



Dust and Air Quality Innovation and Expertise

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Quarterly non-technical summary: Mountsorrel Quarry particulate matter, dust and weather monitoring

Date range: Quarter 2 2026 (27 March – 30 June 2026)

Date Report Issued: 08 October 2026

Introduction

Every month, the results of dust and particulate matter monitoring at Mountsorrel Quarry are compiled and summarised in compliance reports, which are then shared with Charnwood Borough Council (CBC), Leicestershire County Council (LCC) and the Environment Agency. The monitoring results are discussed in more detail during Technical Liaison meetings held with CBC and LCC on a quarterly basis.

Once the quarterly liaison meetings are held, we prepare a cover letter to provide a non-technical overview of the most recent three months of finalised reports. This letter covers the period from 27 March – 30 June 2026.

An explanation of how and why dust and air quality are measured at Mountsorrel Quarry is available [here](#).

The format and focus of the compliance reports have been agreed with CBC and LCC. In addition to presenting PM₁₀ and PM_{2.5} data from both on-site monitors, emphasis is being placed on the frequency of short-term PM₁₀ alerts sent to quarry management, the investigations triggered by the alerts and the changes to on-site processes to minimise dust.

The general air quality of the surrounding area is assessed by comparing the particulate matter concentrations recorded by CBC at the southern end of Hawcliffe Road against the relevant Air Quality Objectives (AQOs). Data from a Defra Automatic Urban and Rural Network (AURN) monitoring station are also presented for reference. Prior to the February 2026 compliance report, the Leicester University AURN site was used. However, during the March quarterly technical meeting, it was agreed by CBC and LCC to use data from the Loughborough Thorpe Acre AURN site due to its closer proximity to the quarry. Consequently, the Loughborough Thorpe Acre AURN site has been used from the March 2026 compliance report onwards.

Weather summary

This quarter saw generally mild and temperate conditions with temperatures increasing steadily across April and increasing rapidly in both May and June. Rainfall was generally sparse across April and May with more consistent rainfall occurring in the first half of June. As June progressed, this rainfall declined rapidly with the final days of June seeing very little rainfall.

Winds were predominantly light to moderate in speed and were mainly recorded from the south during this quarter, with some variable wind directions reported in May. This would have resulted in the potential for dust propagation towards the east, south-east and north.

Deposited dust

The frequency of threshold level exceedances over the previous quarter is shown for each monitoring location in Figure 1 using pie charts.

During this period, deposited dust levels were below the site-specific threshold level at all but three locations. Dust levels exceeding the site-specific threshold were recorded at three monitoring locations during the quarter at Station 3, 6A and 11; a summary of the subsequent investigations carried out is presented in Table 1.



Figure 1: Frequency of high dust levels, Quarter 2 2026

Table 1: Summary of investigation results

Month	Location	Investigation summary
May 2026	Stn 6A	Short-term groundworks and concrete works at Railhead. Additional suppression applied following exceedance.
June 2026	Stn 3	Source from the northwest indicates it was not related to on-site activities.
June 2026	Stn 11	Source of high dust may be due to contamination, due to lack of comparable increase recorded at nearby monitors.

Particulate Matter

On-site PM_{2.5}

As can be seen in Figure 2, PM_{2.5} concentrations at Quorn House had a period average of 5.4 µg/m³. Measured PM_{2.5} concentrations at Hawcliffe Road were higher, with a period average of 8.5 µg/m³.



Figure 2: PM_{2.5} monitoring summary, Quarter 2 2026

Off-site PM_{2.5}

The period average PM_{2.5} concentrations recorded at the CBC monitoring station at the southern end of Hawcliffe Road was 5.5 µg/m³ or 55% of the Target Value for PM_{2.5} (10 µg/m³ as an annual average).

The period average concentration at the Loughborough Thorpe Acre AURN monitoring station was similar, at 5.1 µg/m³ or 41% of the Target Value. This information is displayed below in Figure 3.

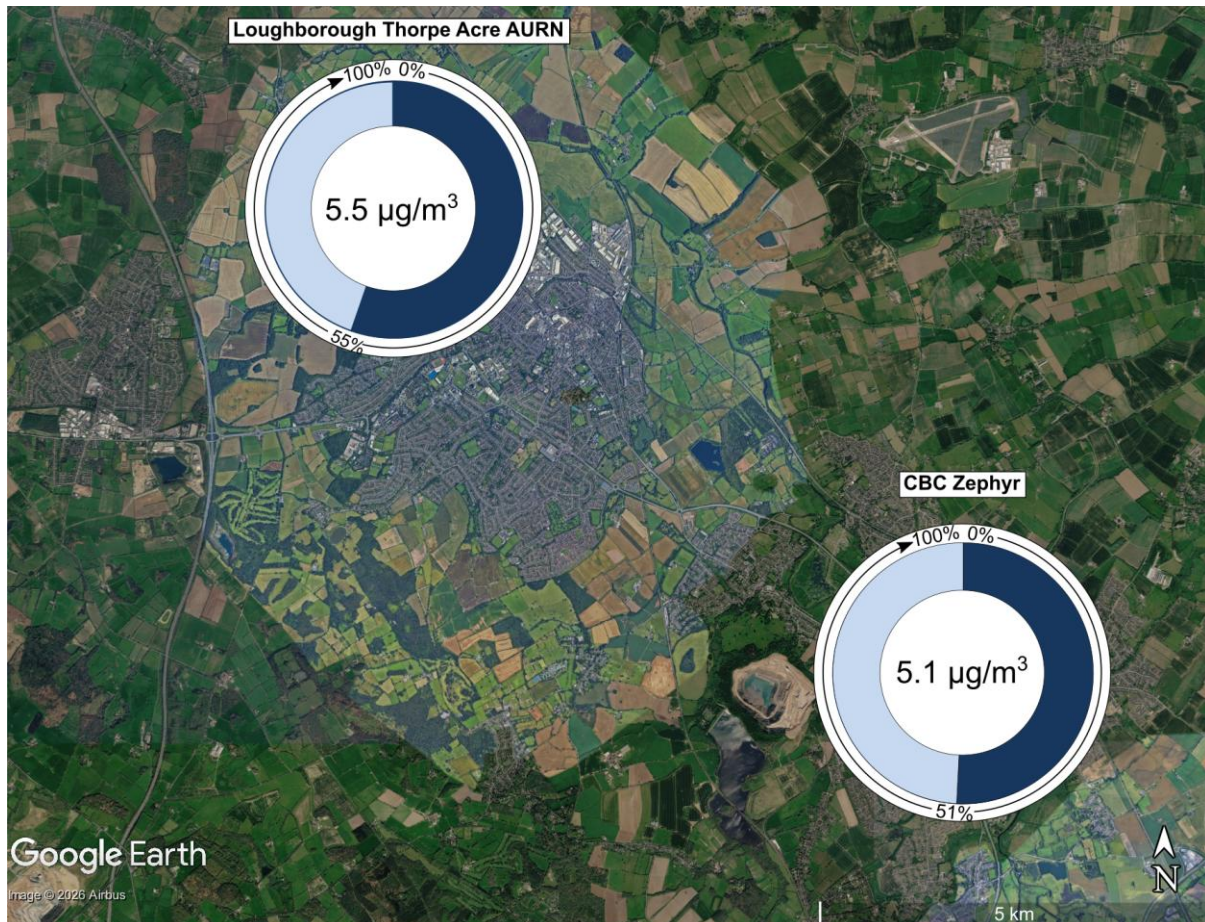


Figure 3: PM_{2.5} monitoring summary Quarter 2 2026, CBC and AURN Loughborough Thorpe Acre monitoring stations: period average is displayed as a value and as a percentage of Target Value (10µg/m³).

On-site PM₁₀

As seen in Figure 4, PM₁₀ concentrations recorded at Quorn House had a period average of 7.4 µg/m³ for this period, with the period average being 17.0 µg/m³ at Hawcliffe Road.

The short-term PM₁₀ trigger level (125 µg/m³ over a 15-minute period) was exceeded on 15 occasions during this quarter at Hawcliffe Road, with no exceedances recorded at Quorn House. Details of the resulting investigations can be found in the attached reports.



Figure 4: PM₁₀ monitoring summary, Quarter 2 2026

Off-site PM₁₀

As shown in Figure 5 : PM₁₀ monitoring summary Quarter 2 2026, CBC and AURN Loughborough Thorpe Acre monitoring stations. Period averages are displayed as a value and as a percentage of target value (40µg/m³). PM₁₀ concentrations recorded at the CBC monitoring station at the southern end of Hawcliffe Road was 7.5 µg/m³ or 19% of the AQO (40 µg/m³). The period average concentration at Loughborough Thorpe Acre monitoring station was 9.8 µg/m³ or 24% of the AQO.

No days with an average PM₁₀ concentration above 50 µg/m³ were recorded during this quarter.



Figure 5 : PM₁₀ monitoring summary Quarter 2 2026, CBC and AURN Loughborough Thorpe Acre monitoring stations. Period averages are displayed as a value and as a percentage of target value (40µg/m³).

Complaints

Between 27 March – 20 June 2026, it is understood that three complaints were received by the quarry. The local councils were kept informed by the subsequent investigation and any corrective measures taken.

Complaints are typically discussed in more detail during the quarterly environmental technical meetings held between Tarmac, external environmental consultants (such as DustScanAQ) and both Charnwood Borough Council and Leicestershire County Council.

DustScanAQ
October 2026



Dust, Particulate Matter and Weather Monitoring Report: April 2026

Mountsorrel Quarry

June, 2026

Tarmac



Document Control Sheet

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Disclaimer

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This report may include data obtained from trusted third-party consultants/laboratories that have been supplied to us in good faith. Whilst we do everything we can to ensure the quality of all the data we use, we cannot be held responsible for the accuracy or integrity of third-party data.

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1 Introduction

Mountsorrel Quarry has a comprehensive Dust Management and Monitoring Plan (DMMP). The DMMP was developed in 2011 and is subject to regular review and revision, in consultation between Tarmac and the local regulators (Leicestershire County Council (LCC) and Charnwood Borough Council (CBC)).

The DMMP is enacted through the quarry Site Improvement Plan (SIP). The SIP sets out a programme of actions to reduce the environmental impact of specific areas of the site operation, and is updated regularly by quarry management, with support from DustScanAQ through regular site visits and quarterly reviews with LCC and CBC.

Section 7.5 of the DMMP requires that a monthly summary and review of dust and particulate matter monitoring is prepared and circulated with LCC, CBC and the Environment Agency.

This report details the results of dust, particulate matter and weather monitoring around Mountsorrel Quarry during the period 26th March – 29th April 2026.

1.1 Report scope

The intention of this report is to summarise dust and particulate matter monitoring results for the given period and compare them against site-specific alert limits and thresholds. This report also details the results of any investigation carried out into elevated dust or particulate matter levels, as prompted by an exceedance of alert limits or thresholds.

1.2 Dust definitions

'Dust' is generally regarded as particulate matter up to 75 µm (micron) diameter and can be considered in two categories. Fine dust, essentially particles up to 10 µm, is commonly referred to as PM₁₀ and is measured to agreed standards and forms part of the national Air Quality Objectives (AQO). The AQO for PM₁₀ is currently 50 µg/m³ for the 24-hour mean, not to be exceeded 35 times per year and 40 µg/m³ for the annual mean. Particles up to 2.5 µm in diameter are referred to as PM_{2.5}. The interim target for PM_{2.5} is 12 µg/m³ for the annual mean (to be achieved by 2028), whilst the legal AQO for PM_{2.5} is 10 µg/m³ for the annual mean (to be achieved by 2040) as per The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023¹.

It may be noted that the above Regulations relate to average particle concentrations in Local Authority districts thus do not apply to any specific industrial or other operation, such as Mountsorrel Quarry, and are included for reference. Coarser dust (essentially particles greater than 10 µm) is generally regarded as 'nuisance dust' and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance.

¹ Statutory Instrument. (2023), 'The Environmental Targets (Fine Particulate Matter) (England) Regulations', No. 96. King's Printer of Acts of Parliament

2 Sampler locations

As shown in Figure 2.1 and Table 2.1, dust, particulate matter and weather conditions are measured at a number of locations around site and the surrounding area:

- Directional and depositional dust: currently monitored at 13 locations;
- Particulate matter: currently monitored at two locations;
- Weather conditions: currently monitored at one location.

The majority of the dust samplers around Mountsorrel Quarry comprise the ‘Frisbee-type’ deposition gauge combined with an adhesive ‘sticky pad’ directional gauge. These samplers are used to monitor ‘nuisance’ dust and samples from these instruments are collected on a monthly basis.

For particulate matter, Turnkey Osiris samplers are located at Stn 9 (Hawcliffe Road) and at Stn 13 (Quorn House). These recognised and certificated ‘indicative’ real-time devices are connected to their own wind vane and anemometer and provide near-instantaneous directional PM_{10} , $PM_{2.5}$ and PM_1 data directly to the quarry management team.

A weather station is located at the site offices off Wood Lane and collects a range of weather parameters over fifteen-minute intervals. Data from the weather station are available to the quarry management by means of a dedicated modem connection to the internet.

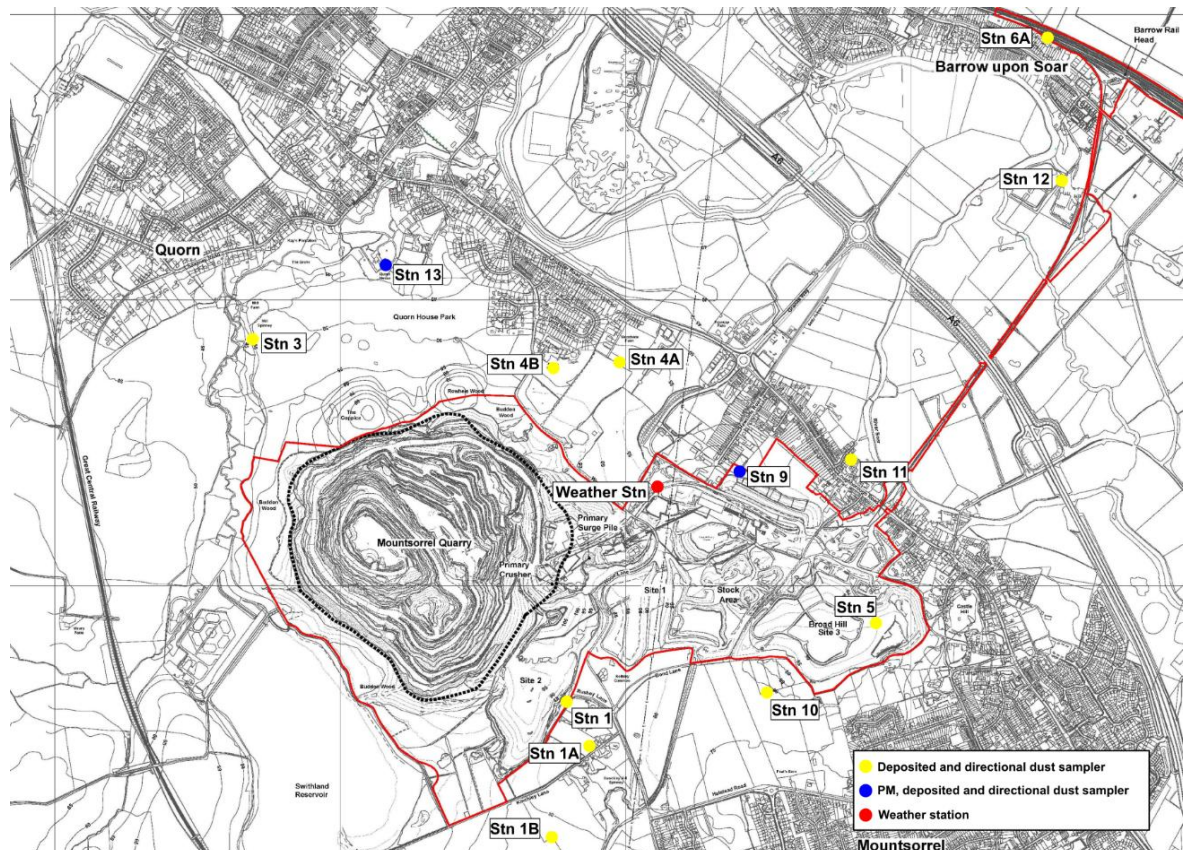


Figure 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Table 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Sampler reference	Easting	Northing	Locality monitored
Stn 1	456787	314586	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1A	456882	314449	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1B	456745	314112	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 3	455685	315844	Mill Farm; Quorn House
Stn 4A	456966	315787	Woodside Farm; Leicester Road
Stn 4B	456732	315767	Quorn Grange, Unitt Road, Northage Close, Quorn Park
Stn 5	457872	314875	Bond Lane; Crown Lane
Stn 6A	458655	316785	Sileby Road; Huston Close; Sileby Road (commercial)
Stn 9 (inc. PM)	457374	315398	Hawcliffe Road
Stn 10	457509	314627	Glebe Close; Halstead Road (south); Halstead Road (north)
Stn 11	457835	315504	Loughborough Road; River Soar (marina / caravan park)
Stn 12	458551	316457	Meadow Farm Marina and Caravan Park
Stn 13 (incl. PM)	456154	316087	Northage Close, Meeting Street
Weather Station	457126	315376	Wood Lane Site Offices

Charnwood Borough Council (CBC) is responsible for the monitoring of air quality within the borough and prepares Air Quality Annual Status Reports (ASRs) for submission to Defra. It operates an Earthsense Zephyr air quality monitor which is located within the Leicestershire County Council (LCC) depot at the southern end of Hawcliffe Road, in close proximity to the Osiris device at Stn 9. This device measures a number of pollutants including PM₁₀ and PM_{2.5}. The purpose of this monitoring is for CBC to compare measured concentrations against the relevant AQOs for these pollutants.

For additional context, the latest PM₁₀ and PM_{2.5} monitoring data from CBC are summarised in Appendix A and Appendix B, whilst a summary of the latest 12 months of data are provided in Appendix C for reference.

2.1 Alert thresholds and response procedures

To help the site reduce its impact on the surrounding area, a number of alert thresholds have been calculated, as outlined in Table 2.2.

Table 2.2: Alert thresholds

Pollutant	Threshold	Averaging period	Applies to
PM ₁₀	125 µg/m ³	15 minutes	Stn 9 (Hawcliffe Road), Stn 13 (Quorn House)
Deposited dust	125 mg/m ² /day	1 month	All deposited dust monitoring locations

For particulate matter (PM₁₀) an alert threshold of 125 µg/m³ for the 15-minute average has been in use for several years as a trigger limit for investigation to identify potential on-site issues.

Analysis of data from the site has demonstrated that PM₁₀ provides a stronger ‘site signal’ than PM_{2.5}. The purpose of alerts is to provide site managers with information regarding elevated PM₁₀ concentrations, allowing them to investigate and make operational changes if necessary. An alert threshold has therefore not been set for PM_{2.5} to prevent duplication.

PM₁₀ and PM_{2.5} concentrations recorded by CBC at the southern end of Hawcliffe Road and by Defra through the Automatic Urban and Rural Network (AURN) at Loughborough Thorpe Acre are presented in Appendix A and Appendix B respectively. Data from both locations have been compared against relevant Air Quality Objectives (AQOs) for PM₁₀ and PM_{2.5}.

For deposited dust, the DMMP sets out a site-wide deposited dust threshold of 125 mg/m²/day ‘undissolved solids’ as a trigger limit for investigation to identify the potential dust source/s, taking account of the directional data.

3 Results

3.1 Weather monitoring

Weather conditions can have a significant effect on the potential for dust propagation from a mineral site. Of particular importance are wind speeds, wind direction, and precipitation. Dust can be carried from a source towards receptors (such as nearby homes and other businesses) according to the strength and direction of wind. Precipitation is recognised to suppress dust and 0.2 mm antecedent rainfall is considered sufficient to suppress windblown dust for a number of hours.

The key weather data which might affect dust propagation (wind speed, wind direction, total daily precipitation and average daily temperature) for this reporting period are summarised in Figure 3.1 and Figure 3.2.

Average daily temperature fluctuated throughout the monitoring period, ranging from a minimum of 5.9 °C on 26th March 2026 to a maximum of 14.7 °C on 8th April 2026. Temperatures generally increased during the first half of the monitoring period before declining sharply between 8th and 10th April, followed by a gradual increase during the second half of the monitoring period. Rainfall was infrequent overall, with precipitation recorded on approximately 40 % of days during the monitoring period. However, a notable rainfall event occurred during mid-April, with 6.6 mm of rain recorded on 12th April 2026 and a further 4.8 mm on 15th April 2026. Minor rainfall events of less than 2 mm occurred at both the beginning and end of the monitoring period.

As seen in Figure 3.2, wind speeds were predominantly light to moderate (>0.5 – 6 m/s), with occasional stronger winds (6 – 10 m/s) observed from the south to south-southwest. Winds were most frequently recorded from the south and west during this period. This may have resulted in an increased potential for dust propagation towards the north and east during 26th March – 29th April 2026.

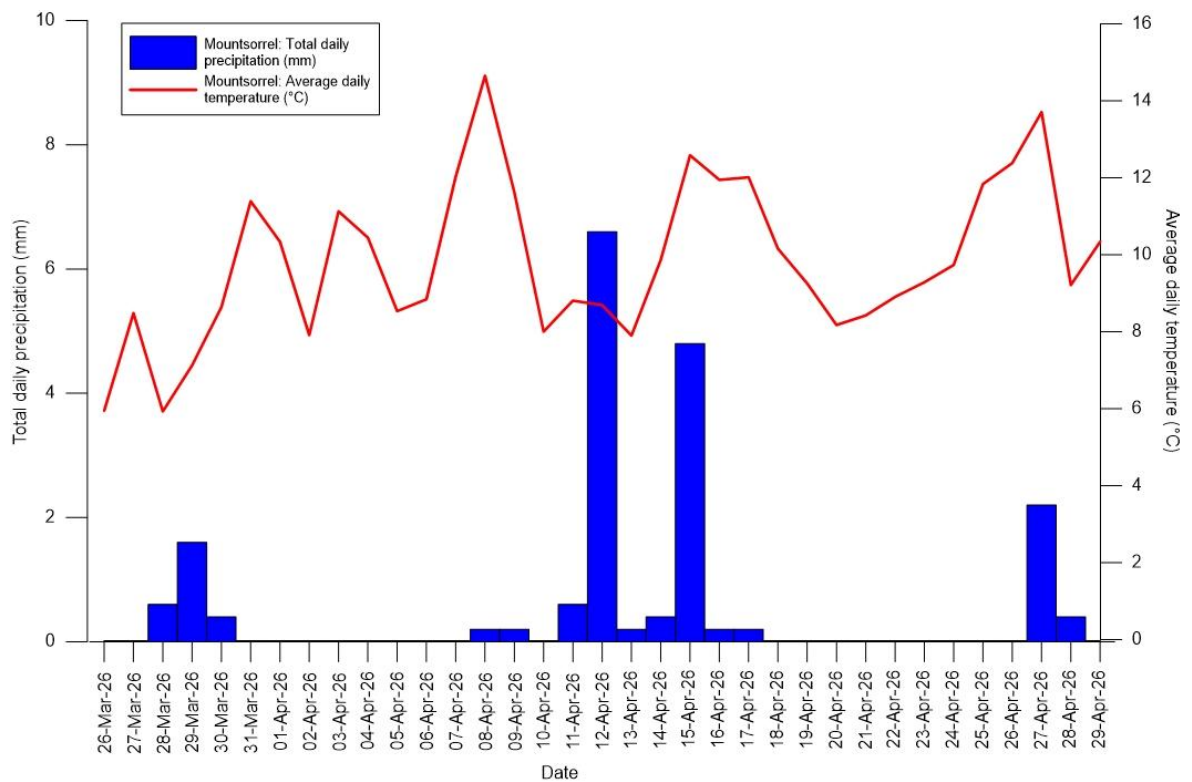


Figure 3.1: Total daily precipitation and average daily temperature, Mountsorrel Quarry, 26th March – 29th April 2026.

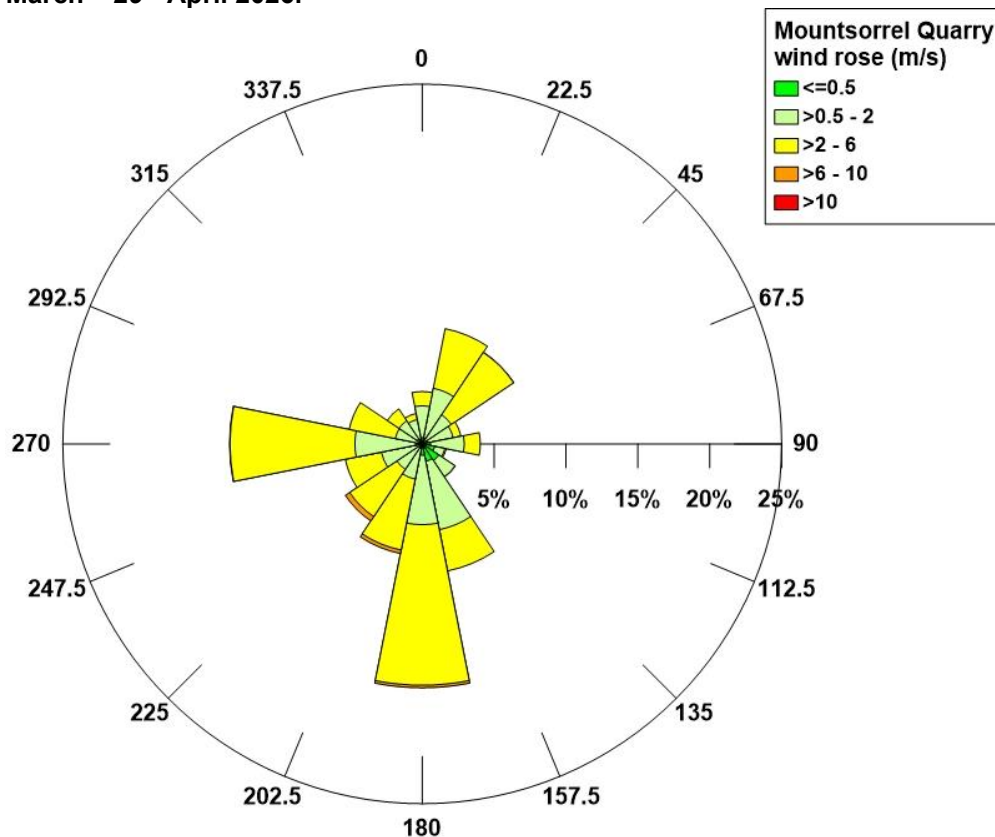


Figure 3.2: Wind rose, Mountsorrel Quarry, 26th March – 29th April 2026.

3.2 Particulate matter

3.2.1 PM₁₀

The available 15-minute data from the period of review are presented for both monitoring locations in Figure 3.3 and Figure 3.4 respectively. The red line denotes the site trigger level (125 $\mu\text{g}/\text{m}^3$ over the 15-minute average), whilst the dashed black line denotes the average concentration recorded over this period.

Additional PM₁₀ monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix A.

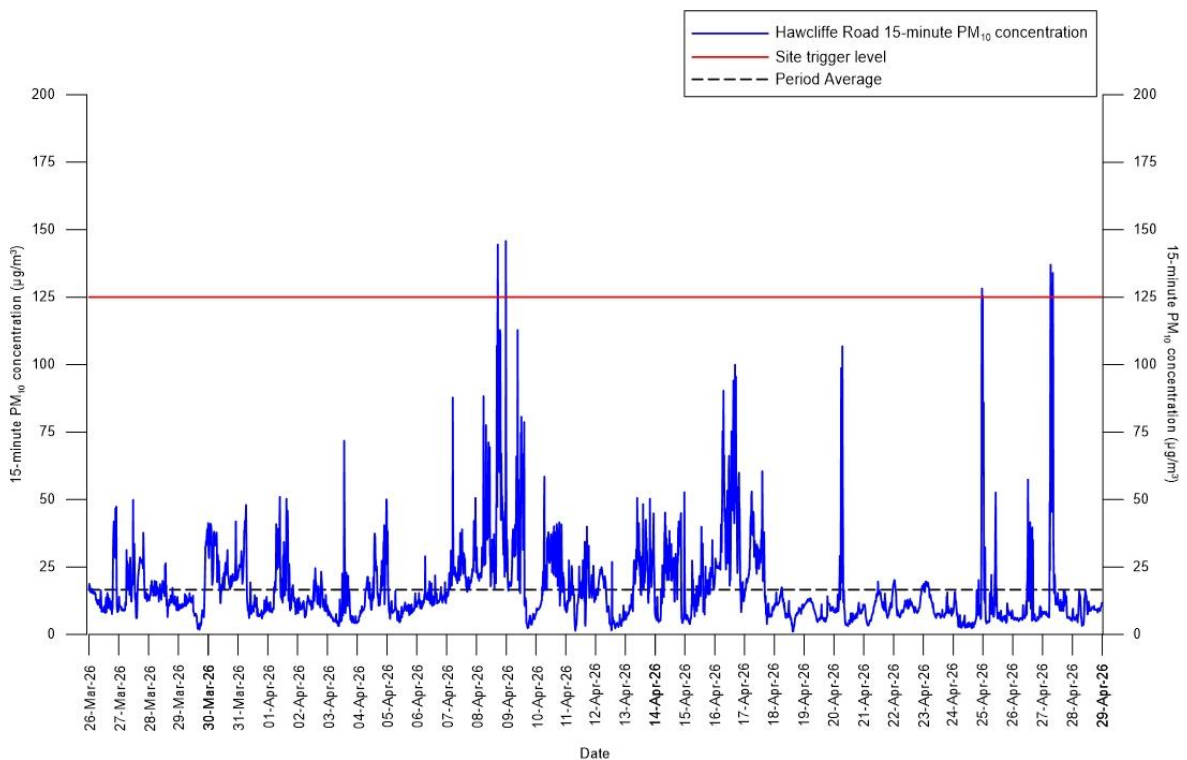


Figure 3.3: 15-minute mean PM₁₀ concentration, Hawcliffe Road, 26th March – 29th April 2026.

Figure 3.3 indicates that the period average concentration at the Hawcliffe Road sampler for this period was 16.6 $\mu\text{g}/\text{m}^3$, with the alert threshold being exceeded on three days during this monitoring period. Details of the exceedances are provided in Table 3.1.

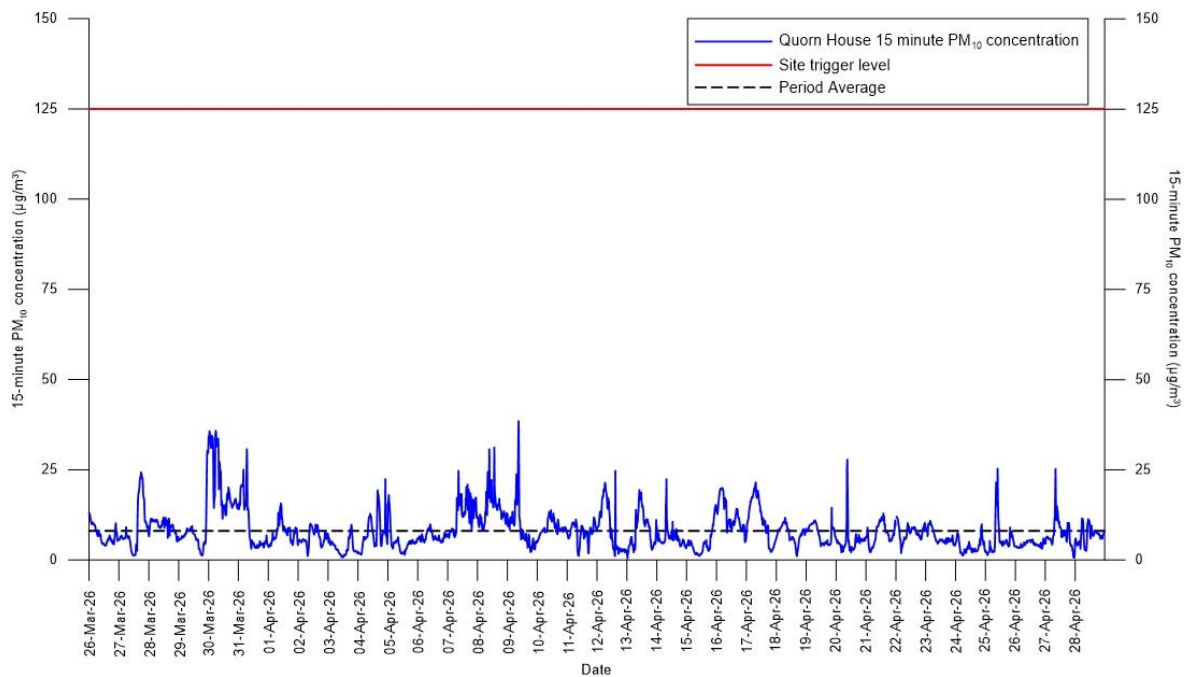


Figure 3.4: 15-minute mean PM₁₀ concentration, Quorn House, 26th March – 29th April 2026.

At Quorn House there were no exceedances of the PM₁₀ site trigger, and the period average was 8.1 µg/m³.

During the review period, trigger emails alerting staff to high PM₁₀ levels were sent on three days from the Hawcliffe Road Osiris. Details of the corresponding causes and investigations are provided in Table 3.1.

Table 3.1: Email alert responses, between 26th March – 29th April 2026 (using the trigger threshold, 125 µg/m³ for the 15-minute average)

Date of alert	Monitor	Details	Possible cause and investigation
08/04/2026	Hawcliffe Road	Exceedance from the W in the early evening, and from the ESE late at night	Low wind speeds may have reduced potential for air refresh, leading to accumulation of PM ₁₀ in the air. No on-site issues identified, and all dust suppression working.
24/04/2026	Hawcliffe Road	Exceedance from the E and SE late at night	Alerts coming from off-site directions.
27/04/2026	Hawcliffe Road	Exceedance from the SSW and NE in the morning.	No on-site issues identified, and all dust suppression working.

3.2.2 PM_{2.5}

The results of PM_{2.5} monitoring at Hawcliffe Road and Quorn House are presented in Figure 3.5 and Figure 3.6. The dashed black line denotes the average concentration recorded over this period.

Additional PM_{2.5} monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix B.

At Hawcliffe Road, the period average concentration was 9.8 µg/m³, whilst at Quorn House, the period average was 6.5 µg/m³. In general, PM_{2.5} concentrations recorded at Hawcliffe Road experienced greater fluctuations that at Quorn House (as shown by the increased frequency of spikes in the dataset); this is most likely due to its location on the site boundary and in a more built-up environment when compared to the rural location of Quorn House.

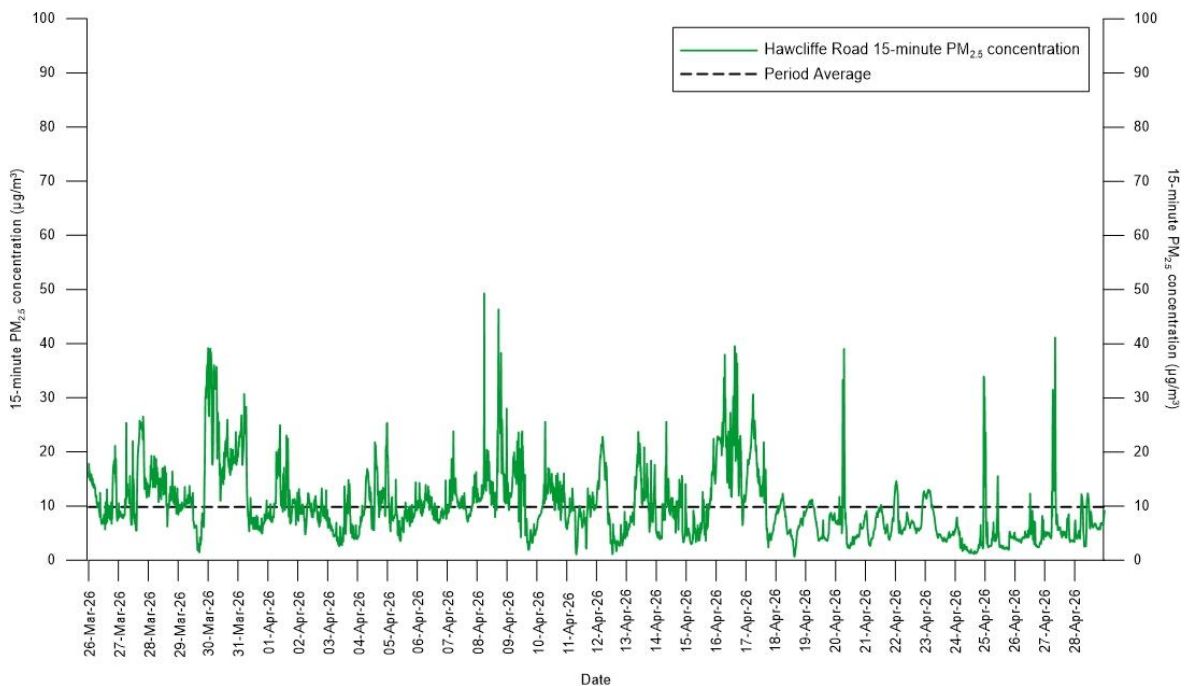


Figure 3.5: 15-minute mean PM_{2.5} concentration, Hawcliffe Road, 26th March – 29th April 2026.

For this period, 59% of PM₁₀ recorded at Hawcliffe Road comprised PM_{2.5}, whilst it made up 81% at Quorn House.

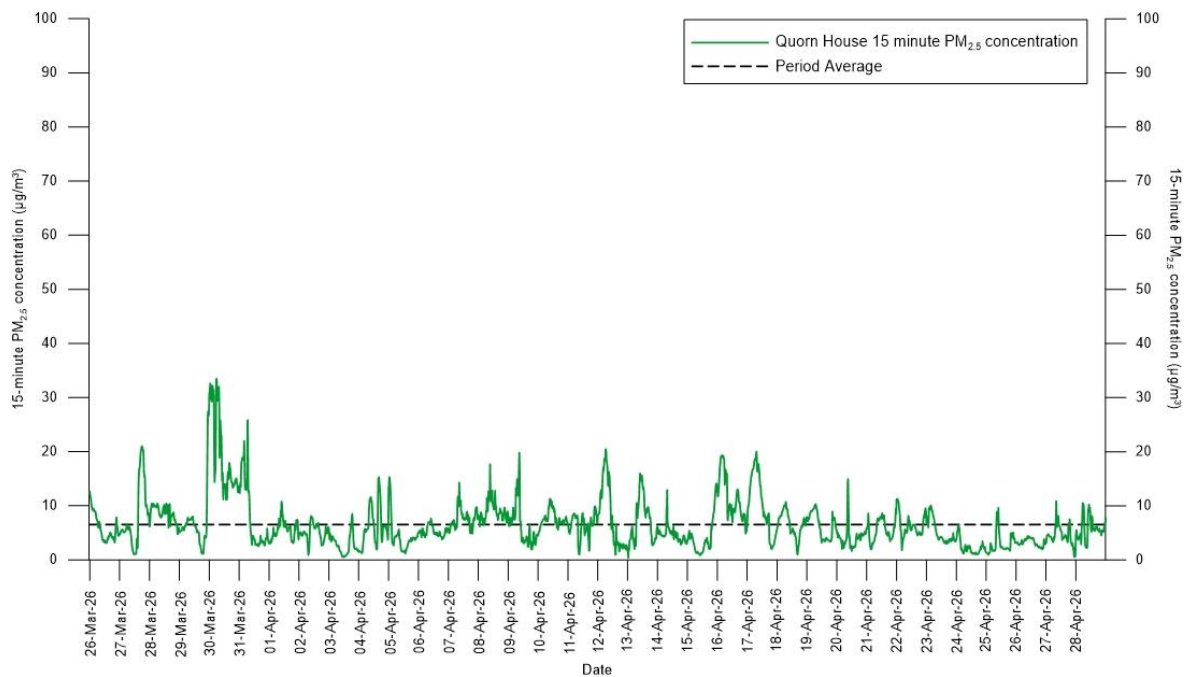


Figure 3.6: 15-minute mean PM_{2.5} concentration, Quorn House, 26th March – 29th April 2026.

3.2.3 Deposited dust monitoring summary

The deposited dust data for 26th March – 29th April 2026 are summarised in Table 3.2. As outlined above, there is a site-wide threshold for investigation to identify the potential dust source/s, taking account of the directional data. Table 3.2 shows that, for the available data, deposited dust levels during 26th March – 29th April 2026 were within the site-specific threshold for all stations.

Dust data for this monitoring period was unavailable for Stn 10 as the gauge had been displaced from its monitoring location and was subsequently found in a hedgerow after the Easter period. The gauge has now been reinstalled, and data will be available in the next reporting period.

Table 3.2: Summary of deposited dust (undissolved solids), 26th March – 29th April 2026

Undissolved solids (mg/m ² /day)				
This month report start date:		26-Mar-26		
This month report end date:		29-Apr-26		
Receptor location	Nearest / appropriate dust monitoring point	Reported value	Trigger: ≥ 125 ^a	Magnitude ^b
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	38	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	24	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	23	No	Very Low
Mill Farm; Quorn House	Stn 3	16	No	Very Low
Woodside Farm, Leicester Road	Stn 4A	29	No	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	61	No	Low
Bond Lane; Crown Lane	Stn 5	17	No	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	50	No	Very Low
Hawcliffe Road	Stn 9	73	No	Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	No data	No data	No Data
Loughborough Road; River Soar (marina / caravan park)	Stn 11	28	No	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	47	No	Very Low
Quorn House Park	Stn 13	47	No	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of mass deposition rate assessed against typical rate for semi-rural areas (30 - 80 mg/m²/day)

Regarding dust deposition over time, the rates across the sampling area have varied considerably. Trends in dust deposition rates (as undissolved solids) for the previous 12 months, together with the site-wide dust threshold are illustrated in Figure 3.7.

In general, as would be expected, dust deposition rates are typically lower in winter months than in summer months. This trend is clearly seen for most monitoring points in Figure 3.7, with some exceptions. Dust deposition rates have been consistently below the ‘trigger limit’ at all sampling locations, with the exception of Stn 4A, which has exceeded the threshold on one occasion over the past 12 months. Details of the associated investigation can be found in the corresponding compliance report.

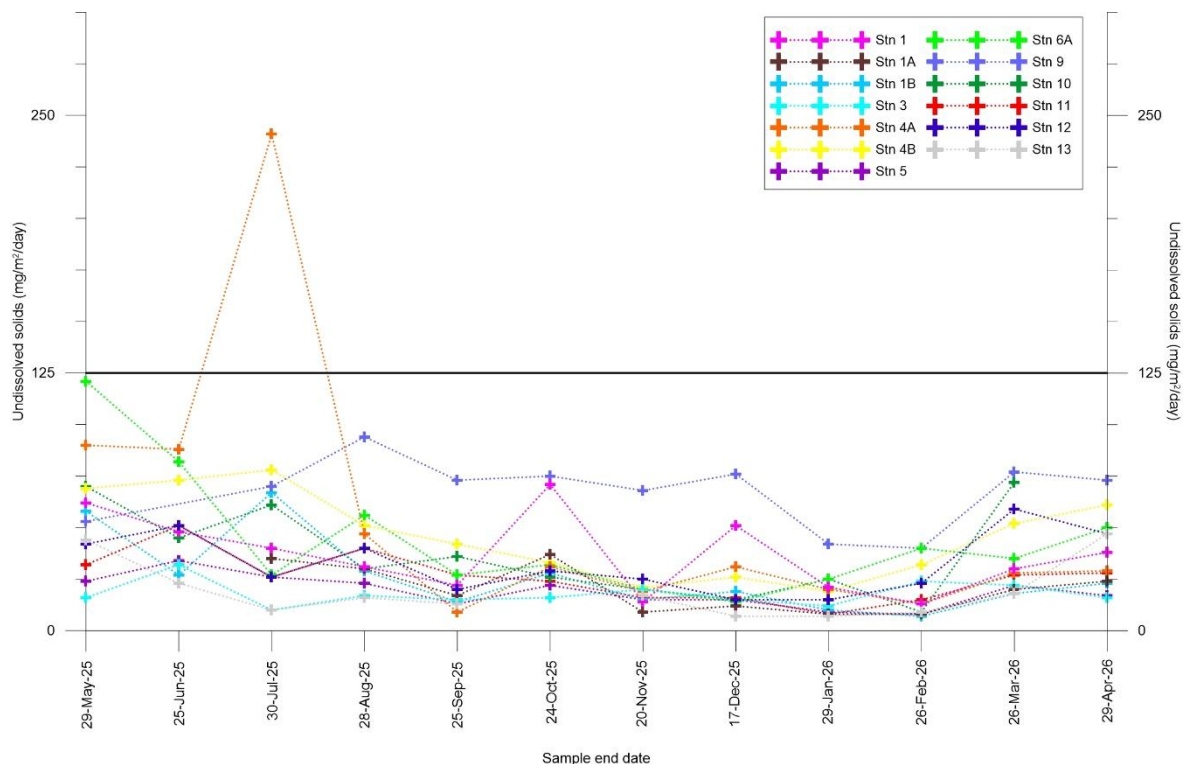


Figure 3.7: Dust deposition rates per sampling location over time (past 12 months)

3.2.4 Directional dust monitoring summary

The directional dust data for 26th March – 29th April 2026 are summarised in Table 3.3 and are presented graphically in Figure 3.8. As with deposited dust, the DMMP sets out a site-wide directional dust threshold. For directional dust soiling, 0.5 % Effective Area Coverage (EAC) per day is a trigger limit for investigation to identify the likely dust source/s, again taking account of the direction. Table 3.3 and Figure 3.8 show that during 26th March – 29th April 2026, all stations recorded Very Low to Low dust flux from all directions except for Stn 9, which recorded a Moderate level from the southwest.

No dust data was available for Stn 10 during this monitoring period for the reason stated above in Section 3.2.3.

Table 3.3: Summary of directional dust soiling, 26th March – 29th April 2026.

Directional dust soiling (%EAC/day) by direction (°)										
This month report start date:		26-Mar-26								
This month report end date:		29-Apr-26								
Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Reported value	0	0	0	0.1	0.1	0.1	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Reported value	0	0	0.1	0.1	0	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Reported value	0	0.1	0.1	0.1	0.1	0.1	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Reported value	0	0.1	0.3	0.1	0	0.3	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Reported value	0.1	0.1	0.1	0.1	0	0.4	0.3	0.2
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Moderate	Low	Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Reported value	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
		Trigger: $\geq 0.5^a$	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
		Magnitude ^b	No data	No data	No data	No data	No data	No data	No data	No data
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Reported value	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Very Low	Very Low
Quorn House Park	Stn 13	Reported value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^c Direction/s not determined for daily EAC below 0.1%/day (very low soiling)

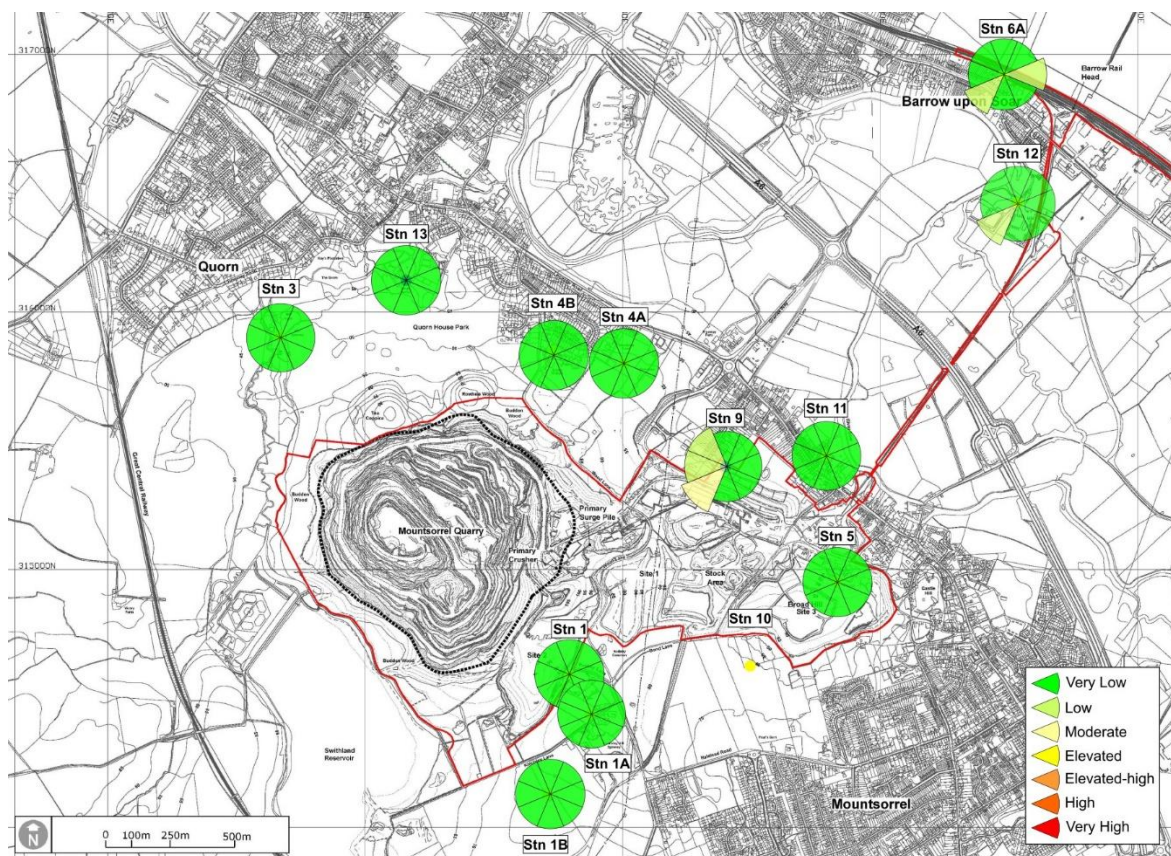


Figure 3.8: Directional dust soiling rose diagrams, 26th March – 29th April 2026.

Table 3.4 shows that the average directional soiling rates have been at Very Low to Low levels at all monitoring locations, for all directions, over the past year. Low average direction dust flux level was recorded from the east and southwest at Stn 6A, and from the southwest to west at Stn 9.

Table 3.4: Running average directional dust soiling (past 12 months)

Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Average value	0.1	0.1	0.1	0	0	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Average value	0	0	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Average value	0	0	0	0.1	0	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Average value	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Average value	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Average value	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Average value	0.1	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn House Park	Stn 13	Average value	0	0	0.1	0.1	0	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^c Direction/s not determined for daily EAC below 0.1%/day (very low soiling)

4 Complaints

During April 2026, one complaint was received by the quarry. This complaint was dealt with in accordance with the procedure outlined in the latest Dust Management and Monitoring Plan (DMMP).

Appendix A: Off-site PM₁₀ monitoring (CBC and AURN)

The daily average PM₁₀ concentrations recorded by the CBC Zephyr² are presented below in Figure A.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre³.

For the monitoring period 26th March – 29th April 2026, both the CBC Zephyr and the Loughborough AURN station achieved a 100% data capture.

For the available data, the average daily PM₁₀ concentration for this monitoring period at the CBC Zephyr (Hawcliffe Road) was 7.8 µg/m³. At the Loughborough AURN the average daily PM₁₀ concentration was 10.0 µg/m³ for the monitoring period.

During the monitoring period, the average daily PM₁₀ concentration recorded by the onsite monitor at Quorn House was slightly higher than those measured at the CBC Zephyr site at 8.1 µg/m³, but slightly lower than the average concentration at the Loughborough AURN site. At Hawcliffe Road, the average concentration was 16.6 µg/m³, which is greater than the readings recorded at both the CBC Zephyr and Loughborough AURN site.

Between 26th March – 29th April 2026 there were no recorded instances where the daily average PM₁₀ concentrations exceeded 50 µg/m³ at the CBC Zephyr or at the Leicester AURN.

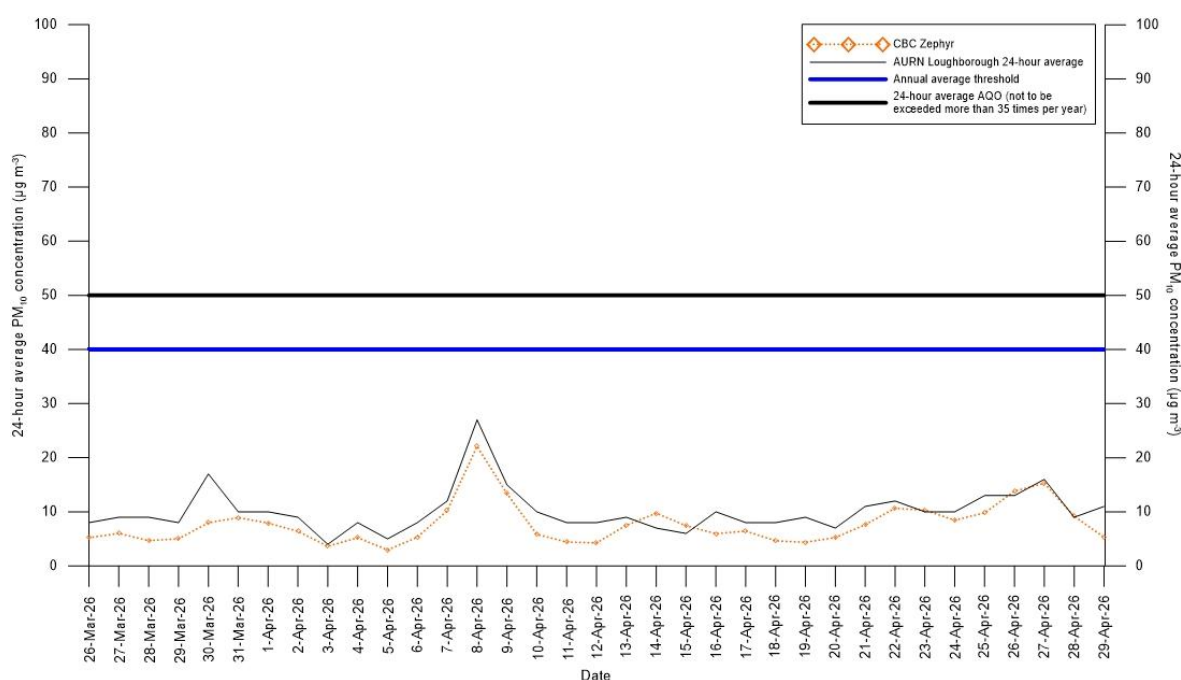


Figure A.1: Daily average PM₁₀ concentration, CBC Zephyr and Loughborough Thorpe Acre AURN, 26th March – 29th April 2026.

² <https://portal.earthsense.co.uk/LeicestershireCCPublic/analysis>

³ <http://uk-air.defra.gov.uk/networks/network-info?view=aurn>

Appendix B: Off-site PM_{2.5} monitoring (CBC and AURN)

The daily average PM_{2.5} concentrations recorded by the CBC Zephyr are presented below in Figure B.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre.

For the monitoring period 26th March – 29th April 2026, both the CBC Zephyr and Loughborough AURN stations achieved 100 % data capture. For the available data the average daily PM_{2.5} concentration for this monitoring period at the CBC Zephyr was 5.1 µg/m³. At the Loughborough AURN the average daily PM_{2.5} concentration was 6.0 µg/m³ for the monitoring period.

Onsite PM_{2.5} concentrations were higher at Hawcliffe Road (9.8 µg/m³) and very similar at Quorn House (6.5 µg/m³) compared to off-site averages of 5.1 µg/m³ at CBC Zephyr and 6.5 µg/m³ at Leicester AURN, likely reflecting the differences in locations.

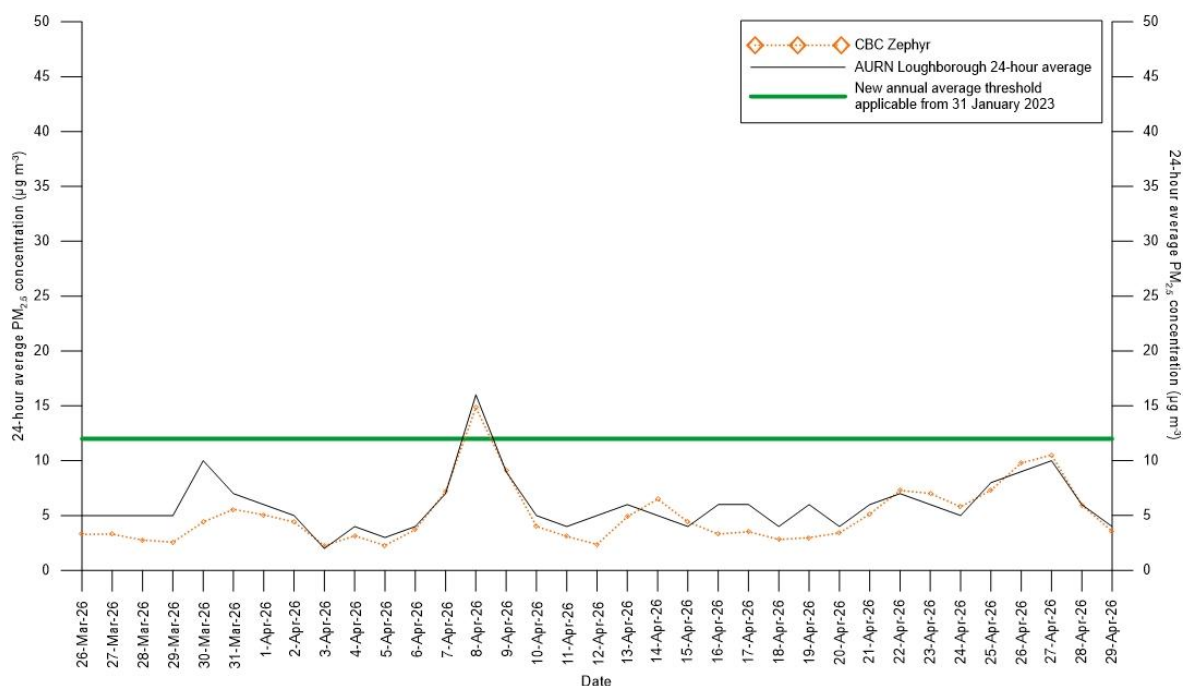


Figure B.1: Daily average PM_{2.5} concentrations, CBC Zephyr and Loughborough Thorpe Acre AURN, 26th March – 29th April 2026.

Appendix C: Off-site PM₁₀ and PM_{2.5} Annual Summary

Table C.1: Average PM₁₀ concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 29th March 2026.

	AURN Loughborough Thorpe Acre *	CBC Zephyr
Valid data capture	96 %	89 %
Period average PM ₁₀ concentration	10.5 µg/m ³	13.9 µg/m ³
Percentage of annual AQO (40 µg/m ³)	26.4 %	34.8 %
No. exceedances of daily AQO (50 µg/m ³ , not to be exceeded more than 35 times per calendar year)	0	1
* Values calculated using partial-year data (13 th May 2025 to 29 th April 2026).		

Table C.2: Average PM_{2.5} concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 29th April 2026.

	AURN Loughborough Thorpe Acre *	CBC Zephyr
Valid data capture	96 %	89 %
Period average PM _{2.5} concentration	6.7 µg/m ³	9.8 µg/m ³
Percentage of interim target (12 µg/m ³ as an annual average)	56 %	81 %
* Values calculated using partial-year data (13 th May 2025 to 29 th April 2026).		



Dust, Particulate Matter and Weather Monitoring Report: May 2026

Mountsorrel Quarry

July, 2026

Tarmac



Document Control Sheet

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This report may include data obtained from trusted third-party consultants/laboratories that have been supplied to us in good faith. Whilst we do everything we can to ensure the quality of all the data we use, we cannot be held responsible for the accuracy or integrity of third-party data.

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1 Introduction

Mountsorrel Quarry has a comprehensive Dust Management and Monitoring Plan (DMMP). The DMMP was developed in 2011 and is subject to regular review and revision, in consultation between Tarmac and the local regulators (Leicestershire County Council (LCC) and Charnwood Borough Council (CBC)).

The DMMP is enacted through the quarry Site Improvement Plan (SIP). The SIP sets out a programme of actions to reduce the environmental impact of specific areas of the site operation, and is updated regularly by quarry management, with support from DustScanAQ through regular site visits and quarterly reviews with LCC and CBC.

Section 7.5 of the DMMP requires that a monthly summary and review of dust and particulate matter monitoring is prepared and circulated with LCC, CBC and the Environment Agency.

This report details the results of dust, particulate matter and weather monitoring around Mountsorrel Quarry during the period 29th April – 28th May 2026.

1.1 Report scope

The intention of this report is to summarise dust and particulate matter monitoring results for the given period and compare them against site-specific alert limits and thresholds. This report also details the results of any investigation carried out into elevated dust or particulate matter levels, as prompted by an exceedance of alert limits or thresholds.

1.2 Dust definitions

‘Dust’ is generally regarded as particulate matter up to 75 µm (micron) diameter and can be considered in two categories. Fine dust, essentially particles up to 10 µm, is commonly referred to as PM₁₀ and is measured to agreed standards and forms part of the national Air Quality Objectives (AQO). The AQO for PM₁₀ is currently 50 µg/m³ for the 24-hour mean, not to be exceeded 35 times per year and 40 µg/m³ for the annual mean. Particles up to 2.5 µm in diameter are referred to as PM_{2.5}. The interim target for PM_{2.5} is currently 10 µg/m³ for the annual mean (to be achieved by 2030), whilst the legally binding annual mean concentration target for PM_{2.5} is 10 µg/m³ (to be achieved by 2040) as set out in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023¹. This interim target supersedes the previous interim target of 12 µg/m³ by 2028, reflecting increased government ambition set out in the Air Quality Environment Act Target Delivery Plan² and the Environmental Improvement Plan 2025³.

¹ The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96).

² Defra (2025). *Air Quality Environment Act Target Delivery Plan*.

³ Defra (2025). *Environmental Improvement Plan 2025*. Department for Environment, Food and Rural Affairs, London.

It may be noted that the above Regulations relate to average particle concentrations in Local Authority districts thus do not apply to any specific industrial or other operation, such as Mountsorrel Quarry, and are included for reference. Coarser dust (essentially particles greater than 10 μm) is generally regarded as 'nuisance dust' and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance.

2 Sampler locations

As shown in Figure 2.1 and Table 2.1, dust, particulate matter and weather conditions are measured at a number of locations around site and the surrounding area:

- Directional and depositional dust: currently monitored at 13 locations;
- Particulate matter: currently monitored at two locations;
- Weather conditions: currently monitored at one location.

The majority of the dust samplers around Mountsorrel Quarry comprise the ‘Frisbee-type’ deposition gauge combined with an adhesive ‘sticky pad’ directional gauge. These samplers are used to monitor ‘nuisance’ dust and samples from these instruments are collected on a monthly basis.

For particulate matter, Turnkey Osiris samplers are located at Stn 9 (Hawcliffe Road) and at Stn 13 (Quorn House). These recognised and certificated ‘indicative’ real-time devices are connected to their own wind vane and anemometer and provide near-instantaneous directional PM_{10} , $PM_{2.5}$ and PM_1 data directly to the quarry management team.

A weather station is located at the site offices off Wood Lane and collects a range of weather parameters over fifteen-minute intervals. Data from the weather station are available to the quarry management by means of a dedicated modem connection to the internet.

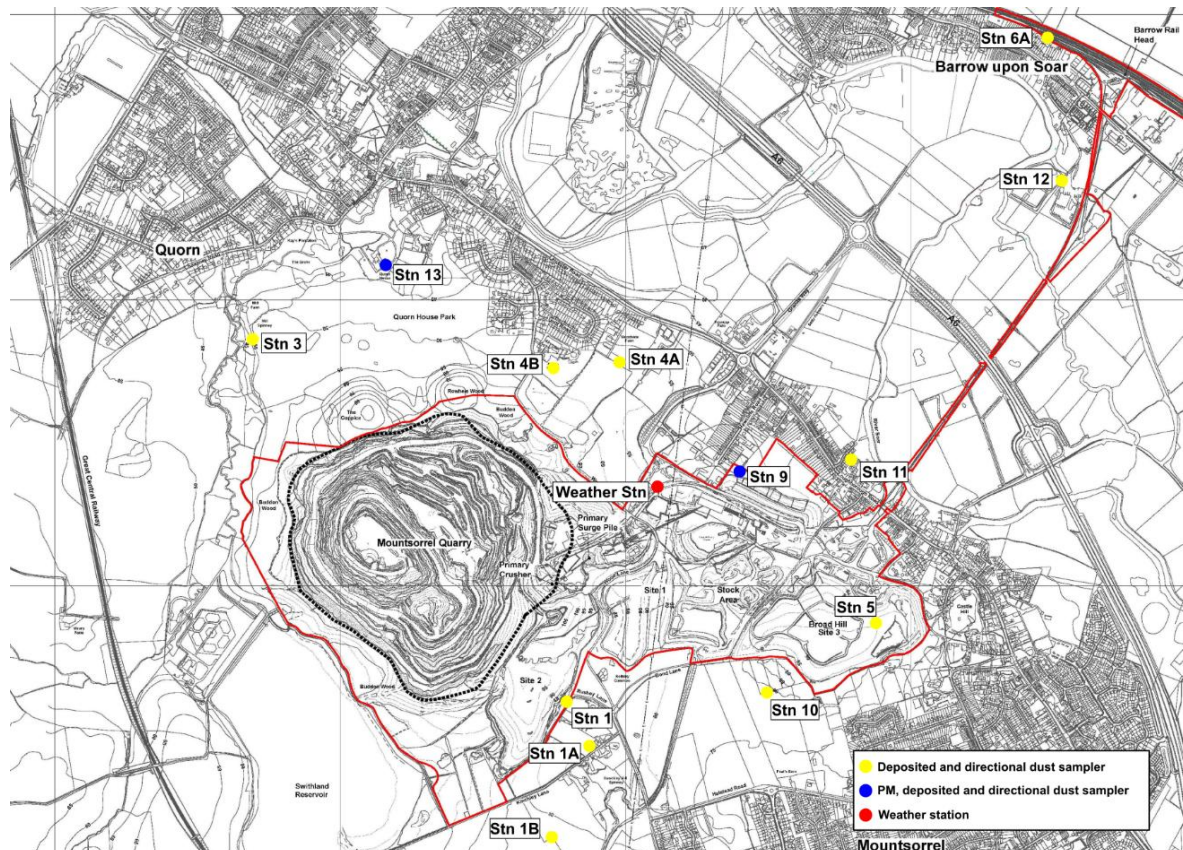


Figure 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Table 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Sampler reference	Easting	Northing	Locality monitored
Stn 1	456787	314586	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1A	456882	314449	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1B	456745	314112	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 3	455685	315844	Mill Farm; Quorn House
Stn 4A	456966	315787	Woodside Farm; Leicester Road
Stn 4B	456732	315767	Quorn Grange, Unitt Road, Northage Close, Quorn Park
Stn 5	457872	314875	Bond Lane; Crown Lane
Stn 6A	458655	316785	Sileby Road; Huston Close; Sileby Road (commercial)
Stn 9 (inc. PM)	457374	315398	Hawcliffe Road
Stn 10	457509	314627	Glebe Close; Halstead Road (south); Halstead Road (north)
Stn 11	457835	315504	Loughborough Road; River Soar (marina / caravan park)
Stn 12	458551	316457	Meadow Farm Marina and Caravan Park
Stn 13 (incl. PM)	456154	316087	Northage Close, Meeting Street
Weather Station	457126	315376	Wood Lane Site Offices

Charnwood Borough Council (CBC) is responsible for the monitoring of air quality within the borough and prepares Air Quality Annual Status Reports (ASRs) for submission to Defra. It operates an Earthsense Zephyr air quality monitor which is located within the Leicestershire County Council (LCC) depot at the southern end of Hawcliffe Road, in close proximity to the Osiris device at Stn 9. This device measures a number of pollutants including PM₁₀ and PM_{2.5}. The purpose of this monitoring is for CBC to compare measured concentrations against the relevant AQOs for these pollutants.

For additional context, the latest PM₁₀ and PM_{2.5} monitoring data from CBC are summarised in Appendix A and Appendix B, whilst a summary of the latest 12 months of data are provided in Appendix C for reference.

2.1 Alert thresholds and response procedures

To help the site reduce its impact on the surrounding area, a number of alert thresholds have been calculated, as outlined in Table 2.2.

Table 2.2: Alert thresholds

Pollutant	Threshold	Averaging period	Applies to
PM ₁₀	125 µg/m ³	15 minutes	Stn 9 (Hawcliffe Road), Stn 13 (Quorn House)
Deposited dust	125 mg/m ² /day	1 month	All deposited dust monitoring locations

For particulate matter (PM₁₀) an alert threshold of 125 µg/m³ for the 15-minute average has been in use for several years as a trigger limit for investigation to identify potential on-site issues.

Analysis of data from the site has demonstrated that PM₁₀ provides a stronger 'site signal' than PM_{2.5}. The purpose of alerts is to provide site managers with information regarding elevated PM₁₀ concentrations, allowing them to investigate and make operational changes if necessary. An alert threshold has therefore not been set for PM_{2.5} to prevent duplication.

PM₁₀ and PM_{2.5} concentrations recorded by CBC at the southern end of Hawcliffe Road and by Defra through the Automatic Urban and Rural Network (AURN) at Loughborough Thorpe Acre are presented in Appendix A and Appendix B respectively. Data from both locations have been compared against relevant Air Quality Objectives (AQOs) for PM₁₀ and PM_{2.5}.

For deposited dust, the DMMP sets out a site-wide deposited dust threshold of 125 mg/m²/day 'undissolved solids' as a trigger limit for investigation to identify the potential dust source/s, taking account of the directional data.

3 Results

3.1 Weather monitoring

Weather conditions can have a significant effect on the potential for dust propagation from a mineral site. Of particular importance are wind speeds, wind direction, and precipitation. Dust can be carried from a source towards receptors (such as nearby homes and other businesses) according to the strength and direction of wind. Precipitation is recognised to suppress dust and 0.2 mm antecedent rainfall is considered sufficient to suppress windblown dust for a number of hours.

The key weather data which might affect dust propagation (wind speed, wind direction, total daily precipitation and average daily temperature) for this reporting period are summarised in Figure 3.1 and Figure 3.2.

Much of early to mid-May was characterised by cooler than normal temperatures, whereas in late May temperatures rose sharply before a maximum daily temperature of 24.3 °C was recorded on 25th May. The minimum average daily temperature (7.9 °C) was recorded on 13th May.

Rainfall was variable through the monitoring period. Extended dry periods in early and late May were interrupted by significant amounts of rainfall between 11th and 19th May.

As seen in Figure 3.2, wind speeds were predominantly light to moderate (>0.5 – 6 m/s) throughout this period. Wind directions were variable, with similar proportions being recorded from the south, west and north. This may have resulted in an increased potential for dust propagation towards the north, east and south during 29th April – 28th May 2026.

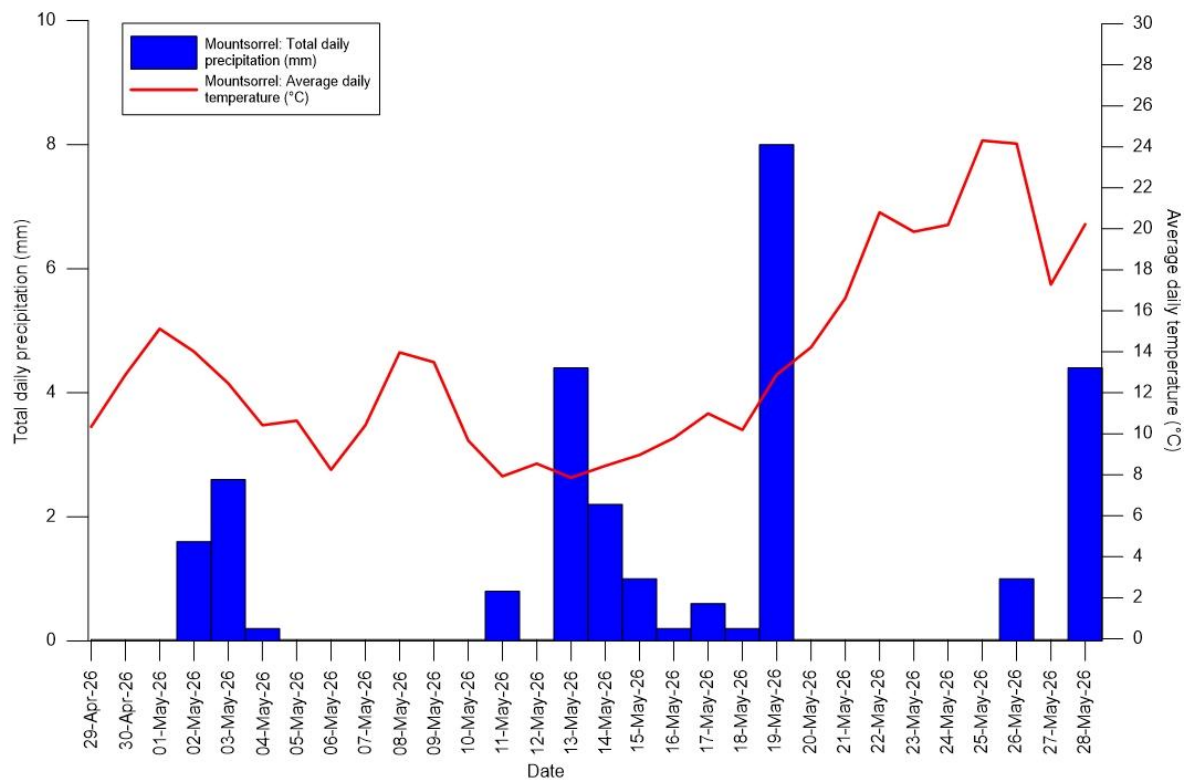


Figure 3.1: Total daily precipitation and average daily temperature, Mountsorrel Quarry, 29th April – 28th May 2026

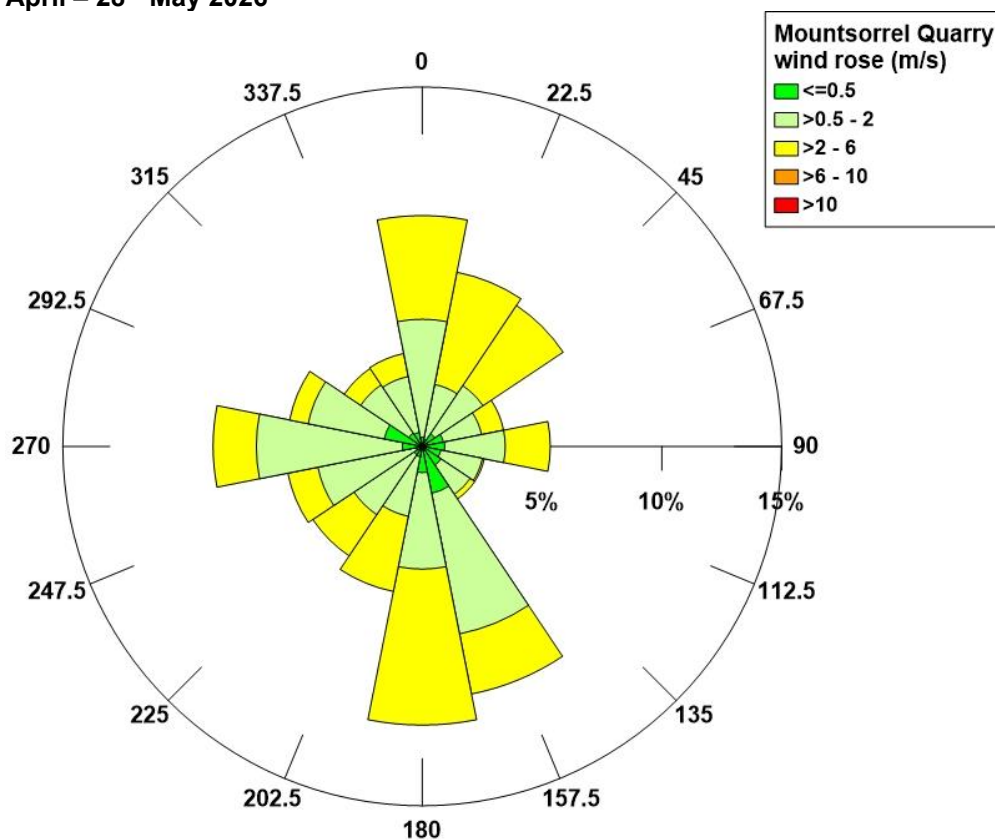


Figure 3.2: Wind rose, Mountsorrel Quarry, 29th April – 28th May 2026

3.2 Particulate matter

3.2.1 PM₁₀

The available 15-minute data from the period of review are presented for both monitoring locations in Figure 3.3 and Figure 3.4 respectively. The red line denotes the site trigger level (125 $\mu\text{g}/\text{m}^3$ over the 15-minute average), whilst the dashed black line denotes the average concentration recorded over this period.

Additional PM₁₀ monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix A.

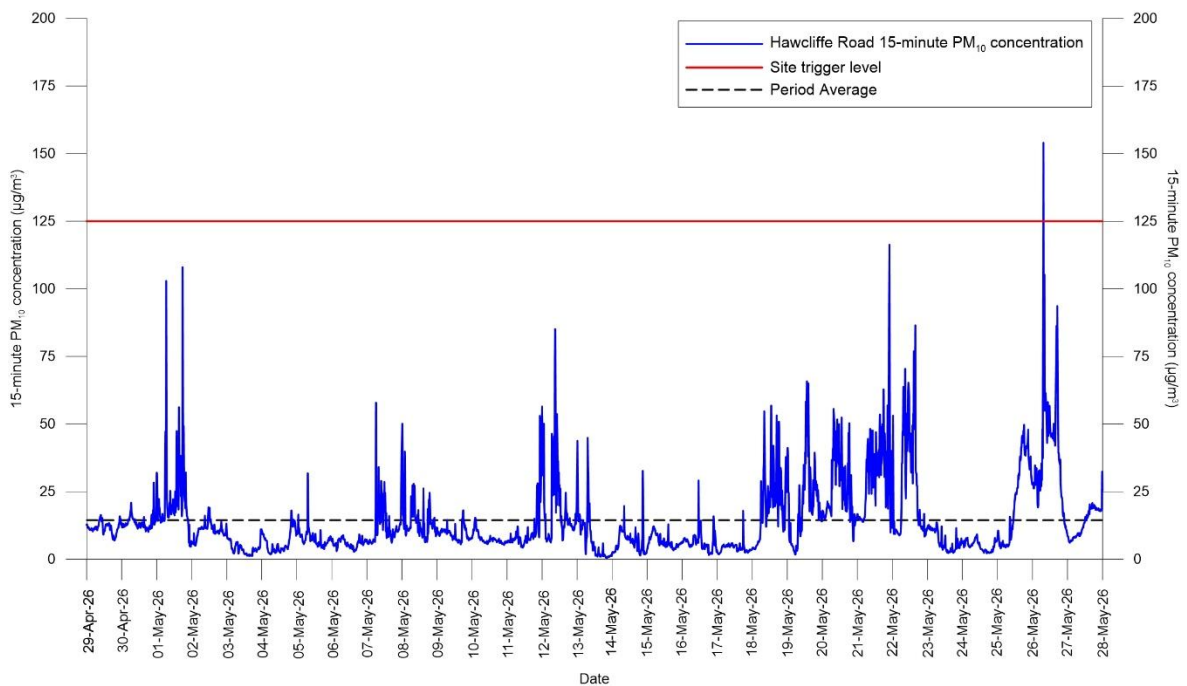


Figure 3.3: 15-minute mean PM₁₀ concentration, Hawcliffe Road, 29th April – 28th May 2026

Figure 3.3 indicates that the period average concentration at the Hawcliffe Road sampler for this period was 14.5 $\mu\text{g}/\text{m}^3$, with the alert threshold being exceeded on one day (26th May) during this monitoring period. Details of the exceedance are provided in Table 3.1.

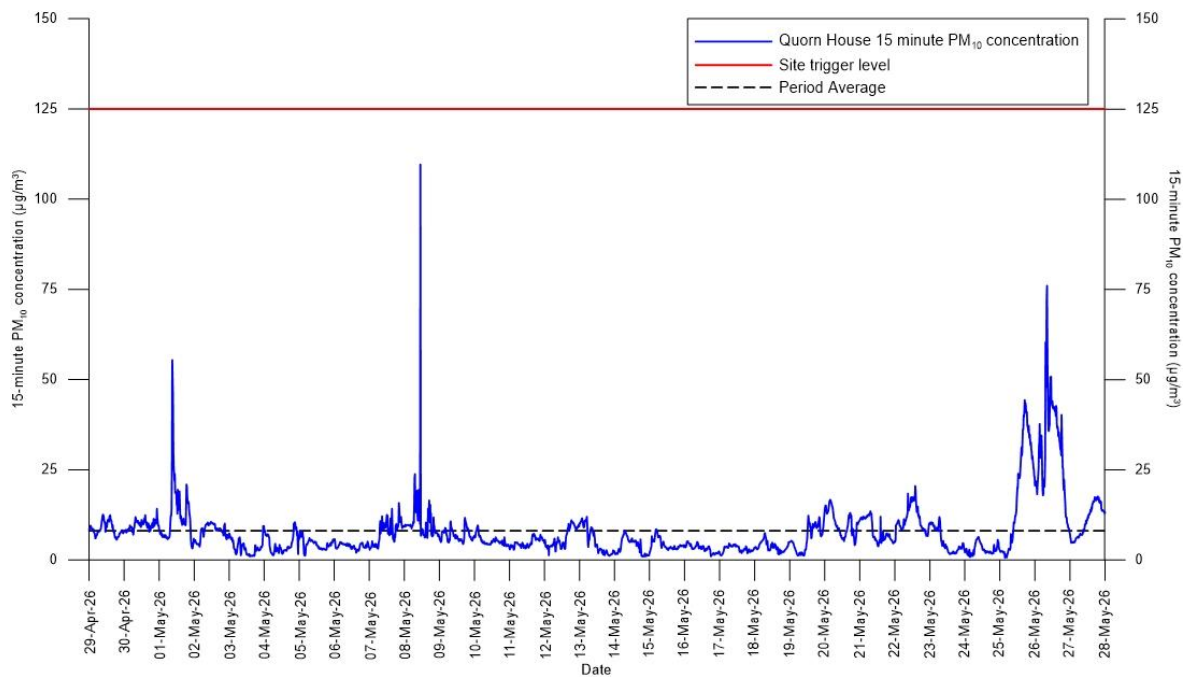


Figure 3.4: 15-minute mean PM₁₀ concentration, Quorn House, 29th April – 28th May 2026.

At Quorn House there were no exceedances of the PM₁₀ site trigger, and the period average was 8.1 µg/m³.

Table 3.1: Email alert responses, between 29th April – 28th May 2026 (using the trigger threshold, 125 µg/m³ for the 15-minute average)

Date of alert	Monitor	Details	Possible cause and investigation
26/05/2026	Hawcliffe Road	Exceedance from the SSW in the morning	No on-site issues identified, and all dust suppression working. Alert conditions may have been reached due to extended warm dry period.

3.2.2 PM_{2.5}

The results of PM_{2.5} monitoring at Hawcliffe Road and Quorn House are presented in Figure 3.5 and Figure 3.6. The dashed black line denotes the average concentration recorded over this period.

Additional PM_{2.5} monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix B.

At Hawcliffe Road, the period average concentration was 7.5 µg/m³, whilst at Quorn House, the period average was 5.6 µg/m³. In general, PM_{2.5} concentrations recorded at Hawcliffe Road experienced greater fluctuations that at Quorn House (as shown by the increased frequency of spikes in the dataset); this is most likely due to its location on the site boundary and in a more built-up environment when compared to the rural location of Quorn House.

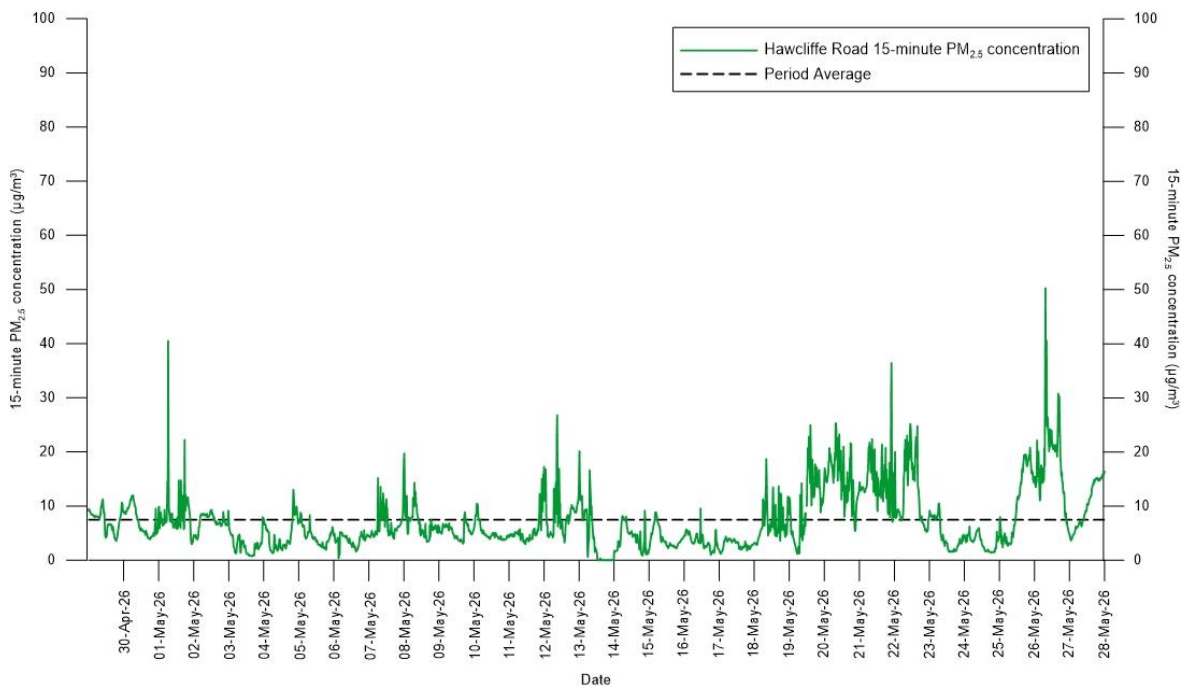


Figure 3.5: 15-minute mean PM_{2.5} concentration, Hawcliffe Road, 29th April – 28th May 2026.

For this period, 52 % of PM₁₀ recorded at Hawcliffe Road comprised PM_{2.5}, whilst it made up 69 % at Quorn House.

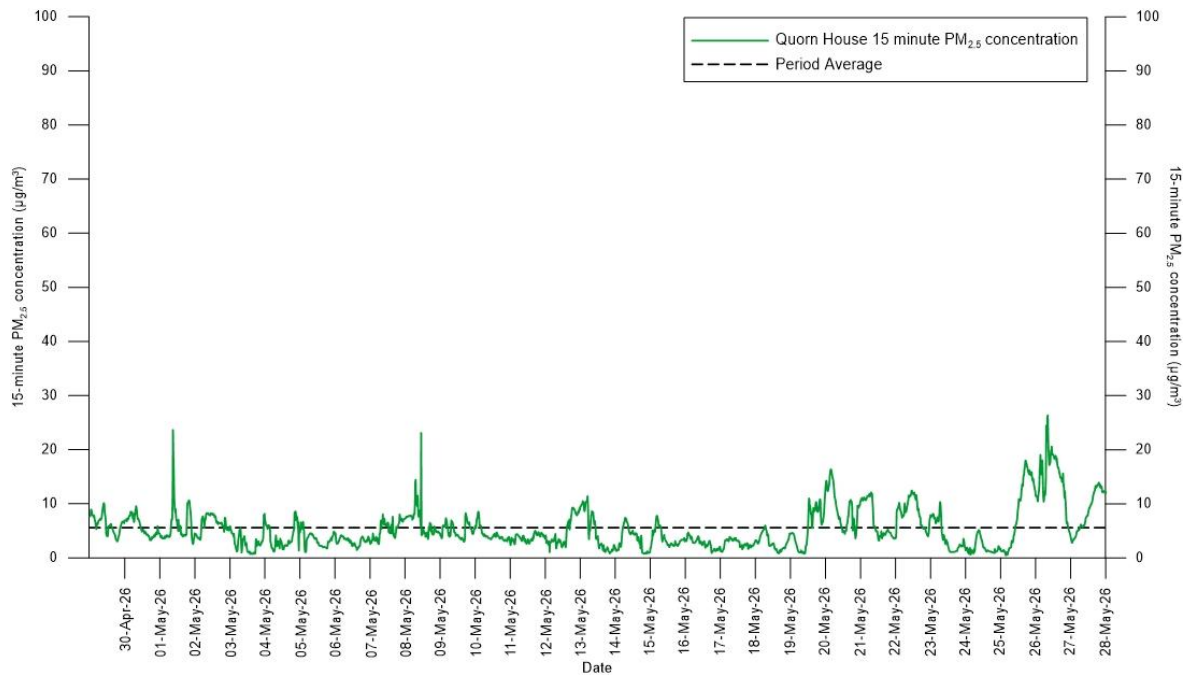


Figure 3.6: 15-minute mean PM_{2.5} concentration, Quorn House, 29th April – 28th May 2026.

3.2.3 Deposited dust monitoring summary

The deposited dust data for 29th April – 28th May 2026 are summarised in Table 3.2. As outlined above, there is a site-wide threshold for investigation to identify the potential dust source/s, taking account of the directional data. Table 3.2 shows that, for the available data, deposited dust levels during 29th April – 28th May 2026 were within the site-specific threshold for all but one station. At Stn 6A, the dust deposition rate reached 224 mg/m²/day. From conversations with the Railhead Manager, it is understood that some construction activities (mainly groundworks and concrete works) were ongoing in the northwestern corner of Railhead during May. This involved plant and machinery that would otherwise not be operating at this location. The warm, dry, gusty weather conditions would have increased the potential for these activities to generate airborne dust.

The Railhead manager is in conversation with a dust mitigation company to carry out a survey of the site in order to add additional suppression in key areas to prevent this from happening in the future. Additionally, the Manager has confirmed that extra water will be used to wet down these areas when work is ongoing.

Table 3.2: Summary of deposited dust (undissolved solids), 29th April – 28th May 2026

Undissolved solids (mg/m ² /day)				
This month report start date:		29-Apr-26		
This month report end date:		28-May-26		
Receptor location	Nearest / appropriate dust monitoring point	Reported value	Trigger: $\geq 125^a$	Magnitude ^b
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	33	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	27	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	25	No	Very Low
Mill Farm; Quorn House	Stn 3	48	No	Very Low
Woodside Farm, Leicester Road	Stn 4A	33	No	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	60	No	Low
Bond Lane; Crown Lane	Stn 5	19	No	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	224	Yes	Very High
Hawcliffe Road	Stn 9	51	No	Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	31	No	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	49	No	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	36	No	Very Low
Quorn House Park	Stn 13	28	No	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of mass deposition rate assessed against typical rate for semi-rural areas (30 - 80 mg/m²/day)

Regarding dust deposition over time, the rates across the sampling area have varied considerably. Trends in dust deposition rates (as undissolved solids) for the previous 12 months, together with the site-wide dust threshold are illustrated in Figure 3.7.

In general, as would be expected, dust deposition rates are typically lower in winter months than in summer months. This trend is clearly seen for most monitoring points in Figure 3.7, with some exceptions. Dust deposition rates have been consistently below the ‘trigger limit’ at all sampling locations, with the exception of Stn 4A and Stn 6A, which have both exceeded the threshold on one occasion over the past 12 months. Details of the associated investigation can be found in the corresponding compliance reports.

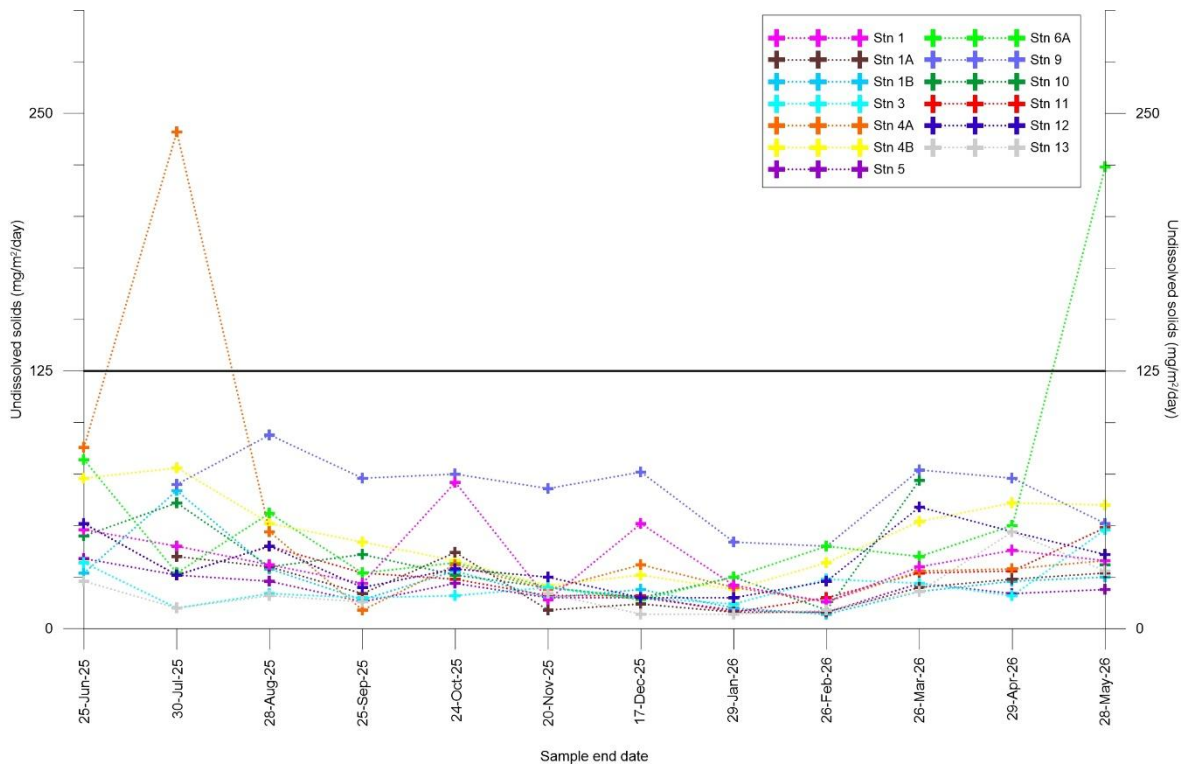


Figure 3.7: Dust deposition rates per sampling location over time (past 12 months)

3.2.4 Directional dust monitoring summary

The directional dust data for 29th April – 28th May 2026 are summarised in Table 3.3 and are presented graphically in Figure 3.8. As with deposited dust, the DMMP sets out a site-wide directional dust threshold. For directional dust soiling, 0.5 % Effective Area Coverage (EAC) per day is a trigger limit for investigation to identify the likely dust source/s, again taking account of the direction. Table 3.3 and Figure 3.8 show that during 29th April – 28th May 2026, all stations recorded Very Low to Low dust flux from all directions.

Table 3.3: Summary of directional dust soiling, 29th April – 28th May 2026

Directional dust soiling (%EAC/day) by direction (°)										
This month report start date:		29-Apr-26								
This month report end date:		28-May-26								
Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Reported value	0.1	0.1	0.1	0	0	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Reported value	0.1	0.1	0	0.2	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Reported value	0	0.1	0.1	0	0	0	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Reported value	0	0	0	0.1	0.1	0.1	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Reported value	0	0.1	0.1	0.1	0.1	0.1	0.1	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Reported value	0.1	0.2	0.3	0.1	0.1	0.2	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Low	Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Reported value	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Reported value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn House Park	Stn 13	Reported value	0.1	0	0	0	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^c Direction/s not determined for daily EAC below 0.1%/day (very low soiling)

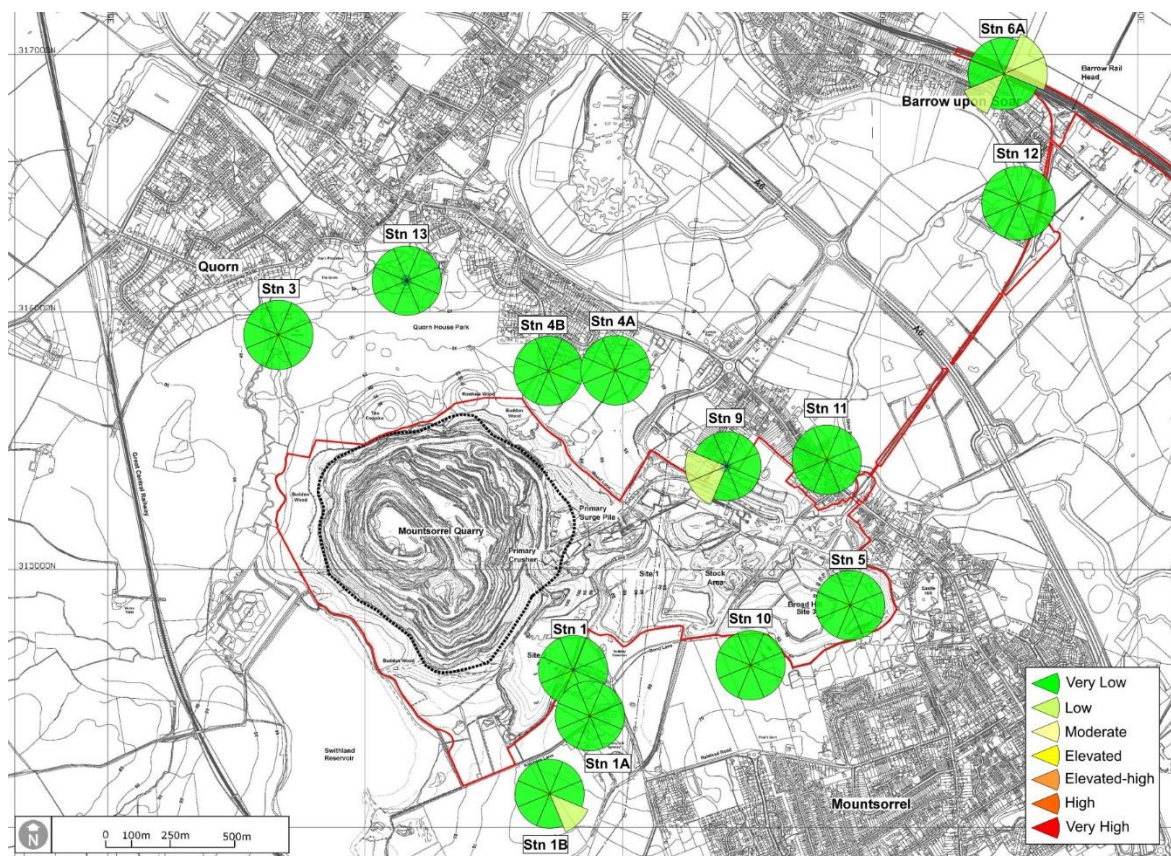


Figure 3.8: Directional dust soiling rose diagrams, 29th April – 28th May 2026

Table 3.4 shows that the average directional soiling rates have been at Very Low to Low levels at all monitoring locations, for all directions, over the past year. Low average direction dust flux level was recorded from the east and southwest at Stn 6A, and from the southwest to west at Stn 9.

Table 3.4: Running average directional dust soiling (past 12 months)

Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Average value	0.1	0.1	0.1	0	0	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Average value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Average value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Average value	0	0.1	0.1	0.1	0.1	0.1	0.1	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Average value	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Average value	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Average value	0.1	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn House Park	Stn 13	Average value	0	0	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^aTrigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^bMagnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^cDirection/s not determined for daily EAC below 0.1%/day (very low soiling)

4 Complaints

During May 2026, two complaints were received by the quarry. This complaint was dealt with in accordance with the procedure outlined in the latest Dust Management and Monitoring Plan (DMMP).

Appendix A: Off-site PM₁₀ monitoring (CBC and AURN)

The daily average PM₁₀ concentrations recorded by the CBC Zephyr⁴ are presented below in Figure A.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre⁵.

For the monitoring period 29th April – 28th May 2026, both the CBC Zephyr and the Loughborough AURN station achieved a 100% data capture.

For the available data, the average daily PM₁₀ concentration for this monitoring period at the CBC Zephyr (Hawcliffe Road) was 9.8 µg/m³. At the Loughborough AURN the average daily PM₁₀ concentration was 11.5 µg/m³ for the monitoring period.

During the monitoring period, the average daily PM₁₀ concentration recorded by the onsite monitor at Quorn House was slightly lower than those measured at the CBC Zephyr and by the Loughborough AURN monitor. At Hawcliffe Road, the average concentration was 14.5 µg/m³, which is greater than the readings recorded at both the CBC Zephyr and Loughborough AURN site.

Between 29th April – 28th May 2026 there were no recorded instances where the daily average PM₁₀ concentrations exceeded 50 µg/m³ at the CBC Zephyr or at the Loughborough AURN.

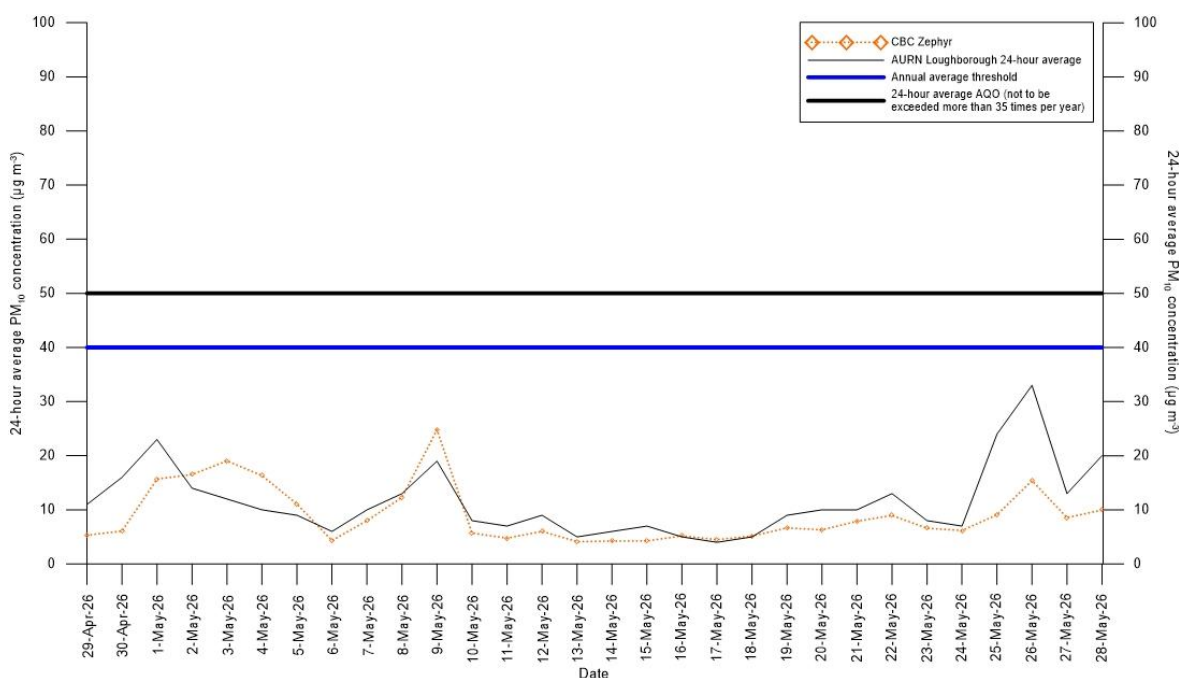


Figure A.1: Daily average PM₁₀ concentration, CBC Zephyr and Loughborough Thorpe Acre AURN, 29th April – 28th May 2026

⁴ <https://portal.earthsense.co.uk/LeicestershireCCPublic/analysis>

⁵ <http://uk-air.defra.gov.uk/networks/network-info?view=aurn>

Appendix B: Off-site PM_{2.5} monitoring (CBC and AURN)

The daily average PM_{2.5} concentrations recorded by the CBC Zephyr are presented below in Figure B.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre.

For the monitoring period 29th April – 28th May 2026, both the CBC Zephyr and Loughborough AURN stations achieved 100 % data capture. For the available data the average daily PM_{2.5} concentration for this monitoring period at the CBC Zephyr was 6.3 µg/m³. At the Loughborough AURN the average daily PM_{2.5} concentration was 6.6 µg/m³ for the monitoring period.

Onsite PM_{2.5} concentrations were higher at Hawcliffe Road (7.5 µg/m³) and very similar at Quorn House (5.6 µg/m³) compared to readings recorded by the CBC Zephyr and the AURN site in Loughborough Thorpe Acre.

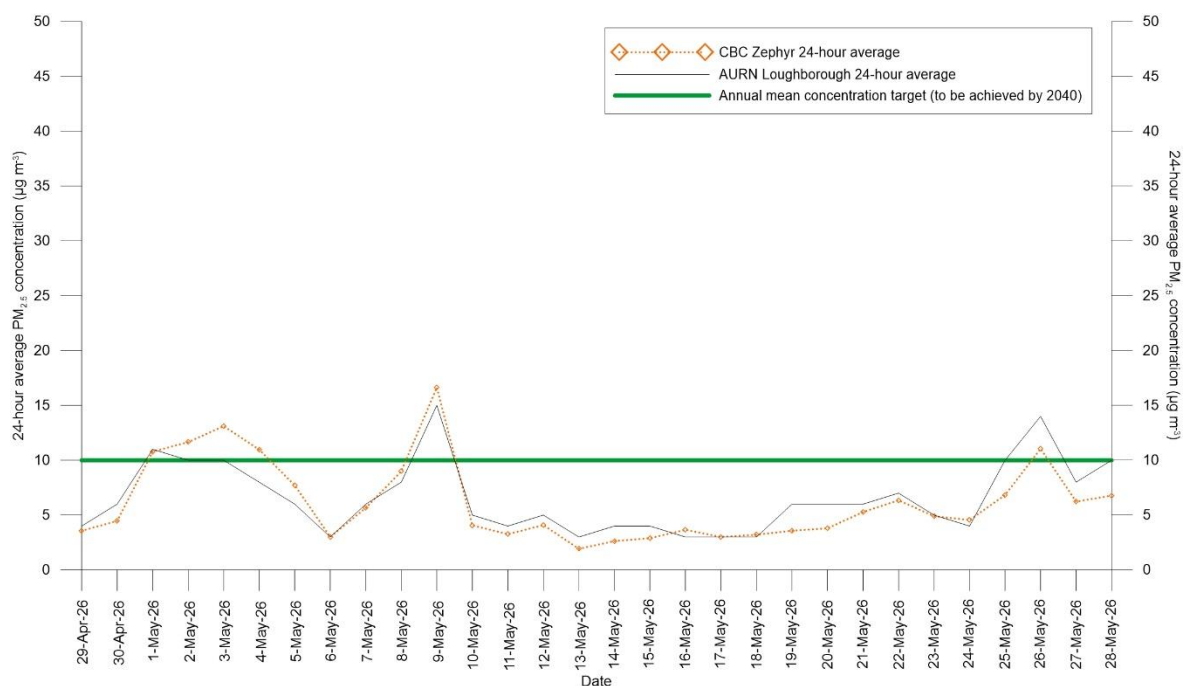


Figure B.1: Daily average PM_{2.5} concentrations, CBC Zephyr and Loughborough Thorpe Acre AURN, 29th April – 28th May 2026

Appendix C: Off-site PM₁₀ and PM_{2.5} Annual Summary

Table C.1: Average PM₁₀ concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 28th May 2026

	AURN Loughborough Thorpe Acre	CBC Zephyr
Valid data capture	100 %	89 %
Period average PM ₁₀ concentration	10.5 µg/m ³	10.8 µg/m ³
Percentage of annual AQO (40 µg/m ³)	26.3 %	27.0 %
No. exceedances of daily AQO (50 µg/m ³ , not to be exceeded more than 35 times per calendar year)	0	0

Table C.2: Average PM_{2.5} concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 28th May 2026

	AURN Loughborough Thorpe Acre	CBC Zephyr
Valid data capture	100 %	89 %
Period average PM _{2.5} concentration	6.7 µg/m ³	6.8 µg/m ³
Percentage of interim target (12 µg/m ³ as an annual average)	66.9 %	67.9 %



Dust, Particulate Matter and Weather Monitoring Report: June 2026

Mountsorrel Quarry

August, 2026

Tarmac



Document Control Sheet

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1 Introduction

Mountsorrel Quarry has a comprehensive Dust Management and Monitoring Plan (DMMP). The DMMP was developed in 2011 and is subject to regular review and revision, in consultation between Tarmac and the local regulators (Leicestershire County Council (LCC) and Charnwood Borough Council (CBC)).

The DMMP is enacted through the quarry Site Improvement Plan (SIP). The SIP sets out a programme of actions to reduce the environmental impact of specific areas of the site operation, and is updated regularly by quarry management, with support from DustScanAQ through regular site visits and quarterly reviews with LCC and CBC.

Section 7.5 of the DMMP requires that a monthly summary and review of dust and particulate matter monitoring is prepared and circulated with LCC, CBC and the Environment Agency.

This report details the results of dust, particulate matter and weather monitoring around Mountsorrel Quarry during the period 28th May – 30th June 2026.

1.1 Report scope

The intention of this report is to summarise dust and particulate matter monitoring results for the given period and compare them against site-specific alert limits and thresholds. This report also details the results of any investigation carried out into elevated dust or particulate matter levels, as prompted by an exceedance of alert limits or thresholds.

1.2 Dust definitions

‘Dust’ is generally regarded as particulate matter up to 75 µm (micron) diameter and can be considered in two categories. Fine dust, essentially particles up to 10 µm, is commonly referred to as PM₁₀ and is measured to agreed standards and forms part of the national Air Quality Objectives (AQO). The AQO for PM₁₀ is currently 50 µg/m³ for the 24-hour mean, not to be exceeded 35 times per year and 40 µg/m³ for the annual mean. Particles up to 2.5 µm in diameter are referred to as PM_{2.5}. The AQO for PM_{2.5} is currently 20 µg/m³ for the annual mean. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023¹ set out a Target Level for PM_{2.5} of 10 µg/m³ as an annual mean, to be achieved by 2040. This target supersedes the previous interim target of 12 µg/m³ by 2028, reflecting increased government ambition set out in the Air Quality Environment Act Target Delivery Plan² and the Environmental Improvement Plan 2025³.

¹ The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96).

² Defra (2025). *Air Quality Environment Act Target Delivery Plan*.

³ Defra (2025). *Environmental Improvement Plan 2025*. Department for Environment, Food and Rural Affairs, London.

It may be noted that the above Regulations relate to average particle concentrations in Local Authority districts thus do not apply to any specific industrial or other operation, such as Mountsorrel Quarry, and are included for reference. Coarser dust (essentially particles greater than 10 μm) is generally regarded as 'nuisance dust' and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance.

2 Sampler locations

As shown in Figure 2.1 and Table 2.1, dust, particulate matter and weather conditions are measured at a number of locations around site and the surrounding area:

- Directional and depositional dust: currently monitored at 13 locations;
- Particulate matter: currently monitored at two locations;
- Weather conditions: currently monitored at one location.

The majority of the dust samplers around Mountsorrel Quarry comprise the ‘Frisbee-type’ deposition gauge combined with an adhesive ‘sticky pad’ directional gauge. These samplers are used to monitor ‘nuisance’ dust and samples from these instruments are collected on a monthly basis.

For particulate matter, Turnkey Osiris samplers are located at Stn 9 (Hawcliffe Road) and at Stn 13 (Quorn House). These recognised and certificated ‘indicative’ real-time devices are connected to their own wind vane and anemometer and provide near-instantaneous directional PM_{10} , $PM_{2.5}$ and PM_1 data directly to the quarry management team.

A weather station is located at the site offices off Wood Lane and collects a range of weather parameters over fifteen-minute intervals. Data from the weather station are available to the quarry management by means of a dedicated modem connection to the internet.

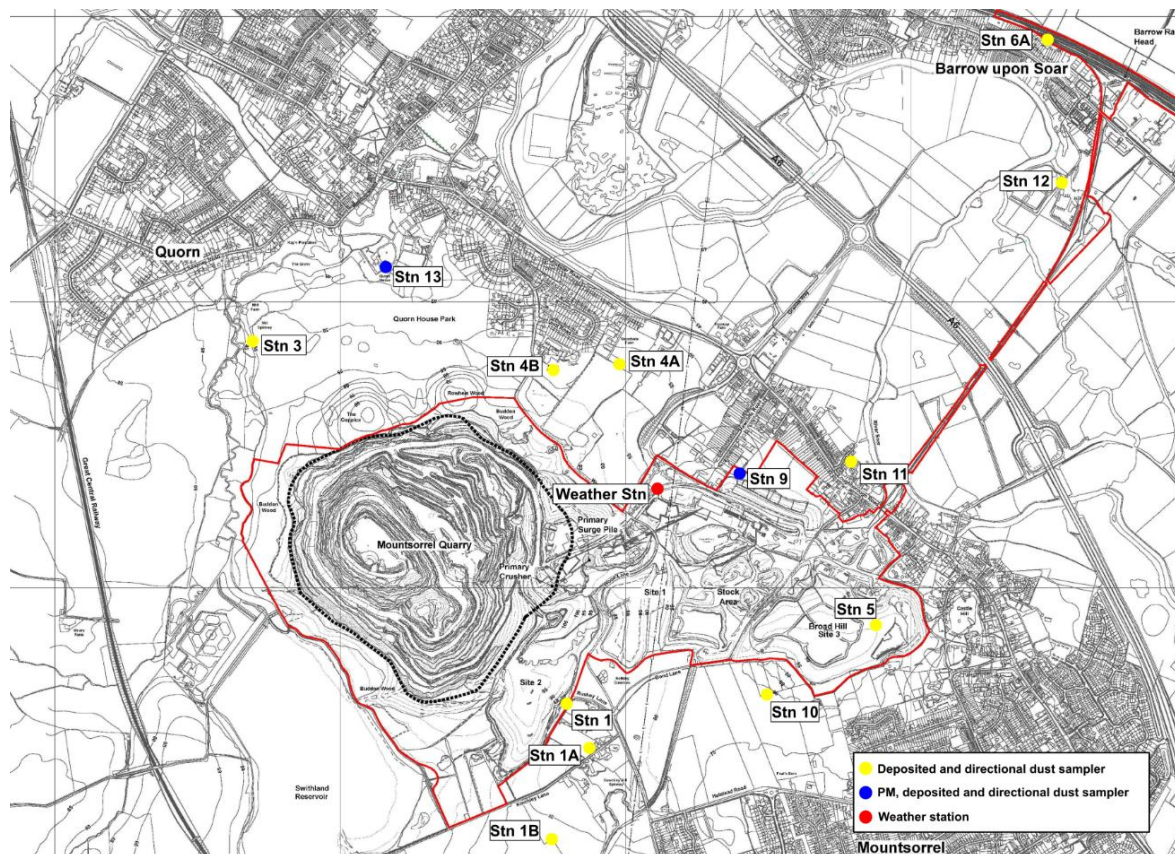


Figure 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Table 2.1: Particulate matter, dust and weather monitoring locations, Mountsorrel Quarry

Sampler reference	Easting	Northing	Locality monitored
Stn 1	456787	314586	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1A	456882	314449	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 1B	456745	314112	Swithland Lane; Rushey Lane; Kinchley Lane
Stn 3	455685	315844	Mill Farm; Quorn House
Stn 4A	456966	315787	Woodside Farm; Leicester Road
Stn 4B	456732	315767	Quorn Grange, Unitt Road, Northage Close, Quorn Park
Stn 5	457872	314875	Bond Lane; Crown Lane
Stn 6A	458655	316785	Sileby Road; Huston Close; Sileby Road (commercial)
Stn 9 (inc. PM)	457374	315398	Hawcliffe Road
Stn 10	457509	314627	Glebe Close; Halstead Road (south); Halstead Road (north)
Stn 11	457835	315504	Loughborough Road; River Soar (marina / caravan park)
Stn 12	458551	316457	Meadow Farm Marina and Caravan Park
Stn 13 (incl. PM)	456154	316087	Northage Close, Meeting Street
Weather Station	457126	315376	Wood Lane Site Offices

Charnwood Borough Council (CBC) is responsible for the monitoring of air quality within the borough and prepares Air Quality Annual Status Reports (ASRs) for submission to Defra. It operates an Earthsense Zephyr air quality monitor which is located within the Leicestershire County Council (LCC) depot at the southern end of Hawcliffe Road, in close proximity to the Osiris device at Stn 9. This device measures a number of pollutants including PM₁₀ and PM_{2.5}. The purpose of this monitoring is for CBC to compare measured concentrations against the relevant AQOs for these pollutants.

For additional context, the latest PM₁₀ and PM_{2.5} monitoring data from CBC are summarised in Appendix A and Appendix B, whilst a summary of the latest 12 months of data are provided in Appendix C for reference.

2.1 Alert thresholds and response procedures

To help the site reduce its impact on the surrounding area, a number of alert thresholds have been calculated, as outlined in Table 2.2.

Table 2.2: Alert thresholds

Pollutant	Threshold	Averaging period	Applies to
PM ₁₀	125 µg/m ³	15 minutes	Stn 9 (Hawcliffe Road), Stn 13 (Quorn House)
Deposited dust	125 mg/m ² /day	1 month	All deposited dust monitoring locations

For particulate matter (PM₁₀) an alert threshold of 125 µg/m³ for the 15-minute average has been in use for several years as a trigger limit for investigation to identify potential on-site issues.

Analysis of data from the site has demonstrated that PM₁₀ provides a stronger 'site signal' than PM_{2.5}. The purpose of alerts is to provide site managers with information regarding elevated PM₁₀ concentrations, allowing them to investigate and make operational changes if necessary. An alert threshold has therefore not been set for PM_{2.5} to prevent duplication.

PM₁₀ and PM_{2.5} concentrations recorded by CBC at the southern end of Hawcliffe Road and by Defra through the Automatic Urban and Rural Network (AURN) at Loughborough Thorpe Acre are presented in Appendix A and Appendix B respectively. Data from both locations have been compared against relevant Air Quality Objectives (AQOs) for PM₁₀ and PM_{2.5}.

For deposited dust, the DMMP sets out a site-wide deposited dust threshold of 125 mg/m²/day 'undissolved solids' as a trigger limit for investigation to identify the potential dust source/s, taking account of the directional data.

3 Results

3.1 Weather monitoring

Weather conditions can have a significant effect on the potential for dust propagation from a mineral site. Of particular importance are wind speeds, wind direction, and precipitation. Dust can be carried from a source towards receptors (such as nearby homes and other businesses) according to the strength and direction of wind. Precipitation is recognised to suppress dust and 0.2 mm antecedent rainfall is considered sufficient to suppress windblown dust for a number of hours.

The key weather data which might affect dust propagation (wind speed, wind direction, total daily precipitation and average daily temperature) for this reporting period are summarised in Figure 3.1 and Figure 3.2.

The first half of June saw steadily decreasing average daily temperatures, reaching a minimum of 11.6 °C on 10th June 2026. During the latter half of the month, temperatures increased sharply, peaking at 26.9 °C on 26th June 2026.

Rainfall dominated the monitoring period up until 11th June 2026, with a cumulative total of 31.4 mm recorded during this period. Conditions then became considerably drier throughout mid to late June, with only isolated rainfall events recorded and minimal precipitation overall.

As seen in Figure 3.2, wind speeds were predominantly light to moderate (>0.5 – 6 m/s) throughout this period. Winds most frequently originated from the southerly sector, particularly from the south, south-southwest, and southwest, with secondary contributions from the west. This may have resulted in an increased potential for dust propagation towards the north, north-northeast through to the east during 29th May – 30th June 2026.

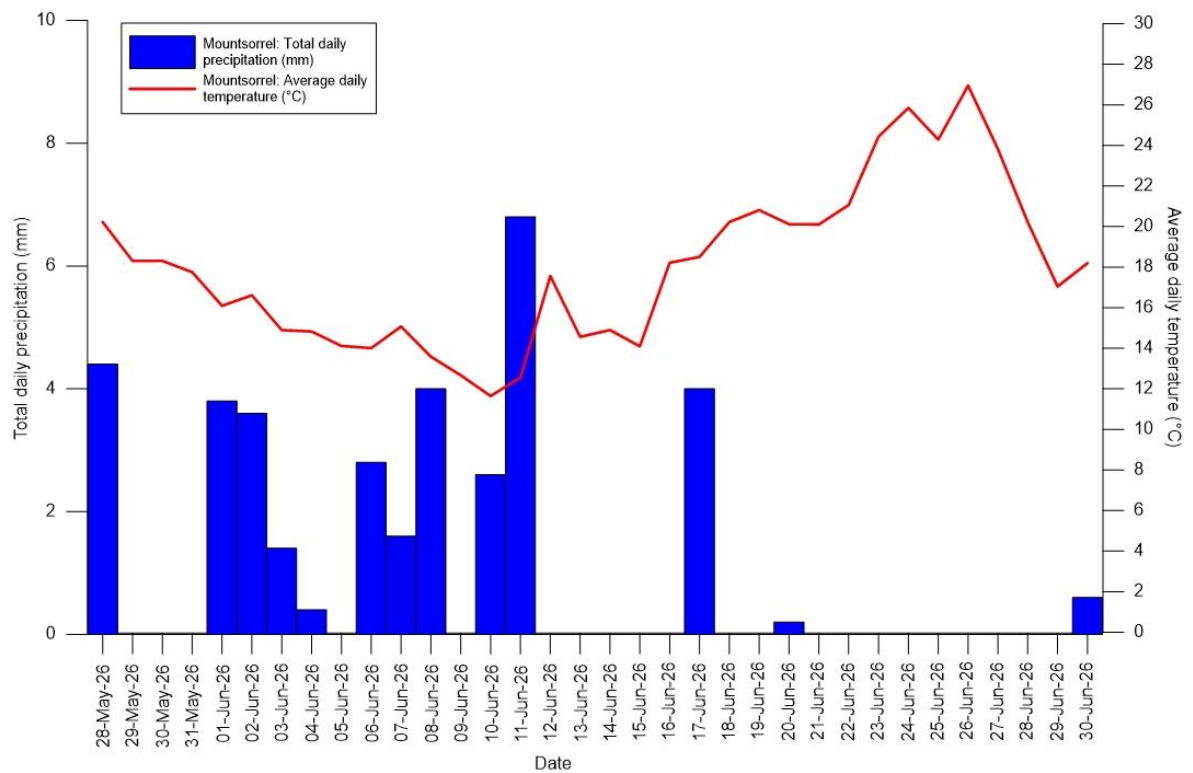


Figure 3.1: Total daily precipitation and average daily temperature, Mountsorrel Quarry, 28th May – 30th June 2026

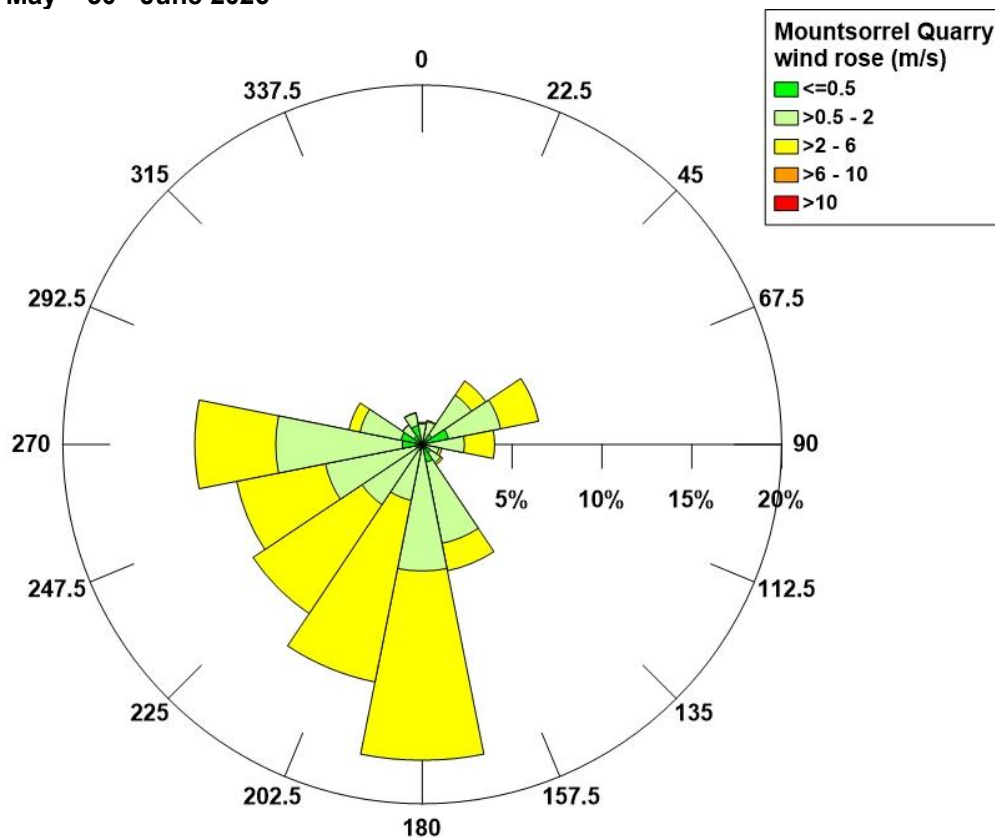


Figure 3.2: Wind rose, Mountsorrel Quarry, 28th May – 30th June 2026

3.2 Particulate matter

3.2.1 PM₁₀

The available 15-minute data from the period of review are presented for both monitoring locations in Figure 3.3 and Figure 3.4 respectively. The red line denotes the site trigger level (125 $\mu\text{g}/\text{m}^3$ over the 15-minute average), whilst the dashed black line denotes the average concentration recorded over this period.

Additional PM₁₀ monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix A.

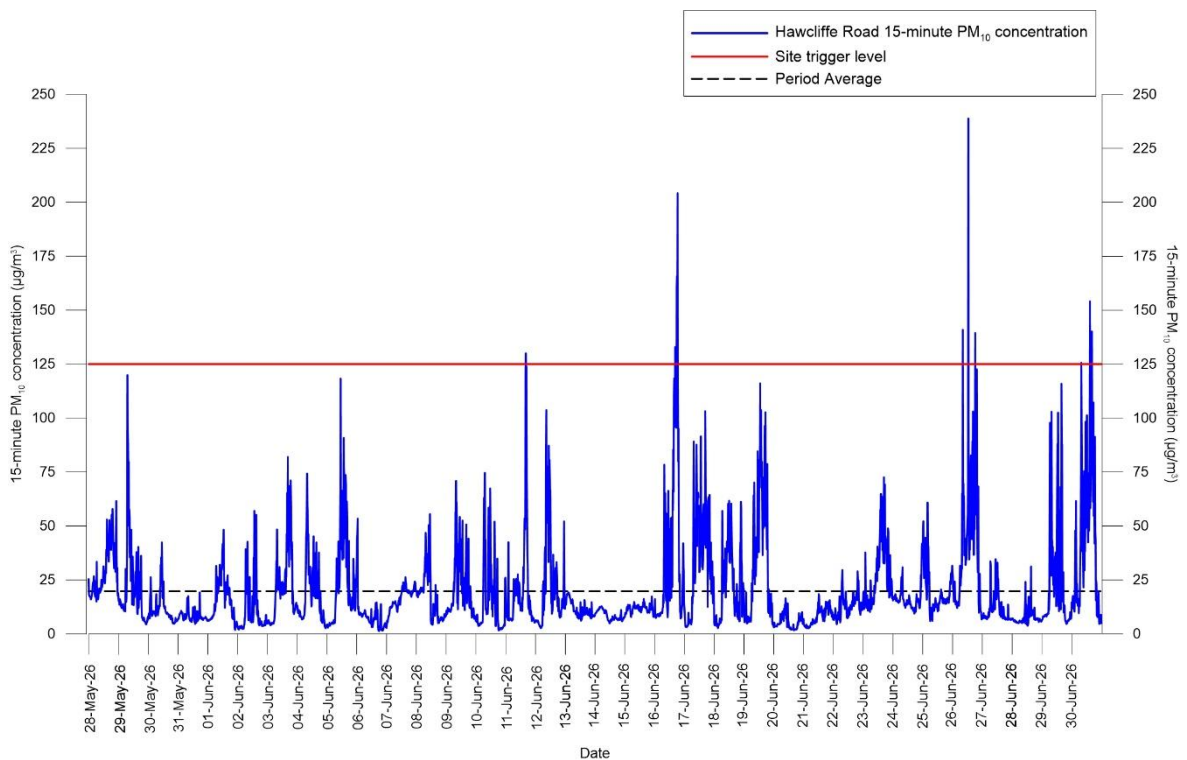


Figure 3.3: 15-minute mean PM₁₀ concentration, Hawcliffe Road, 28th May – 30th June 2026

Figure 3.3 indicates that the period average concentration at the Hawcliffe Road sampler for this period was 19.8 $\mu\text{g}/\text{m}^3$, with the alert threshold being exceeded on four days (11th, 16th, 26th and 30th June) during this monitoring period. Details of the exceedance are provided in Table 3.1.

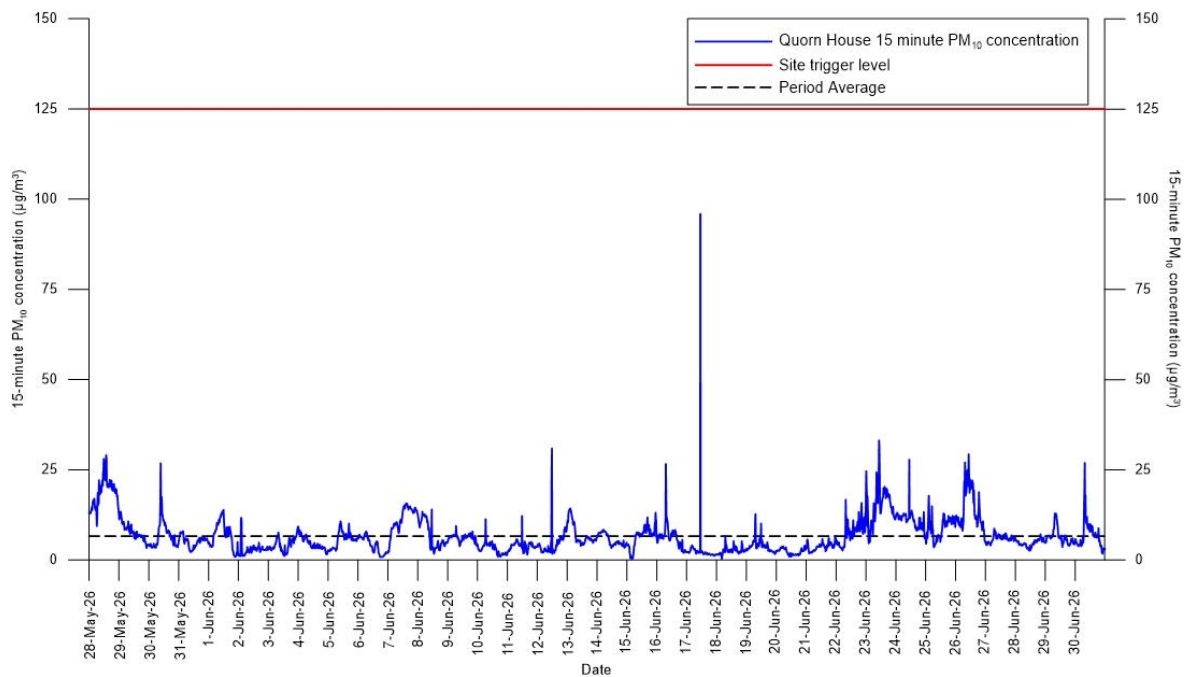


Figure 3.4: 15-minute mean PM₁₀ concentration, Quorn House, 28th May – 30th June 2026.

At Quorn House there were no exceedances of the PM₁₀ site trigger, and the period average was 6.6 µg/m³.

Table 3.1: Email alert responses, between 28th May – 30th June 2026 (using the trigger threshold, 125 µg/m³ for the 15-minute average)

Date of alert	Monitor	Details	Possible cause and investigation
11/06/2026	Hawcliffe Road	Exceedance from the SW in the afternoon	Site investigation carried out when alert received. No issues identified
16/06/2026	Hawcliffe Road	Exceedance WSW and SW during late afternoon to evening	Site investigation carried out when alert received. No issues identified
26/06/2026	Hawcliffe Road	Exceedance in the morning from S, midday from W and evening from SW	Site investigation carried out when alert received. No issues identified
30/06/2026	Hawcliffe Road	Exceedance in the morning from SE and from the WSW and SW in the afternoon	Site investigation carried out at time of alerts. Plant switched off. Management review carried out

3.2.2 PM_{2.5}

The results of PM_{2.5} monitoring at Hawcliffe Road and Quorn House are presented in Figure 3.5 and Figure 3.6. The dashed black line denotes the average concentration recorded over this period.

Additional PM_{2.5} monitoring data (collected by CBC and the Defra AURN monitoring network) are provided in Appendix B.

At Hawcliffe Road, the period average concentration was 8.3 µg/m³, whilst at Quorn House, the period average was 4.4 µg/m³. In general, PM_{2.5} concentrations recorded at Hawcliffe Road experienced greater fluctuations than at Quorn House (as shown by the increased frequency of spikes in the dataset); this is most likely due to its location on the site boundary and in a more built-up environment when compared to the rural location of Quorn House.

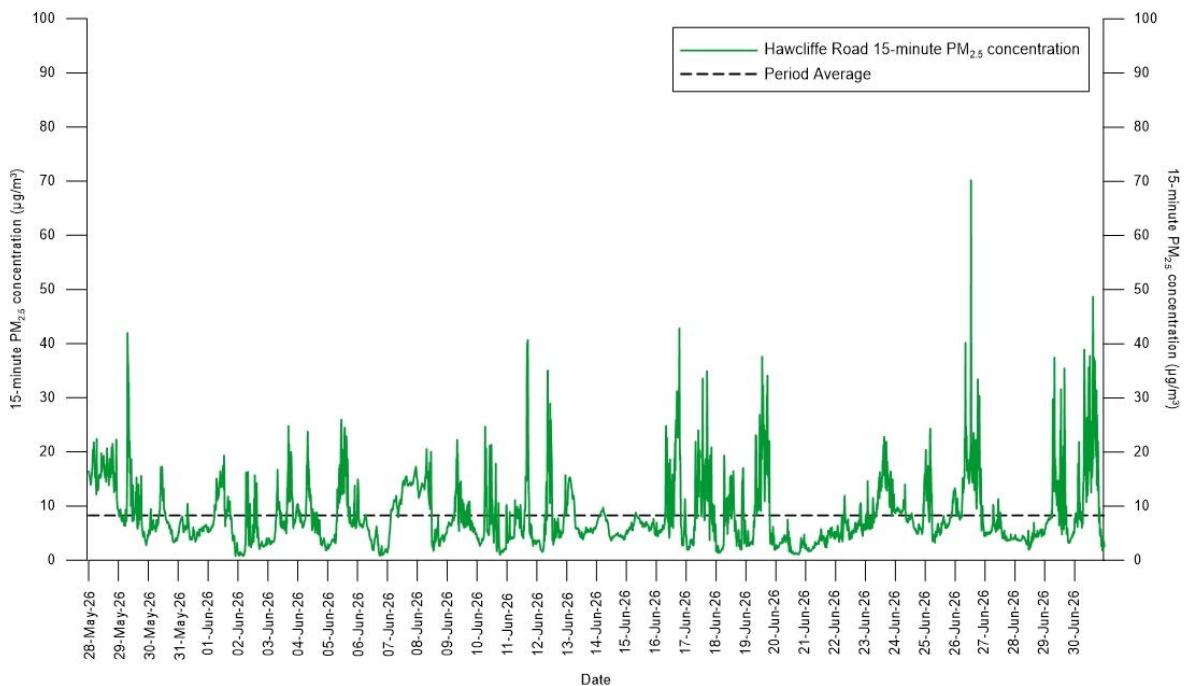


Figure 3.5: 15-minute mean PM_{2.5} concentration, Hawcliffe Road, 28th May – 30th June 2026.

For this period, 42 % of PM₁₀ recorded at Hawcliffe Road comprised PM_{2.5}, whilst it made up 67 % at Quorn House.

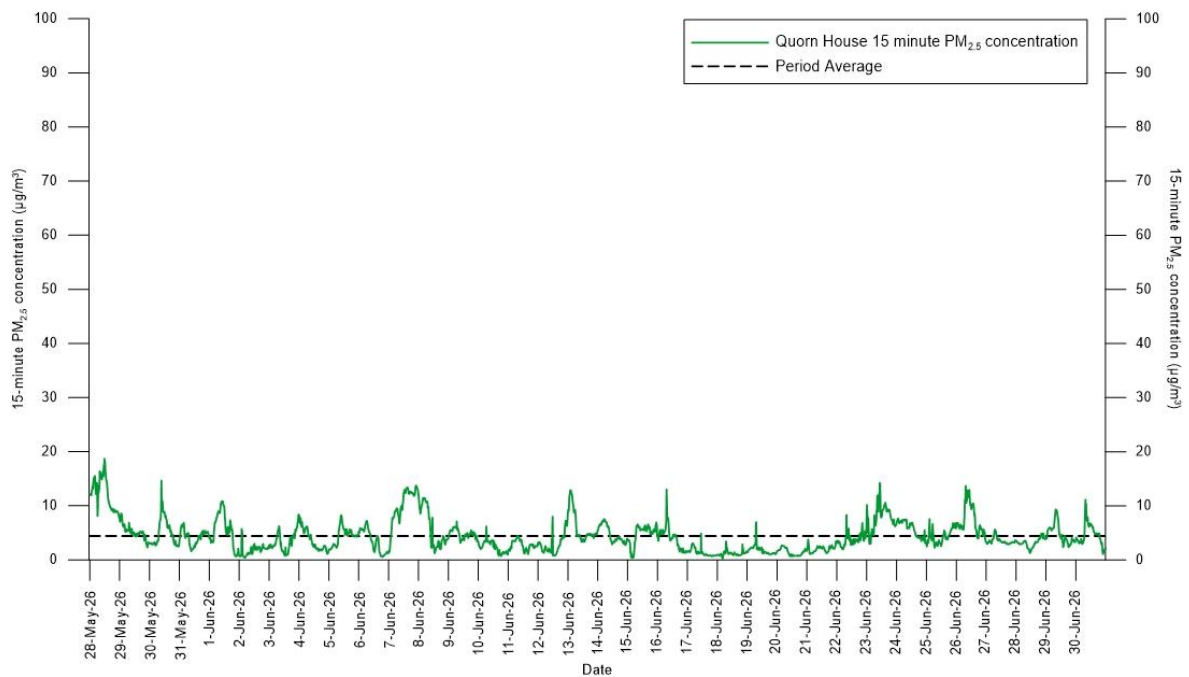


Figure 3.6: 15-minute mean PM_{2.5} concentration, Quorn House, 28th May – 30th June 2026.

3.2.3 Deposited dust monitoring summary

The deposited dust data for 28th May – 30th June 2026 are summarised in Table 3.2. As outlined above, there is a site-wide threshold for investigation to identify the potential dust source/s, taking account of the directional data. Table 3.2 shows that, for the available data, deposited dust levels during 28th May – 30th June 2026 were within the site-specific threshold for all but two stations. At Stn 3, the dust deposition rate reached 141 mg/m²/day and at Stn 11, the dust deposition rate was 241 mg/m²/day.

As outlined below, the directional dust results at Stn 3 imply a potential source to the northeast (i.e. from an off-site direction) whilst the lack of a strong directional signal at Stn 11 suggests that the very high dust deposition rate may be due to contamination. The elevated deposition rate at Stn 11 is being investigated through analysis of stickypad depositional samples collected during this period; the results of this investigation will be presented to CBC and LCC during the next environmental technical meeting.

Table 3.2: Summary of deposited dust (undissolved solids), 28th May – 30th June 2026

Undissolved solids (mg/m ² /day)				
This month report start date:		28-May-26		
This month report end date:		30-Jun-26		
Receptor location	Nearest / appropriate dust monitoring point	Reported value	Trigger: $\geq 125^a$	Magnitude ^b
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	21	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	25	No	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	21	No	Very Low
Mill Farm; Quorn House	Stn 3	141	Yes	Elevated
Woodside Farm, Leicester Road	Stn 4A	36	No	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	79	No	Low
Bond Lane; Crown Lane	Stn 5	22	No	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	50	No	Very Low
Hawcliffe Road	Stn 9	117	No	Slightly Elevated
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	41	No	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	241	Yes	Very High
Meadow Farm Marina and Caravan Park	Stn 12	49	No	Very Low
Quorn House Park	Stn 13	23	No	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of mass deposition rate assessed against typical rate for semi-rural areas (30 - 80 mg/m²/day)

Regarding dust deposition over time, the rates across the sampling area have varied considerably. Trends in dust deposition rates (as undissolved solids) for the previous 12 months, together with the site-wide dust threshold are illustrated in Figure 3.7.

In general, as would be expected, dust deposition rates are typically lower in winter months than in summer months. This trend is clearly seen for most monitoring points in Figure 3.7, with some exceptions. Dust deposition rates have been consistently below the ‘trigger limit’ at all sampling locations, with the exception of Stn 4A, Stn 6A, Stn 11, and Stn 3, which have all exceeded the threshold on one occasion over the past 12 months. Details of the associated investigation can be found in the corresponding compliance reports.

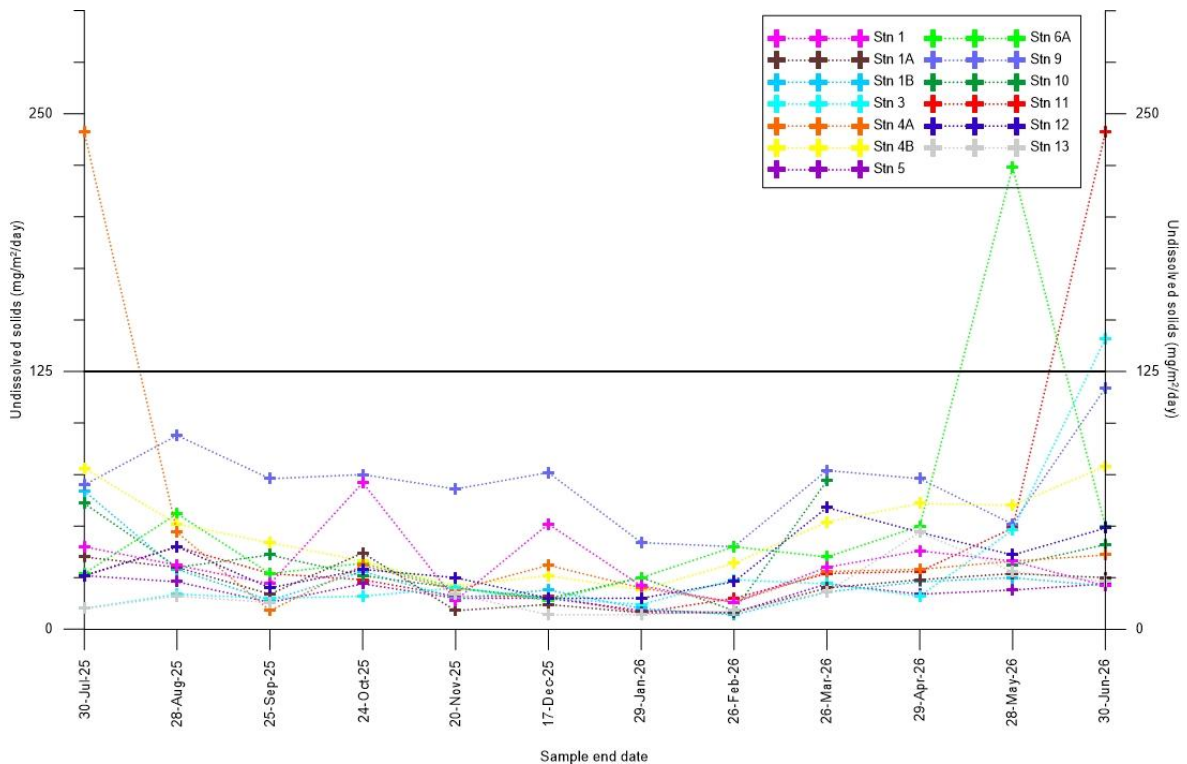


Figure 3.7: Dust deposition rates per sampling location over time (past 12 months)

3.2.4 Directional dust monitoring summary

The directional dust data for 28th May – 30th June 2026 are summarised in Table 3.3 and are presented graphically in Figure 3.8. As with deposited dust, the DMMP sets out a site-wide directional dust threshold. For directional dust soiling, 0.5 % Effective Area Coverage (EAC) per day is a trigger limit for investigation to identify the likely dust source/s, again taking account of the direction. Table 3.3 and Figure 3.8 show that during 28th May – 30th June 2026, all stations recorded Very Low to Low dust flux from all directions.

Table 3.3: Summary of directional dust soiling, 28th May – 30th June 2026

Directional dust soiling (%EAC/day) by direction (*)										
This month report start date:		28-May-26								
This month report end date:		30-Jun-26								
Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Reported value	0.1	0	0	0	0	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Reported value	0.1	0	0	0	0	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Reported value	0	0	0	0.1	0.1	0.1	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Reported value	0	0.2	0.1	0.1	0.1	0	0	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Reported value	0	0	0	0	0.1	0.1	0.1	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Reported value	0	0	0.1	0.1	0.1	0.1	0.1	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Reported value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Reported value	0	0.1	0.1	0.1	0	0.2	0.1	0
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Reported value	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.2
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Reported value	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Reported value	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Reported value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn House Park	Stn 13	Reported value	0.1	0	0.1	0.1	0	0	0.1	0.1
		Trigger: $\geq 0.5^a$	No	No	No	No	No	No	No	No
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^a Trigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^b Magnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^c Direction/s not determined for daily EAC below 0.1%/day (very low soiling)

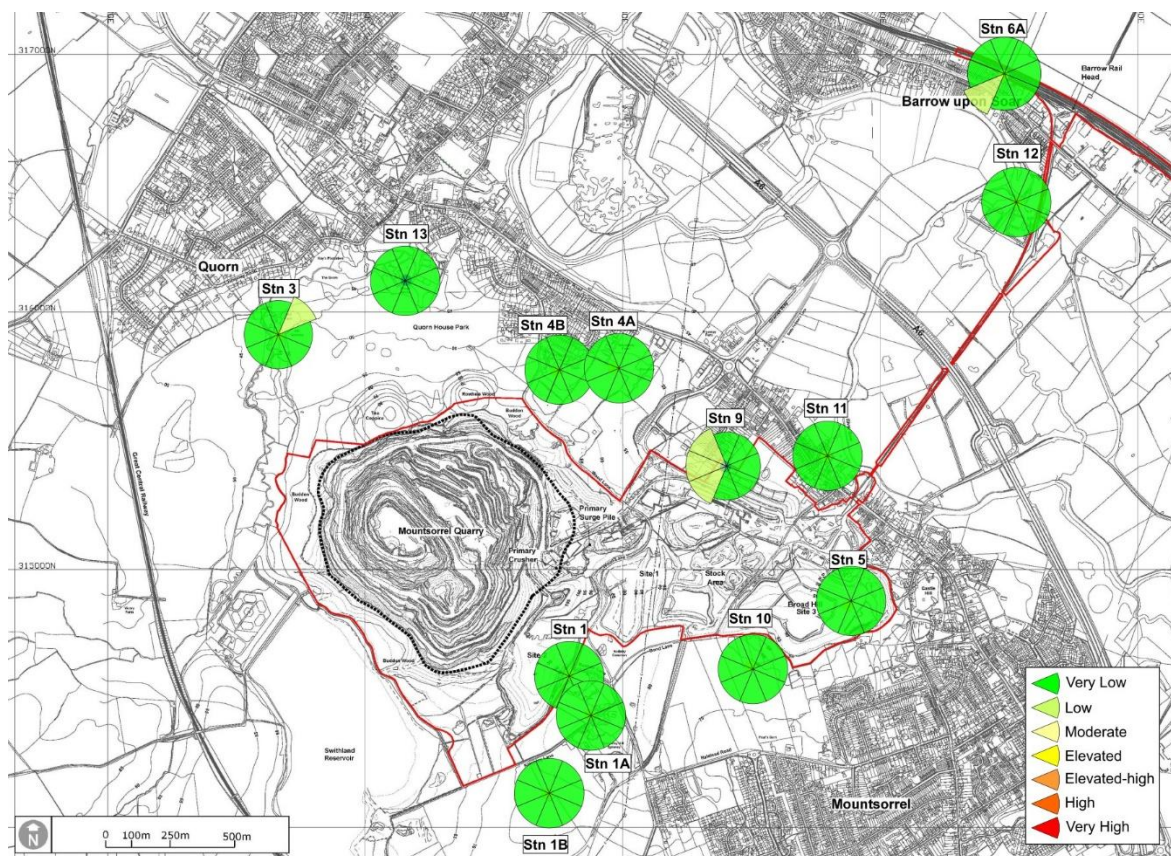


Figure 3.8: Directional dust soiling rose diagrams, 28th May – 30th June 2026

Table 3.4 shows that the average directional soiling rates have been at Very Low to Low levels at all monitoring locations, for all directions, over the past year. Low average direction dust flux level was recorded from the east and southwest at Stn 6A, and from the southwest to west at Stn 9.

Table 3.4: Running average directional dust soiling (past 12 months)

Receptor location	Nearest / appropriate dust monitoring point		Direction (°)							
			0	45	90	135	180	225	270	315
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1	Average value	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1A	Average value	0.1	0.1	0.1	0	0	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Swithland Lane; Rushey Lane; Kinchley Lane	Stn 1B	Average value	0	0	0	0.1	0.1	0.1	0.1	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Mill Farm; Quorn House	Stn 3	Average value	0	0.1	0.1	0.1	0.1	0	0	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Woodside Farm, Leicester Road	Stn 4A	Average value	0	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn Grange, Unitt Road, Northage Close, Quorn Park	Stn 4B	Average value	0	0.1	0.1	0.1	0.1	0.1	0.1	0
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Bond Lane; Crown Lane	Stn 5	Average value	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Sileby Road; Huston Close; Sileby Road (commercial)	Stn 6A	Average value	0	0.1	0.2	0.1	0.1	0.2	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Low	Very Low	Very Low	Low	Very Low	Very Low
Hawcliffe Road	Stn 9	Average value	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Low	Low	Very Low
Glebe Close; Halstead Road (south); Halstead Road (north)	Stn 10	Average value	0.1	0	0	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Loughborough Road; River Soar (marina / caravan park)	Stn 11	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Meadow Farm Marina and Caravan Park	Stn 12	Average value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Quorn House Park	Stn 13	Average value	0	0	0.1	0.1	0.1	0.1	0.1	0.1
		Magnitude ^b	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low

^aTrigger mass deposition and Effective Area Coverage rates as in Section 7.3, ZLFMS-AG008 Dust Management and Monitoring Plan (Updated), 2015

^bMagnitude of directional dust soiling derived from Beaman and Kingsbury, 1981

^cDirection/s not determined for daily EAC below 0.1%/day (very low soiling)

4 Complaints

During June 2026, no dust complaints were received by the quarry.

Appendix A: Off-site PM₁₀ monitoring (CBC and AURN)

The daily average PM₁₀ concentrations recorded by the CBC Zephyr⁴ are presented below in Figure A.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre⁵.

For the monitoring period 28th May – 30th June 2026, both the CBC Zephyr and the Loughborough AURN station achieved a 100% data capture.

For the available data, the average daily PM₁₀ concentration for this monitoring period at the CBC Zephyr (Hawcliffe Road) was 10.6 µg/m³. At the Loughborough AURN the average daily PM₁₀ concentration was 8.0 µg/m³ for the monitoring period.

During the monitoring period, the average daily PM₁₀ concentration recorded by the onsite monitor at Quorn House was slightly lower than those measured at the CBC Zephyr and by the Loughborough AURN monitor. At Hawcliffe Road, the average concentration was 19.8 µg/m³, which is greater than the readings recorded at both the CBC Zephyr and Loughborough AURN site.

Between 28th May – 30th June 2026 there were no recorded instances where the daily average PM₁₀ concentrations exceeded 50 µg/m³ at the CBC Zephyr or at the Loughborough AURN.

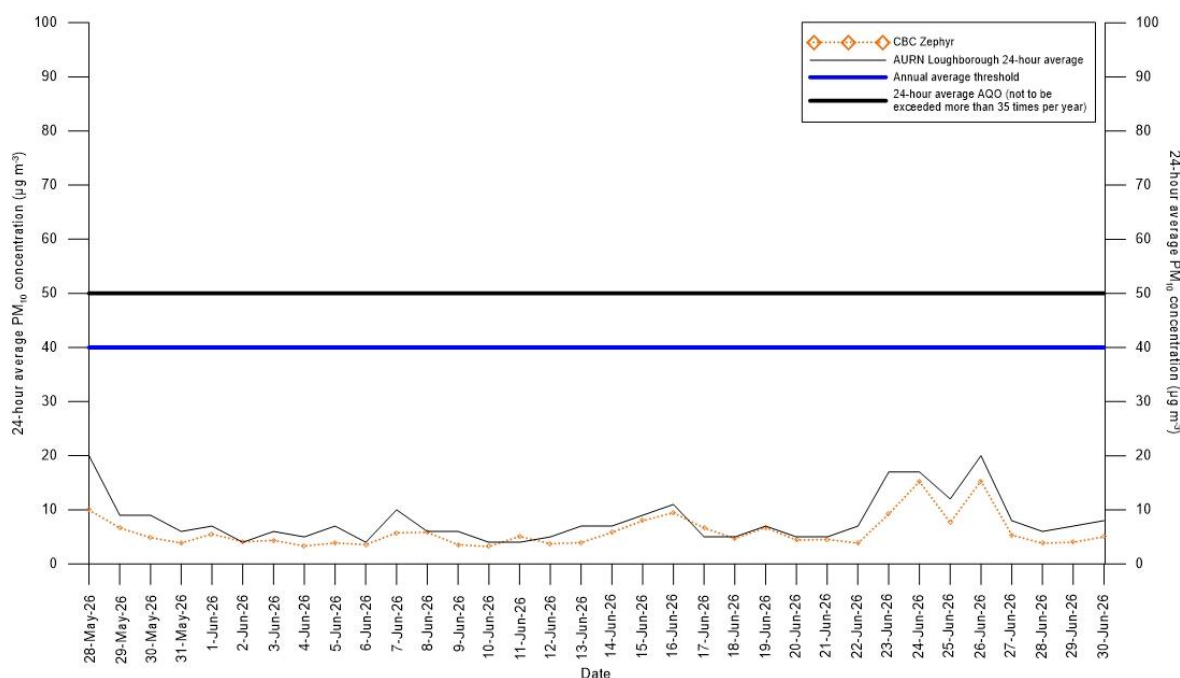


Figure A.1: Daily average PM₁₀ concentration, CBC Zephyr and Loughborough Thorpe Acre AURN, 28th May – 30th June 2026

⁴ <https://portal.earthsense.co.uk/LeicestershireCCPublic/analysis>

⁵ <http://uk-air.defra.gov.uk/networks/network-info?view=aurn>

Appendix B: Off-site PM_{2.5} monitoring (CBC and AURN)

The daily average PM_{2.5} concentrations recorded by the CBC Zephyr are presented below in Figure B.1, alongside similar data from the Defra Automatic Urban and Rural Network (AURN) station in Loughborough Thorpe Acre.

For the monitoring period 28th May – 30th June 2026, both the CBC Zephyr and Loughborough AURN stations achieved 100 % data capture. For the available data the average daily PM_{2.5} concentration for this monitoring period at the CBC Zephyr was 6.7 µg/m³. At the Loughborough AURN the average daily PM_{2.5} concentration was 4.3 µg/m³ for the monitoring period.

Onsite PM_{2.5} concentrations were higher at Hawcliffe Road (8.3 µg/m³) and very similar at Quorn House (4.4 µg/m³) compared to readings recorded by the CBC Zephyr and the AURN site in Loughborough Thorpe Acre.

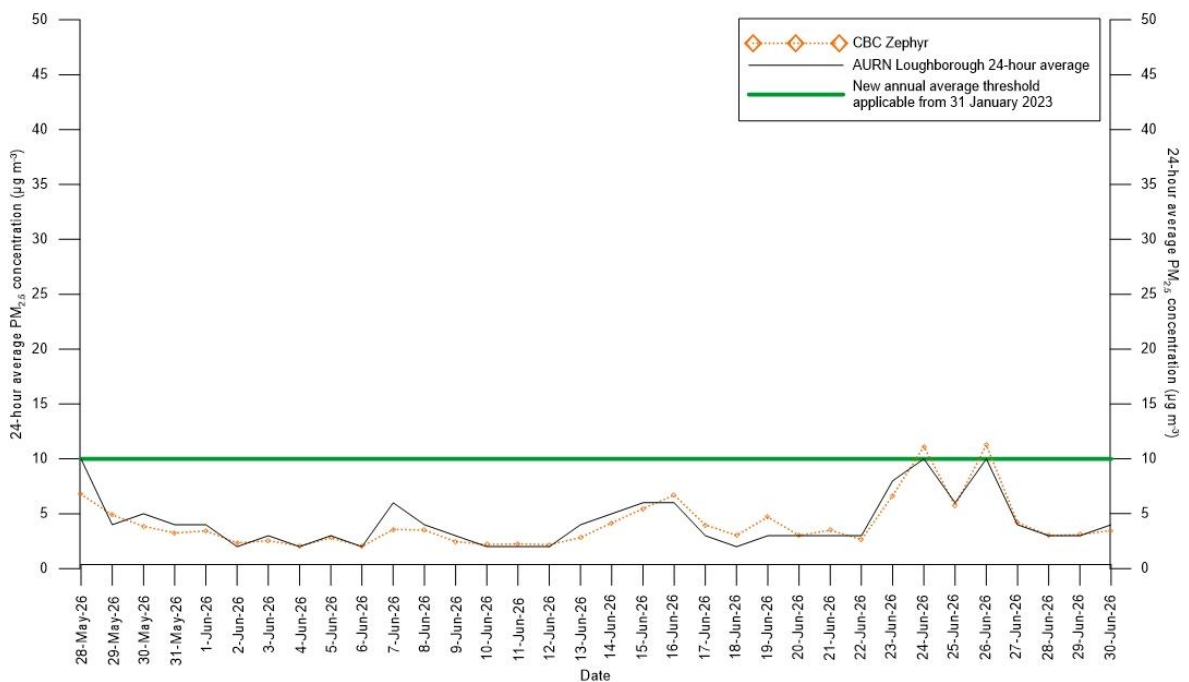


Figure B.1: Daily average PM_{2.5} concentrations, CBC Zephyr and Loughborough Thorpe Acre AURN, 28th May – 30th June 2026

Appendix C: Off-site PM₁₀ and PM_{2.5} Annual Summary

Table C.1: Average PM₁₀ concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 30th June 2026

	AURN Loughborough Thorpe Acre	CBC Zephyr
Valid data capture	100 %	91.5 %
Period average PM ₁₀ concentration	10.3 µg/m ³	10.4 µg/m ³
Percentage of annual AQO (40 µg/m ³)	25.6 %	26.0 %
No. exceedances of daily AQO (50 µg/m ³ , not to be exceeded more than 35 times per calendar year)	0	0

Table C.2: Average PM_{2.5} concentrations at CBC Zephyr and Loughborough AURN for 12 months up to 30th June 2026

	AURN Loughborough Thorpe Acre	CBC Zephyr
Valid data capture	100 %	91.5 %
Period average PM _{2.5} concentration	6.6 µg/m ³	6.5 µg/m ³
Percentage of Target Value (10 µg/m ³ as an annual average)	66.0 %	65.0 %