



Mountsorrel Quarry

Mountsorrel Quarry is a granite quarry, owned by Tarmac. It is locally and nationally renowned for its distinctive pink rock, which is in high demand for construction and infrastructure projects in Leicestershire and beyond.

We are committed to being a good neighbour and to providing regular updates to the people who live and work in the area. This leaflet seeks to provide further information on how we manage air quality at the quarry.

Types of dust and their sources

Dust is all around us. It originates from diverse natural sources, including pollen, sea spray, and wind-carried desert dust. It also stems from human activities such as domestic heating, agriculture, transportation and industrial operations. There are different types of dust (see Table 1). According to estimates, quarrying activities contribute to less than 5% of national PM₁₀ emissions and just 1% of

national PM_{2.5} emissions¹. However, it is still of paramount importance that we understand and take proactive steps to minimise the impact our operations have.

Table 1: Types of dust

Nuisance dust - visible dust formed of particles over 10 microns² in diameter, typically associated with annoyance.

PM₁₀ - often called 'particulate matter', it is an invisible air pollutant consisting of small particles with an average diameter less than or equal to 10 microns.

PM_{2.5} - often known as 'fine particulate matter', it has an average diameter of up to 2.5 microns. It is high-risk respirable dust.

Mineral extraction can create various sources of dust through the exposure of soil and the underlying mineral deposits, as well as the extraction, transportation, processing and storage of the material. Given the

nature of the mineral at Mountsorrel Quarry (granite), most of the dust created is made up of coarser, visible particles. The industry and its regulators recognise the importance of putting in place rigorous control measures and effective mitigation techniques to ensure local air quality is not adversely affected.

Health impacts of dust

When dust covers houses and cars it can certainly cause inconvenience to residents. It may also be irritating if swallowed or if it comes into contact with skin or eyes. However, visible dust particles are generally not small enough to pose any significant health risks as the particles cannot be inhaled into the lungs and are too heavy to remain in the air for very long. The particles that can be inhaled deep into the lungs and cause harm are generally so fine they are invisible to the eye. They are generally particles of 4 microns or smaller (such as PM_{2.5}). See below for more details on the levels of these invisible particulates.

¹ UK National Atmospheric Emissions Inventory, 2019, MPA calculations

² A unit of length equal to one millionth of a metre



Proactively minimising dust

We work very hard to make sure that we operate the quarry in a way that carefully manages any potential impacts on air quality. There are national air quality standards and stringent regulatory controls that we have to adhere to to ensure that our employees, neighbours and the local environment is carefully protected.

Our approach to monitoring and mitigation is set out in a comprehensive Dust Management and Monitoring Plan (DMMP) that is a condition of our planning consent. This plan has been agreed with the necessary public authorities (Leicestershire County Council, Charnwood Borough Council, and the Environment Agency). It is produced by independent experts and is reviewed at least every two years, and whenever there are significant changes to quarry operations. It is publicly available at https://www.charnwood.gov.uk/pages/mountsorrel_quarry.

Our plan takes a two-fold approach to managing air quality: firstly, we assess and extensively monitor dust levels to give us a full understanding and ensure we remain within agreed thresholds; and secondly, we proactively adopt mitigation techniques to reduce the impacts.

Monitoring

Mountsorrel Quarry is one of the most monitored quarries in the UK. We undertake air quality monitoring at 19 locations around the site testing for dust and particulates (PM₁₀ and PM_{2.5}). Most monitoring locations are situated in residential areas across Quorn, Mountsorrel and Rothley. For a map of monitoring locations see 'Additional Resources' below.

The air quality monitoring measures levels against a set threshold agreed with Charnwood Borough Council. The monitoring results are reported to the Council each month and regularly reviewed in consultation with other public bodies.

Charnwood Borough Council is responsible for ensuring that air quality is within the national limits throughout the Borough, including in Quorn, Mountsorrel and Rothley. As the quarry is only one of a diverse range of sources of dust, they undertake independent air quality monitoring of their own. The results of this monitoring are available via <https://www.charnwood.gov.uk/pages/airpollution>.

Mitigation

Our extensive monitoring enables us to identify the best methods to effectively manage and control our dust emissions. Our methods include:

- Staff training in 'toolbox talks' to heighten awareness of key issues
- Enclosure of operational machinery
- Spraying water on internal haul roads and extraction areas to dampen the dust
- Washing the wheels of lorries when leaving the quarry and reducing vehicle speeds
- Minimising the size of operational areas and screening them using landscaping and planting

If the results of our monitoring shows that the dust rate is below the set thresholds, this means everything is going to plan. However, despite working very hard we

are not perfect and sometimes limits are exceeded. If this happens, an investigation is triggered and mitigation measures are quickly put in place to try to fix the issue as soon as possible.

Our impacts on local dust levels

Between July 2022 - June 2023

Dust: levels remained below set thresholds at all locations, except for south of Kinchley Lane (exceeded once) and the top of Hawcliffe Road (exceeded twice). An additional dust monitor was installed next to our stocking ground in July 2023 following reports of high dust levels, which will report in our next round of results.

PM₁₀: levels were compliant with the national Air Quality Objectives.

PM_{2.5}: levels were compliant with the national Air Quality Objectives.

The main reason we exceeded dust levels was due to the use of temporary operations following fire damage to our screenhouse at the end of last year. We recognise this is unacceptable and have been working hard to rectify this. You can read more about what we have been doing on our website. We anticipate the new screenhouse will be completed by the end of 2023, which will enclose our processing operations and will make use of the very latest technologies in dust suppression.

It is important to remember that there are multiple different sources of dust and particulates and that the quarry is only one of a multitude of local dust emitters. So whilst we monitor dust levels, these will by nature include dust from sources outside of the quarry. Weather conditions also have a big impact on the dust levels in and around the quarry, which is why sometimes it may feel to our neighbours that dust levels are higher than usual.

Please keep in touch

We hope this overview of the steps we take to monitor and control dust at Mountsorrel Quarry has been useful and informative. If you ever have any comments or questions about our operations, we want to hear from you. Please email us via mountsorrelquarryfeedback@tarmac.com.

Additional Resources

Our Dust Management Plan is available at <https://www.charnwood.gov.uk/pages/airpollution>

Charnwood Borough Councils independent air quality monitoring data is available via https://www.charnwood.gov.uk/pages/mountsorrel_quarry

We have committed to publishing our own monitoring data on a quarterly basis via our website

Further reading, including more technical explanations of the information, is available via <https://www.mountsorrel.tarmac.com/environment> or by scanning the QR code

If you would like to find out more about us and our operations, please visit <https://www.mountsorrel.tarmac.com>

