
High Speed Rail
(London-West Midlands)

Air Quality and Dust Monitoring
Monthly Report - April 2018

Three Rivers District Council

May 2018



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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Non-technical summary

This Air Quality and Dust Monitoring Report is published to satisfy commitments outlined in the High Speed Rail (London-West Midlands) Environmental Minimum Requirements (EMRs) Annex 1: Code of Construction Practice to present the results of air quality and dust monitoring carried out within the Three Rivers District Council (TRDC).

The report presents April 2018 monitoring data collected from a Chalfont Lane residential property adjacent to active HS2 construction works.

Future monthly reports will include a summary of the construction activities occurring; any complaints received; the data recorded over the monitoring period; any periods in exceedance of the agreed trigger levels; the results of any investigations; and, where the works have been found to be the source, any action taken to immediately resolve the issue and to prevent a recurrence.

Abbreviations and descriptions

| | |
|------------------|--|
| AQMA | Air Quality Management Area |
| AQS | Air Quality Strategy |
| BPM | Best practicable means |
| CFA | Community Forum Area |
| CoCP | Code of Construction Practice |
| Defra | Department for Environment, Food and Rural Affairs |
| DfT | Department for Transport |
| EPUK | Environmental Protection UK |
| ES | Environmental Statement |
| HGV | Heavy Goods Vehicle |
| IAQM | Institute of Air Quality Management |
| LDV | Light Duty Vehicle |
| LEMP | Local Environmental Management Plan |
| LGV | Light Goods Vehicle |
| NO _x | Oxides of nitrogen |
| NO ₂ | Nitrogen dioxide |
| PM ₁₀ | Particulate matter with an average aerodynamic diameter not exceeding 10 micrometres |
| SPG | Supplementary Planning Guidance |
| ULEV | Ultra Low Emission Vehicle |

1 Introduction

- 1.1.1 The nominated undertaker is required to undertake air quality and dust monitoring as necessary to comply with the requirements of the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, including specifically Annex 1: Code of Construction Practice. Monitoring will fulfil the following aims:
- monitoring the effectiveness of mitigation measures;
 - monitoring the impact of construction works; and
 - inform taking other actions as may be necessary to enable compliance.
- 1.1.2 Monitoring data and interpretive reports are to be provided to each relevant local authority monthly and shall include a summary of the construction activities occurring, any complaints received, the data recorded over the monitoring period, any periods in exceedance of agreed trigger levels, the results of any investigations; and where the works have been found to be the source, any action taken to immediately resolve the issue and to prevent a recurrence.
- 1.1.3 The report presents data from the monthly dust monitoring carried out within the Three Rivers District Council (TRDC) during April 2018.
- 1.1.4 The High Speed 2 M25 slip roads project will facilitate movement of construction traffic between the HS2 main works compound and the M25. The main works comprise of:
- Construction of a new entry slip onto the clockwise M25, from Shire Lane, to include associated drainage, utilities, lighting, signage and road markings to full motorway standards.
 - Construction of a new exit slip from the anti-clockwise M25, connecting to Chalfont Lane, to include associated drainage, utilities, lighting, signage and road markings to full motorway standards.
 - Construction of a Chalfont Lane diversion road, between Shire Lane and Hornhill Road, to include a temporary road to Local Authority Highway standards, a junction with Shire Lane and Hornhill Lane and associated signage on local roads.
 - Construction of a new junction for access to Orchards caravan park and footpath CSP/16/1.
 - Widening of Chalfont Lane between the M25 exit slip and Denham Way, to include a bell mouth access to a future Scottish and Southern Energy (SSE) sub-station, accesses to the future High Speed 2 (HS2) construction compound south of Chalfont Lane and construction of BT and City Fibre ducts and chamber diversions along Chalfont Lane.

2 Applicable standards and guidance

2.1 Relevant legislation

Construction dust

2.1.1 The Company shall undertake works in line with environmental requirements. These are stipulated in

- Appropriate UK legislation
- Osborne EMS and SHE Policy
- Environmental minimum requirements for HS2 Phase One which includes:
 - Annex 1: The Code of Construction Practice (CoCP)
 - Annex 2: Planning memorandum
 - Annex 3: Heritage memorandum
 - Annex 4: Environmental memorandum
- A class approval which was made after consultation to the Planning authorities for the following matters:
 - Handling of re-useable spoil or topsoil;
 - Storage sites for construction materials, spoil or topsoil;
 - Dust suppression
 - Road mud control measures.

2.2 Relevant guidance

Construction dust

2.2.1 The company shall seek appropriate guidance from The Institute of Air Quality Management (IAQM) and the CoCP.

3 Monitoring methodology

3.1 Construction dust

3.1.1 Monitoring of dust during construction of the project will be undertaken in accordance with Section 7 of the CoCP. The CoCP refers to the best practice in the IAQM and the GLA guidance documents as detailed in Section 2.

3.1.2 Future visual inspections for dust emissions will be undertaken at least once on each working day and the results recorded in the site log for all construction / demolition sites (regardless of the risk rating)

3.1.3 Dust will be measured at appropriate locations at the site boundary and/or at sensitive receptors using instruments that provide continuous measurements of particulate matter as PM₁₀. As a minimum standard of measurement uncertainty, these instruments shall be certified through MCERTS as being indicative ambient particulate monitors.

Risk rating

3.1.4 With reference to the guidance on the assessment of dust from demolition and construction from the IAQM, the largest and closest human receptors for this job are located around 280m away from the works. A small population living in the South side of Chalfont lane and West of the M25 is around 70m. There is a small population of less than 10 receptors who live in Sunny Hill, at the South-East end of Chalfont lane. The dust emission magnitude is based on the scale of the anticipated works and could be classified as small, medium or large.

- **Earthworks:** It has been classified as *medium*, the maximum area estimated to have works taken place at the same time is less than 10,000m² with bunds shorter than 8m and less than 100,000 tonnes of moved material. Dust materials such as silt are not expected.
- **Trackout:** Most of the loads will be coming and leaving from the M25 bell mouths. Due to HS2 requirements, heavy vehicles using local roads are limited to 24 movements a day, which are 12 HDV vehicles. Therefore this has been classified as *medium*.

| Activity | Dust Emission Magnitude |
|------------|-------------------------|
| Earthworks | <i>Medium</i> |
| Trackout | <i>Medium</i> |

3.1.5 The table below, which follows the Table 10 format, summarise the Dust risk to define site specific mitigations:

| Potential Impact | Risk | |
|------------------|-------------|-------------|
| | Earthworks | Trackout |
| Dust Soiling | Medium risk | Medium risk |
| Human Health | Low risk | Low risk |
| Ecological | Low risk | Low risk |

Monitoring locations

Table 1 – Monitoring locations – construction dust

| Worksite reference | Monitoring site ID | Grid reference | Location description | Area of works | Dust risk rating for site | Monitoring site active during period (Y/N) | Change to site since previous period report (Y/N) |
|--------------------|--------------------|----------------|----------------------|--------------------------------|---------------------------|--|---|
| M25 Slip Roads | Chalfont Lane | TQ 02892 91512 | Chalfont Lane | Chalfont Lane – Sunnyhill Road | Medium | Y | N |

3.1.6 Please refer to Figure 2 in Appendix B for the mapped location of the dust monitor.

4 Monitoring results

4.1 Construction dust

Data summary

4.1.1 Included below are the summary statistics for Chalfont Lane.

4.1.2 A line chart of the data is included in Appendix C

Table 2 – Summary statistics – construction dust 15 minute indicative PM₁₀ concentrations

| Worksite reference | Monitoring site ID | Mean 15 minute PM ₁₀ concentration (µg/m ³) | Minimum 15 minute PM ₁₀ concentration (µg/m ³) | Maximum 15 minute PM ₁₀ concentration (µg/m ³) | Number of 15 minute periods exceeding trigger level of 250 µg/m ³ | 15 minute data capture (%) ¹ |
|--------------------|--------------------|--|---|---|--|---|
| M25 Slip Roads | Chalfont Lane | 12.34 | 0.3 | 291.9 | 2 | 95 |

Exceedances of dust trigger level

4.1.3 *Table 4 below presents a summary of exceedance of dust trigger levels including dates/time period and an explanation.*

¹ Data capture calculated in accordance with Defra Local Air Quality Management Technical Guidance 2016. The average is calculated by adding the total of the measurements and dividing by the number of measurements.

Table 3 – Summary of exceedances of trigger level – construction dust

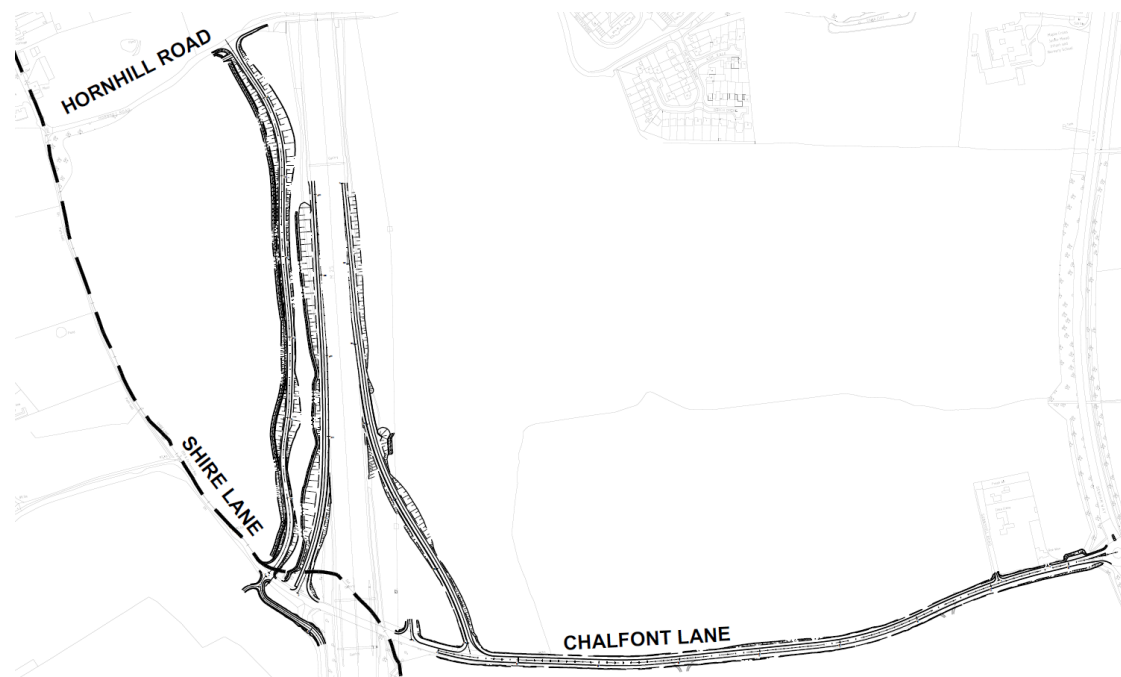
| Period exceeding trigger level | Worksite reference | Monitoring site ID | Complaint reference number (if applicable) | Reason | Resolution |
|--------------------------------|--------------------|--------------------|--|---|---|
| 19/04/2018 14:00 | M25 Slip Roads | Chalfont Lane | N/A | Unknown reason for trigger No work was being undertaken at the time of exceedance. | TAG security camera (at the monitor location) adjacent to Sunnyhill Road default position adjusted to view down Chalfont Lane to ensure footage is captured for all future breaches of the 15 minute trigger level. |

4.2 Complaints

4.2.1 There are no complaints relating to dust in this period.

Appendix A – Site locations

Figure 1 – Construction site

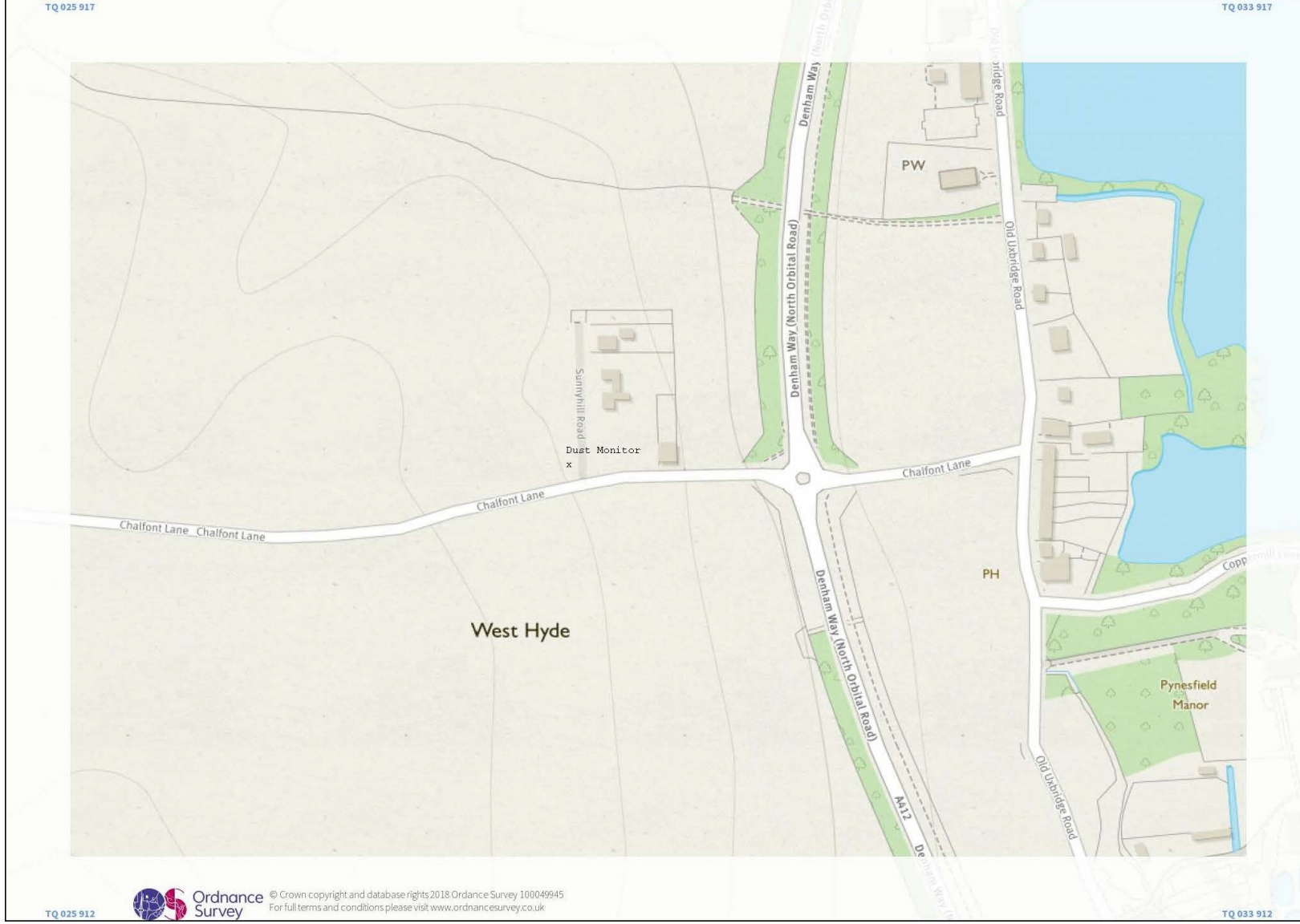




Appendix B – Monitoring locations

Construction dust

Figure 2 – Construction dust monitoring site locations during month April 2018

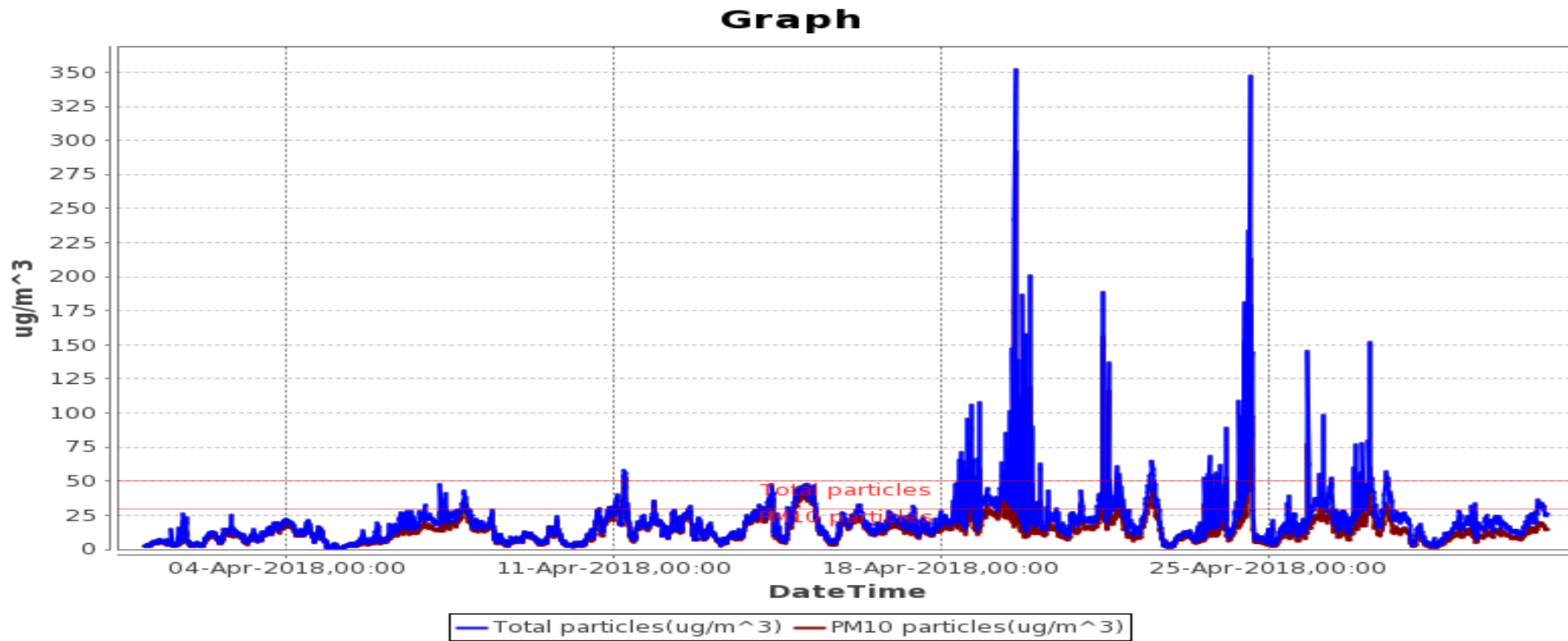


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Appendix C – Monitoring data

Construction dust

Figure 3 – Construction dust 15 minute mean indicative PM₁₀ concentration for Chalfont Lane



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