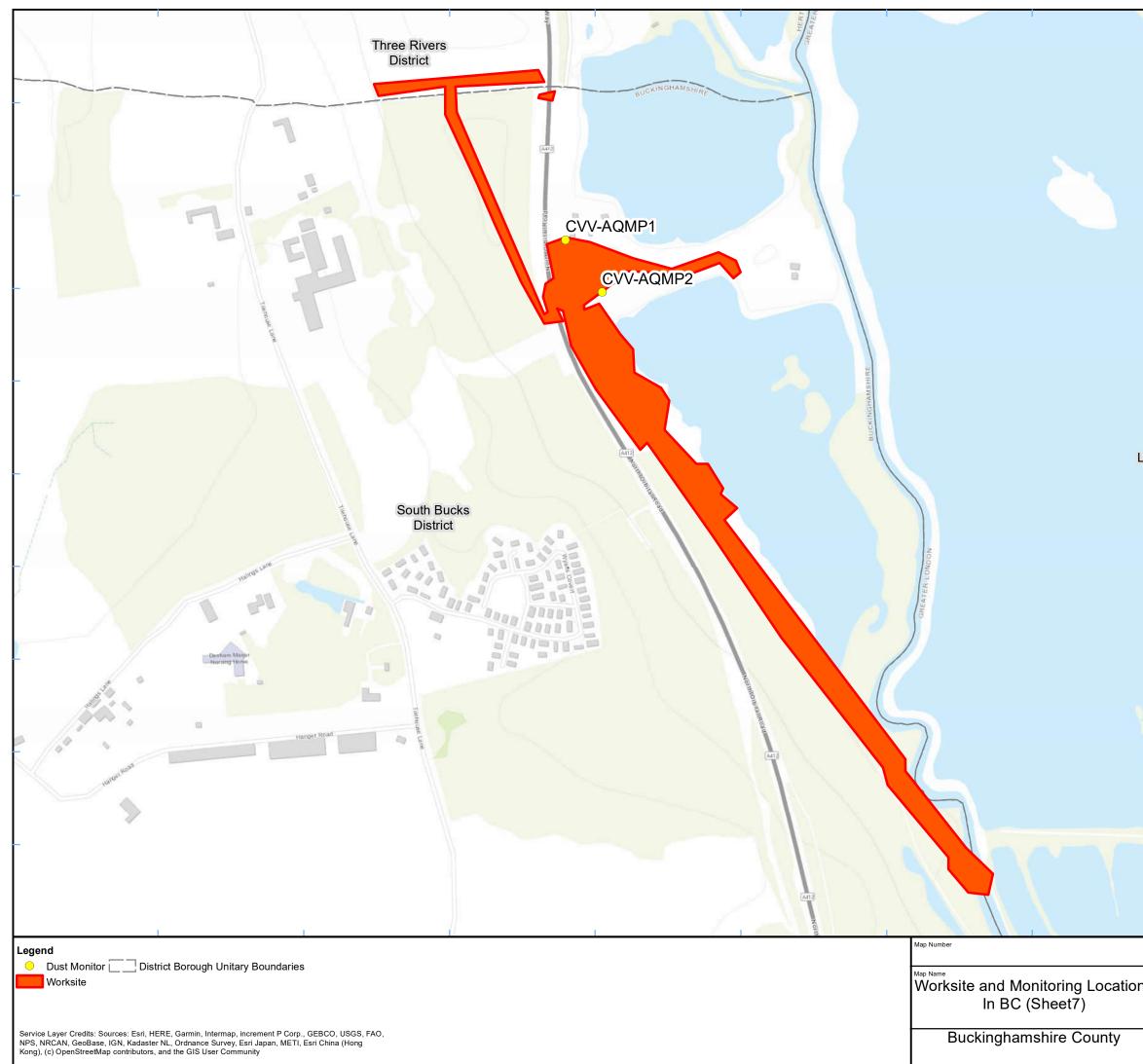








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Appendix B – Dust Monitoring Results

Table 2: Dust monitoring locations and April 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/m ³	1-hour data capture (%)
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	м	Yes	Yes	26.8	1.0	72.0	0	70.3
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	26.8	1.0	72.0	0	70.3
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	18.6	3.4	158.8	0	62.8
South Heath – Dust	490534, 202014	Bury Farm, South Heath	м	Yes	Yes	8.9	1.0	67.0	0	99.9
Potters Row – Dust	490075, 202502	Potters Row, South Heath	М	Yes	Yes	13.6	1.0	329.0	4	65.8
Hunts Green – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	9.4	1.0	72.0	0	89.4
Grimms Ditch – Dust	489511, 203611	The Lee, South Heath	м	Yes	Yes	6.1	1.0	38.0	0	25.3
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	8.4	1.0	63.0	0	79.9
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	8.5	1.0	93.0	0	51.9
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	9.0	1.0	63.0	0	88.5
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	6.6	1.0	16.0	0	21.7
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	7.6	1.0	53.0	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/m ³	1-hour data capture (%)
Chetwode/Hermitage – Dust	463936, 229521	Hermitage, Chetwode	м	Yes	Yes	9.6	1.0	62.0	0	58.1
Glebe House - Dust	480475, 212560	A418 Aylesbury	м	Yes	Yes	6.6	2.0	14.0	0	6.1
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	8.0	1.0	59.0	0	99.9
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	м	Yes	Yes	11.8	1.0	150.0	0	92.9
Ellesborough Road	486458, 207550	Ellesborough Road, Wendover	м	Yes	Yes	8.4	1.0	60.0	0	100.0
Nash Lee Lane 1	484766, 208782	Nash Lee Lane (west)	м	Yes	Yes	9.4	1.0	62.0	0	99.9
Nash Lee Lane 2	485069, 208793	Nash Lee Lane (east)	м	Yes	Yes	8.9	1.0	63.0	0	100.0
Bacombe Lane	486528, 207217	Bacombe Lane, Wendover	м	Yes	Yes	8.5	1.0	63.0	0	100.0
SDVC	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	9.1	1.0	63.0	0	100.0
Station Road	474068, 219307	Station Road, Quainton	м	Yes	Yes	8.0	4.0	22.0	0	5.1
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	М	Yes	Yes	8.3	1.0	58.0	0	99.9
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	8.2	1.0	52.0	0	98.2
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	8.2	1.0	55.0	0	98.6

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/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	1-hour data capture (%)
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	8.6	1.0	66.0	0	99.6
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	8.7	1.0	55.0	0	98.2
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	8.9	1.0	65.0	0	98.8
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	10.0	1.0	580.0	1	46.5
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	8.2	1.0	56.0	0	97.4
LMS-AQMP1	493190, 198848	On the south- west of the site	М	Yes	Yes	8.8	1.0	65.0	0	100.1
LMS-AQMP2	493407, 198731	On the south- east of the site	М	Yes	Yes	8.4	1.0	33.0	0	50.6
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	8.5	1.0	57.0	0	98.8

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

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures
			implemented
Potters Row – Dust	09/04/22: 19:01– 20:00; 241 μg/m ³ 15/04/22: 01:01– 2:00; 329 μg/m ³ 19/04/22: 15:01– 16:00; 266 μg/m ³ 20:01 – 21:00; 255 μg/m ³	Works carried out on the date and time were hauling and road swiping. Monitor located at circa 90m of the activity area. Dust suppression measures were in place. Farm on the other side of the monitor with the possibility of being working on the field.	It was found that the alarms weren't being notified to environmental team, trigger alarms notifications have been set up to immediately alert the environmental team when a trigger level is exceeded. Incident report to HS2 via Horace (L3) followed by investigation report and internally via Airsweb to be reported. HS2 and LA (Bucks Council) to be notified. Lessons learnt: more frequent suppression during particularly dry and windy periods will be required to reduce the likelihood of an exceedance.
CHStG-AQMP1	11/04/22: 17:01 – 18:00; 580 μg/m³	At the time of the trigger there were no obvious works taking place that can be attributed to the exceedance. Additionally, none of the nearby monitors showed exceedances at the time the trigger was recorded. Therefore, it was concluded that the exceedance was unlikely to have been generated from construction works.	Dust suppression mitigation measures will continue to be implemented.

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

