Contaminated Land
Air Quality
Environmental Audit

SMITH GRANT Environmental Consultancy LLP

Partnership No: OC 00776

APP6/2

Town & Country Planning Act 1990
Section 78 Appeals

Craig Yr Hesg Quarry

Appendices to the

Evidence of:

Katrina Early Hawkins
Smith Grant LLP

AIR QUALITY

On behalf of: Hanson UK

Planning Inspectorate Reference: APP/L6940/A/20/3265358 (Extension Appeal)
Planning Inspectorate Reference: APP/L6940/A/21/3282880 (S73 Appeal)

Local Authority Reference: 15/0666/10 (Extension Appeal)
Local Authority Reference: 21/0720/15 (S73 Appeal)

May 2022

APPENDICES **APP6/2**

Appendix KEH1

Extract of Planning Policy Wales Ed 11

Planning Policy Wales

Edition 11 | February 2021

Llywodraeth Cymru
Welsh Government

to essential transport and utilities infrastructure. Such infrastructure should be designed and constructed so as to remain operational even at times of flood, to result in no net loss of floodplain storage, to not impede water flows and to not increase flood risk elsewhere. TAN 15: Development and Flood Risk should be referred to for further policy advice on development and flood risk. It will be important to note that developments located within flood risk areas remain at risk from flooding even if mitigation measures are applied.

6.6.27 Planning authorities should be aware of the risk of surface water flooding, usually caused by heavy rainfall, and ensure developments are designed and planned to minimise potential impacts. Development should not cause additional run-off, which can be achieved by controlling surface water as near to the source as possible by the use of SuDS. Care should be taken in places of shallow groundwater or where flooding is caused by combined surface and groundwater processes. In such situations direct infiltration SuDs may not be appropriate. Consultation with drainage bodies and NRW should be undertaken and relevant evidence and information drawn from Area Statements taken into account.

6.6.28 New or improved flood defences in coastal and/or riverside locations should be carefully planned, ensuring all potential environmental effects, both on and off-shore, and relevant Shoreline Management Plan policies are taken into account. Flood defence works can provide opportunities to achieve wider social, economic and environmental benefits, which should be maximised where possible. Nature based solutions should be the first consideration given the opportunity to deliver other multiple benefits, including habitat creation, biodiversity enhancement and water quality improvements. Overall, green infrastructure opportunities can benefit ecosystem resilience and provide opportunities for leisure facilities or renewable energy generation.

6.6.29 The ability of emergency services to respond to flood events should be taken into account when considering if a development in a flood risk area is appropriate. This may involve consultation with emergency planners, local resilience forums and other professional partners such as fire rescue, police and ambulance services.

6.7 Air Quality and Soundscape

6.7.1 Clean air and an appropriate soundscape[142], contribute to a positive experience of place as well as being necessary for public health, amenity and well-being. They are indicators of local environmental quality and integral qualities of place which should be protected through preventative or proactive action through the planning system. Conversely, air, noise and light pollution can have negative effects on people, biodiversity and the resilience of ecosystems and should be reduced as far as possible.

6.7.2 National air quality objectives are not 'safe' levels of air pollution[143]. Rather they represent a pragmatic threshold above which government considers the health risks associated with air pollution are unacceptable. Air just barely compliant with these objectives is not 'clean' and still carries long-term population health risks. Nitrogen dioxide and particulate matter, which are the pollutants of primary national concern from a public health perspective, currently have no safe threshold defined and therefore the lower the

[142] By which we mean the acoustic environment as perceived or experienced and/or understood by a person or people, in context (ISO definition)

[143] National air quality objectives contained in the Air Quality (Wales) Regulations 2000, as amended by the Air Quality (Wales) (Amendment) Regulations 2002.

concentration of those pollutants the lower the risks of adverse health effects. It is desirable to keep levels of pollution as low as possible.[144] [145]

6.7.3 Certain sounds, such as those created by trees, birds or water features, can contribute to a sense of tranquillity whilst others can be reassuring as a consequence of their association with the normality of everyday activities. Problematic forms of sound are generally experienced as noise pollution and can affect amenity and be prejudicial to health or a nuisance. Noise action plans[146] drawn up by public bodies aim to prevent and reduce noise levels where necessary and preserve soundscape quality where it is good. Noise levels used to identify priority areas contained in noise action plans are usually set quite high in order to focus resources on the most polluted areas and noise must meet a number of tests before it qualifies as a statutory nuisance. Lower levels of noise, however, can still be annoying or disruptive and impact on amenity and as such should be protected through the planning process wherever necessary. The planning system must protect amenity and it is not acceptable to rely on statutory nuisance under the Environmental Protection Act 1990[147] to do so.

Framework for Addressing Air quality and Soundscape

6.7.4 The planning system should maximise its contribution to achieving the well-being goals, and in particular a healthier Wales, by aiming to reduce average population exposure[148] to air and noise pollution alongside action to tackle high pollution hotspots. In doing so, it should consider the long-term effects of current and predicted levels of air and noise pollution on individuals, society and the environment and identify and pursue any opportunities to reduce, or at least, minimise population exposure to air and noise pollution, and improve soundscapes, where it is practical and feasible to do so.

6.7.5 In taking forward these broad objectives the key planning policy principle is to consider the effects which proposed developments may have on air or soundscape quality and the effects which existing air or soundscape quality may have on proposed developments. Air Quality and soundscape influence choice of location and distribution of development and it will be important to consider the relationship of proposed development to existing development and its surrounding area and its potential to exacerbate or create poor air quality or inappropriate soundscapes. The agent of change principle says that a business or person responsible for introducing a change is responsible for managing that change. In practice, for example, this means a developer would have to ensure that solutions to address air quality or noise from nearby pre-existing infrastructure, businesses or venues can be found and implemented as part of ensuring development is acceptable.

6.7.6 In proposing new development, planning authorities and developers must, therefore:

- address any implication arising as a result of its association with, or location within, air quality management areas, noise action planning priority areas or areas where there are sensitive receptors[149];

[144] Advice can be found in EPUK/IAQM guidance: Land-Use Planning & Development Control: Planning for Air Quality (http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf).
[145] The Welsh Government has published guidance on local air quality management (https://gov.wales/air-quality-management-guidance-local-authorities) and a Clean Air Plan for Wales: Healthy Air, Healthy Wales, 2020 (https://gov.wales/clean-air-plan-wales-healthy-air-healthy-wales).
[146] The Welsh Government has published the Noise and soundscape action plan 2018 to 2023, December 2018 (https://gov.wales/noise-and-soundscape-action-plan-2018-2023).
[147] Part III Environmental Protection Act 1990.
[148] The number of people exposed to the pollutant as well as the levels to which they are exposed.
[149] Air quality management areas and noise maps may both be viewed at http://lle.gov.wales/catalogue?t=1&lang=en

- not create areas of poor air quality or inappropriate soundscape; and
- seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes.

6.7.7 To assist decision making it will be important that the most appropriate level of information is provided and it may be necessary for a technical air quality and noise assessment to be undertaken by a suitably qualified and competent person on behalf of the developer.

6.7.8 Good design, for example setting back buildings from roads to avoid canyon effects and using best practice in terms of acoustic design[150] to ensure the appropriate and intended acoustic environment of completed developments should be incorporated at an early consideration in the design and planning process. Other mitigation measures must be capable of being effectively implemented for their intended purpose, and could include those related to:

- traffic management and road safety;
- ensuring progress towards a shift to low or zero emissions means of road transport, such as electrical charging points;
- supporting low or zero emissions public transport;
- providing active travel infrastructure; and
- incorporating green infrastructure, where it can improve air quality by removing air pollution and aiding its dispersal, reduce real or perceived noise levels by absorbing and scattering noise and introducing natural sounds to soften man-made noise, provide areas of relative tranquillity, and reduce exposure by putting a buffer between sources of pollution and receptors.

6.7.9 When proposing new strategies for development and when allocating sites in development plans it will be important to avoid instances where incremental development of infrastructure, housing, commercial and industrial development creates or exacerbate health and amenity inequalities by introducing more sensitive receptors into an area or by making existing occupiers more vulnerable to poor air quality or noise. This may particularly be the case when proposing high density developments adjacent to transport hubs or where development pressure to meet short-term needs may have detrimental long-term effects and care must be taken not to exacerbate health inequalities whilst recognising accessibility needs.

6.7.10 Taking a sustainable approach will mean balancing short-term needs against long-term objectives to reduce public exposure to airborne pollution and giving particular consideration to the presence of air quality management areas, noise action planning priority areas and areas with sensitive receptors when proposing new development and particularly when preparing development plans. It will be important to identify wider mitigation solutions to reduce air and noise pollution and to avoid exacerbating problems in existing air quality management areas or noise hotspots through the provision of green infrastructure identified as part of Green Infrastructure Assessments, by the provision of electric vehicle charging infrastructure or through promoting the need to consider effective design solutions. Planning authorities should work closely with bodies such as the

[150] For more information on the principles of good acoustic design, readers are referred to Professional Planning Guidance (ProPG) Supplementary Document 2, produced by the Association of Noise Consultants, the Institute of Acoustics and the Chartered Institute of Environmental Health (http://www.association-of-noise-consultants.co.uk/propg/). ProPG has been written principally to assist with the planning process in England, but the design principles put forward in Supplementary Document 2 may also be adopted in Wales.

Public Service Boards in the preparation of their well-being plans and seek input from their own Environmental Health departments.

Understanding and Identifying the Sources of Airborne (Air and Noise) Pollution

6.7.11 Air and noise pollution are often, but not exclusively, emitted from the same sources, notably road transport, commercial and industrial activities. Consequently, areas of poor air quality often coincide or overlap with areas subject to high noise levels. Even where they do not, poor air quality at one location and high levels of noise at a neighbouring location may be related to one another, depending on the characteristics of the place in question, including the way in which people use and occupy places and the way in which traffic is managed in the wider area. Where air and noise pollution are generated from the same source they should be considered and addressed together and links should be made with active travel and other strategies for reducing vehicular use so as to reduce or minimise, pollution and to ensure an appropriate soundscape.

6.7.12 Planning authorities must consider current and future sources of air and noise pollution as part of developing their strategies for locating new development. The pattern of proposed development should be informed by the sensitivity of, and compatibility of, uses in relation to the sources of airborne pollution and the importance of ensuring appropriate soundscapes. Green infrastructure provision will be an important means of addressing the cumulative impacts of air and noise pollution and soundscapes on individuals and society and provide benefits for social and ecosystems resilience.

6.7.13 When developing strategies, proposing or assessing development proposals it will be essential to understand the implications of the transport demand associated with the proposal and the effect this may have now and in the foreseeable future. When proposing to introduce a development activity into an area the impacts which existing pollution sources (including roads, railways and industrial or commercial operations) have in terms of air and noise pollution should be carefully considered, particularly taking into account any increases in pollution levels which may be reasonably expected in the foreseeable future as a result of increased transport activity.

6.7.14 Proposed development should be designed wherever possible to prevent adverse effects to amenity, health and the environment but as a minimum to limit or constrain any effects that do occur. In circumstances where impacts are unacceptable, for example where adequate mitigation is unlikely to be sufficient to safeguard local amenity in terms of air quality and the acoustic environment it will be appropriate to refuse permission.

Location of Commercial, Industrial and other Potentially Polluting Development

6.7.15 For the purposes of this section, potentially polluting development includes commercial, industrial, energy[151] and agricultural or transport infrastructure. Such development should be located in areas where there is low potential for public exposure, or where its impact can be minimised. Novel or new development types may potentially cause pollution and should be carefully considered, and where appropriate, decisions should be based on the precautionary principle.

[151] Further guidance on wind turbine noise assessment can be found in ETSU-R-97 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/49869/ETSU_Full_copy__Searchable_.pdf and further good practice guidance published by the Institute of Acoustics: https://www.ioa.org.uk/publications/wind-turbine-noise

6.7.16 Relevant considerations in making planning decisions for potentially polluting development are likely to include:

- location, including the reasons for selecting the chosen site itself;
- impact on health and amenity;
- effect of pollution on the natural and built environment and the enjoyment of areas of landscape and historic and cultural value;
- impact on groundwater and surface water quality;
- effect on biodiversity and ecosystem resilience, including where there may be cumulative impacts on air or water quality which may have adverse consequences for biodiversity and ecosystem resilience;
- the risk and impact of potential pollution from the development, insofar as this might lead to the creation of, or worsen the situation in, an air quality management area, a noise action planning priority area or an area where there are sensitive receptors; and
- impact on the road and other transport networks, and in particular on traffic generation, particularly where the proposed development is not transport infrastructure itself.

6.7.17 The location of potentially polluting development adjacent to sensitive receptors will be unacceptable where health and amenity impacts cannot be minimised through appropriate design and mitigation measures. It is the overall expectation that levels of pollution should be reduced as far as possible and for this reason the location of potentially polluting development should be taken into account as part of overall strategies in development plans to ensure it can be appropriately located and maximum environmental benefits can be gained through measures such as green infrastructure.

6.7.18 Early consideration is required to ascertain whether the location and design of proposed development is acceptable where air pollution or noise-generating development is likely to affect a protected species, or is proposed in an area likely to affect a statutorily designated site (such as Natura 2000 sites or SSSIs) or a tranquil urban green space (including but not limited to formally designated 'quiet areas') valued for the restorative respite and contact with nature that they offer to residents of busy towns and cities.

Sensitive Development

6.7.19 The health imperative of good air quality and appropriate soundscapes in contributing to the overall character and quality of places and the health and well-being of people and wildlife should be fully recognised. It will not be appropriate to locate sensitive uses, such as hospitals, schools, care homes and housing adjacent to busy roads or other transport routes, where there are no connectivity benefits to be gained and where health and amenity impacts associated with increased exposure of people to pollution will be unacceptable. Whilst some uses may be appropriate with the aid of good design air quality and soundscape considerations can be overriding factors, especially for sensitive uses, if they cannot be adequately mitigated and impacts minimised.

6.7.20 Where sensitive developments need to be located close to existing transportation infrastructure for sustainable movement and access they should be designed, as far as practicable, to limit harmful substances and noise levels within and around those developments both now and in the future. This may include employing the principles of good acoustic design and the inclusion of active travel or travel management measures as part of development proposals. Such development, however, should preferably be located away from existing sources

of significant noise, which may include aircraft noise or roads, particularly new roads or those with programmed route improvements.

6.7.21 Regard should be paid to current air quality and noise levels and the quality of the existing soundscape and account taken of any relevant local air quality action plan, noise action plan and/or local or regional air quality strategy as part of development strategies and proposals in development plans and before determining planning applications.

Soundscapes and Compatibility of Uses

6.7.22 Certain qualities of sound can be associated with particular places and the activities within them. Taking steps to foster the continued longevity of uses and activities which provide wider cultural benefit and experience for people and contribute towards the local economy, both in terms of a vibrancy of place and in creating a space for creativity to flourish, is an important role for the planning system.

6.7.23 When considering the formulation of strategies or individual proposals, bearing in mind the agent of change principle, it will be necessary to identify the nature of the soundscape which exists in an area and the characteristics of the place, or specific activities, which have shaped it.

6.7.24 The potential impacts of noise pollution arising from existing development, be this commercial, industrial, transport-related or cultural venues (such as music venues, theatres or arts centres), must be fully considered to ensure the effects on new development can be adequately controlled to safeguard amenity and any necessary measures and controls should be incorporated as part of the proposed new development. This will help to prevent the risk of restrictions or possible closure of existing premises or adverse impacts on transport infrastructure due to noise and other complaints from occupiers of new developments. It will be important that the most appropriate level of information is provided and assessment undertaken.

6.7.25 Planning authorities should identify areas of cultural or historic importance to be given special consideration in terms of soundscape where this may be necessary to safeguard the vibrancy of places or provide tranquil, restorative environments within busy built-up areas. As well as this, it will be invaluable to identify synergies between the mapping of green infrastructure and the moderating effect the protection of, or provision of, green infrastructure may have in terms of maintaining good air quality and appropriate soundscapes. This will include, but is not limited to, protecting tranquillity, the role of tranquil green spaces such as the 'quiet areas' designated in noise action plans and the benefits of green infrastructure as part of good design.

Managing Potential Environmental Risk Arising through Construction Phases

6.7.26 Planning authorities must consider the potential for temporary environmental risks, including airborne pollution and surface and subsurface risks, arising during the construction phases of development. Where appropriate planning authorities should require a construction management plan, covering pollution prevention, noisy plant, hours of operation, dust mitigation and details for keeping residents informed about temporary risks.

6.8 Lighting

6.8.1 There is a need to balance the provision of lighting to enhance safety and security to help in the prevention of crime and to allow activities like sport and recreation to take place with the need to:

- protect the natural and historic environment including wildlife and features of the natural environment such as tranquillity;
- retain dark skies where appropriate;

Appendix KEH2

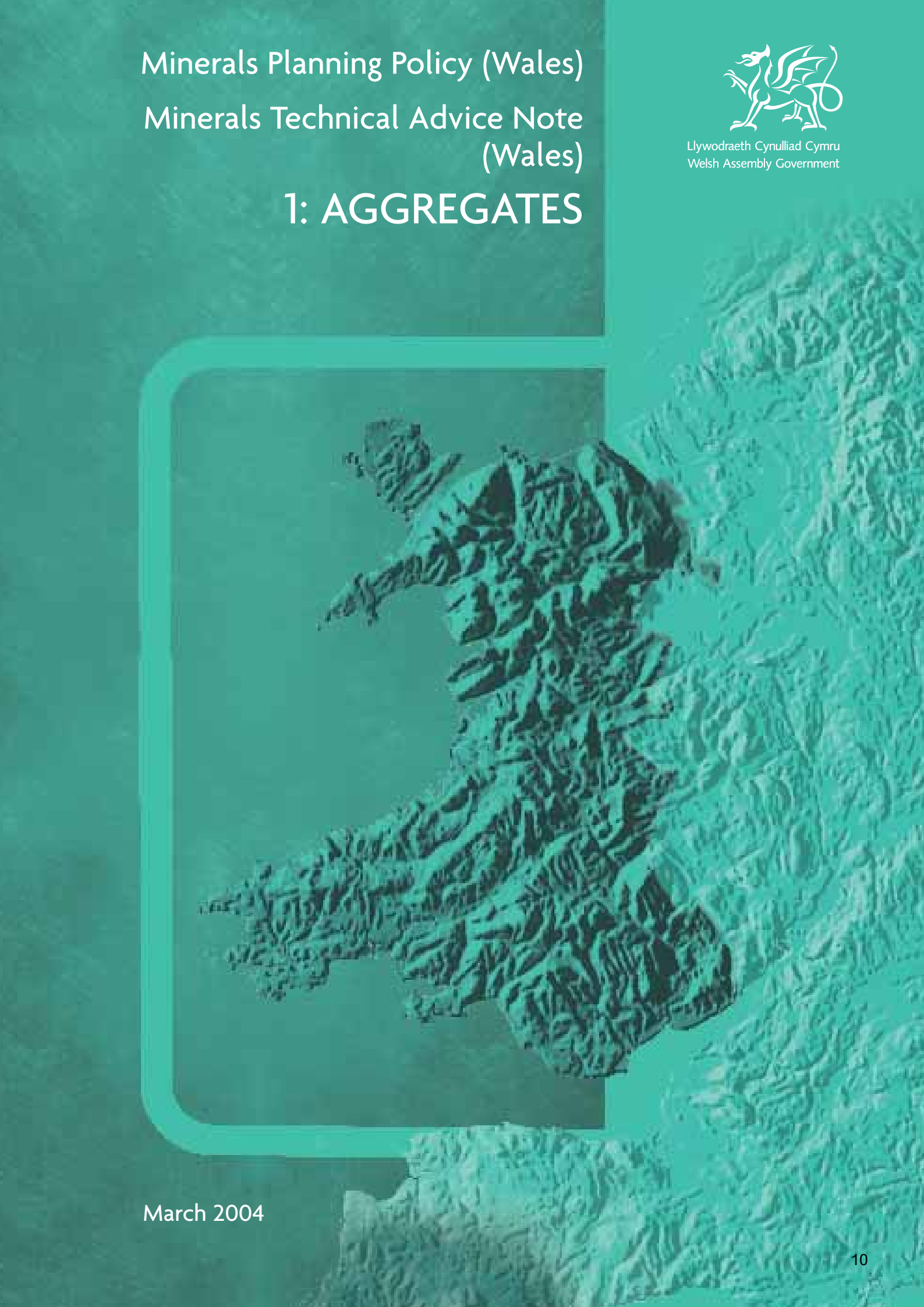
Extract of Mineral Technical Advice Note (Wales) 1: Aggregates (MTAN1)

Minerals Planning Policy (Wales)

Minerals Technical Advice Note (Wales)

1: AGGREGATES

Llywodraeth Cynulliad Cymru
Welsh Assembly Government



March 2004

C. To reduce the impact of aggregates production

Buffer Zones

70. MPPW (paragraph 40) established the principle of Buffer Zones around permitted and allocated mineral extraction sites. Development plans are required to indicate the boundary of the buffer zone. Within the buffer zone, no new sensitive development or mineral extraction should be approved. Sensitive development is any building occupied by people on a regular basis and includes housing areas, hostels, meeting places, schools and hospitals where an acceptable standard of amenity should be expected. Sensitive development could also include specialised high technology industrial development where operational needs require high standards of amenity.

71. The objective of the buffer zone is to protect land uses that are most sensitive to the impact of mineral operations by establishing a separation distance between potentially conflicting land uses. Research[44] has indicated that people living close to mineral workings consider dust to be the main impact of mineral extraction and any processing operations, followed by traffic, and noise and vibration from blasting. After careful consideration, including consultation with a number of interested and informed parties, the Welsh Assembly Government takes the view that the following minimum distances should be adopted unless there are clear and justifiable reasons for reducing the distance. An example may be that, because of other means of control, there is very limited impact from the mineral extraction site.

Mineral Extraction Type	Minimum Distance
Sand and gravel (and others where no blasting is permitted)	**100 metres**
Hard rock quarries	**200 metres**

The buffer zone should be defined from the outer edge of the area where extraction and processing operations will take place, including site haul roads, rather than the site boundary, as there may be land within site boundaries where mineral activities are limited or no operations are proposed so that the impact of the proximity of such land is negligible. Where mobile plant is likely to be used it will usually be necessary to control by planning conditions the location of the operational area where plant may operate in order to maintain the buffer zone and thus protect amenity.

Dust

72. Dust is a generic term used to describe particulate matter which may be found resting on the ground or other surfaces, but is capable of becoming airborne to disperse in the atmosphere before returning to the surface. It is defined in BS 6069 (Part 2)[45] as particulate matter in the size range 1-75 microns in diameter. It is produced at minerals extraction sites during a range of activities; site preparation, excavation, transportation and processing

[44]The Environmental Effects of Production Blasting from Surface Mineral Workings, DETR, 1998
[45] British Standards Institution, Glossary of Terms, BS 6069 (Part 2), 1987

operations. When dust becomes airborne, it is referred to as dust emission. A number of factors are important in relation to aggregates extraction and processing; for example, rainfall decreases emissions; wind speed and direction may increase or decrease the impact of dust on a particular area; topography and vegetation may also have an effect. The type of mineral being extracted causes differences in the generation of dust: soft friable materials break apart easily and their extraction produces a greater amount of dust than harder, more cohesive materials. However, more energy and intensive processing are needed to produce saleable products of harder materials, and these operations produce significant quantities of dust. As well as these likelihoods, experience has shown that dust emissions can also result from:

- haulage, particularly on internal un-surfaced routes,on nearby roads which are not adequately wetted and if vehicles are un-sheeted;
- crushing and grading operations;
- blasting, including drilling operations prior to blasting;
- surface stripping, including soil and overburden storage;
- restoration operations.

Further details of the potential for dust emissions from mineral working activities are contained in the Best Practice Guide to Dust and Mineral Operations[46].

73. The main potential effects of dust and dust emissions are:

- Their impact on air quality and human health (see paragraph 75 below);
- The physical need for cleaning, and the soiling of surfaces;
- The contamination of soils and vegetation, impacting on agriculture and/or ecology;
- The contamination of water courses;
- Visual – in terms of dust plumes and reduced visibility.

74. Particulate air pollution is associated with a range of effects on health including those on the respiratory and cardiovascular systems, asthma and, even, mortality. Particles of less than 10 microns in diameter (known as the PM_{10} fraction) can enter the respiratory system and are thought to be responsible for these health effects. The Expert Panel on Air Quality Standards (EPAQS) first considered particles in its report published in November 1995[47]. They concluded that particulate air pollution is responsible for causing excess deaths among those with pre-existing lung and heart disease, and that there is a relationship between concentrations of PM_{10} and health effects such that the higher the concentration of particles, the greater the effect on health. Since then the Panel has considered whether finer particles, perhaps $PM_{2.5}$ or smaller, may be more representative of that

[46]Environmental Effects of Dust from Surface Mineral Workings, DoE, (Arup Environmental/Ove Arup and Partners), 1995

[47]Expert Panel on Air Quality Standards; Particles, November 1995

part of the total particle mix that is responsible for its harmful effects on health. In its report published in April 2001[48], the Panel concluded that on existing evidence, measurement of PM_{10} which includes essentially all respirable particles, provides the most appropriate basis for an air quality standard in the United Kingdom.

75. Where dust is demonstrated to have the potential to affect the use of land the Welsh Assembly Government takes the view that it is a material planning consideration. Part IV of the Environment Act 1995 requires all local authorities to undertake regular reviews and assessments of air quality (including PM_{10}) in their areas. The Better Health Better Wales Strategic Framework sets out the Assembly's plans and priorities for action to improve the health of the people of Wales. It makes a clear commitment to develop the use of health impact assessment in Wales[49]. **The potential impact on health must always be considered in relation to proposals for aggregates extraction and a health impact assessment should be carried out for any proposal for a new quarry or sand and gravel pit located within one kilometre of an existing community**.

76. Planning conditions can control certain activities to protect against dust emissions although many of these are controlled under the Environmental Protection Act 1990, and care should be taken to avoid duplication of controls. The Act provides for industrial premises to be regulated by the Environment Agency and local authorities under the Integrated Pollution Control (IPC) and Local Air Pollution Control (LAPC) regimes. The Integrated Pollution Prevention and Control (IPPC) Regulations being phased in gradually on an industry sector by sector basis between 2000 and 2007, will eventually replace the IPC and LAPC regimes and will apply an integrated environmental approach to the regulation of industrial activities. IPPC aims to prevent emissions and waste production and, where that is not practicable, reduce them to acceptable levels.

77. **Planning conditions can impose:**

- measurable performance requirements - the means of achieving these requirements should be left to the operator;
- an adequate and appropriate monitoring scheme of the environmental consequences of aggregates extraction. In some cases, periodic checks may be sufficient but in others, continuous monitoring and regular audit reports may be necessary. Access to monitoring locations must be available to the operator;
- ameliorative measures to mitigate impacts, such as the provision of wheel-wash facilities, road cleansing, speed restrictions, sheeting of vehicles;
- working programmes/site design and layout - location of dust emission sources away from sensitive development, protection of

[48]Expert Panel on Air Quality Standards; Airborne Particles: What is the most appropriate measurement on which to base a standard? April 2001
[49]Better Health Better Wales: Developing health impact assessment in Wales, National Assembly for Wales, 1999

loading/unloading activities and materials storage areas, control of soil handling and overburden stripping including timing to suit weather conditions.

Impact of Blasting Operations – vibration and fly-rock

78. Production blasting can result in impacts that extend well beyond the extraction site. This is likely to cause concern to neighbours and results from:

- ground vibration –these are stress waves generated within the ground by the detonation of explosive charges. Sometimes these are reported by individuals but usually the levels of vibration generated by mineral workings are well below those required to cause structural damage to properties;
- air overpressure –a pressure wave is formed in the atmosphere by the detonation of explosives, this consists of energy manifested as audible (noise) and inaudible (concussion);
- noise – audible noise is atmospheric pressure variations at frequencies greater than 20Hz (hertz);
- dust; and,
- fly-rock – the projection of material from the blast site to any area beyond the designated danger zone.

79. Ground vibration: It is often difficult to reconcile the needs of efficient and economic mineral extraction with the comfort and amenity of neighbours, particularly where quarries are located close to buildings that are sensitive to vibration such as residential properties. Research[50] has shown that the vibration levels at which complaints are made varies significantly and that long established sites with a good relationship with neighbouring communities are far less likely to attract complaints from local residents. Mineral planning authorities and site operators have accepted the need for more definitive advice to ensure a more consistent approach to controlling ground vibration and responding to complaints from neighbours. This is therefore set out below.

80. Ground vibration is recorded in terms of particle velocity with the maximum or peak value measured in 3 orthogonal directions at any one location – so-called longitudinal, vertical and transverse. The measurement of peak particle velocity (ppv) is the accepted standard for recording vibration levels together with frequency content. The typical range of ground vibration frequency for surface mineral workings is 5 to 40 Hz with values predominantly from 20 to 30 Hz for hard rock quarries. Although sensitivity to vibration varies between individuals, a person will generally become aware of blast induced vibration at around 1.5 mms^{-1} ppv (in some circumstances at levels as low as 0.5 mms^{-1} ppv). Public concern often relates to the potential for vibration to cause damage to property. British Standards[51] specify guide values to preclude damage to various building types from blast induced

[50]The Environmental Effects of Production Blasting from Surface Mineral Workings, DETR, (Vibrock Ltd), 1998

[51]BS 7385: Evaluation and Measurement for Vibration in Buildings Part 2: 1993 Guide to damage levels from groundborne vibration. British Standards Institute

Appendix KEH3

Extract of RCT Local Development Plan: Policy AW10 – Environmental Protection and Public Health

Rhondda Cynon Taf Local Development Plan up to 2021 Adopted March 2011

Jane Cook
Director of Regeneration & Planning

Simon Gale
Service Director Planning

5.61 Where significant alteration in the character of the existing building is proposed, or where the buildings are so derelict that substantial or complete rebuilding is required, this will be treated as a new development in the countryside.

5.62 The character of new works could be traditional or contemporary provided they are rural in character and compatible with the existing character of the building. When converting rural buildings the presence of bats and owls may be an issue and must be thoroughly investigated. Design revisions may be required as a result of relevant investigations. Appropriate "community uses" include village halls, religious uses and community centres. Retail uses would not be permitted under AW 9.

Policy AW 10 - Environmental Protection and Public Health

Development proposals will not be permitted where they would cause or result in a risk of unacceptable harm to health and / or local amenity because of:-

1. Air pollution;
2. Noise pollution;
3. Light pollution;
4. Contamination;
5. Landfill gas;
6. Land instability;
7. Water pollution;
8. Flooding;
9. Or any other identified risk to the environment, local amenity and public health or safety

unless it can be demonstrated that measures can be taken to overcome any significant adverse risk to public health, the environment and / or impact upon local amenity.

5.63. Pollution may cause significant damage to human health, quality of life and residential amenity, as well as impact upon both the natural and built environment. This policy will ensure that developments that would result in unacceptably high levels of noise, light, water and / or air pollution are located away from residential areas and other sensitive uses. The policy will also ensure that new development is not located in close proximity to existing sources of pollution. Amenity is defined as the pleasant or satisfactory aspects of a location, or features which contribute to its overall character and the enjoyment of residents or visitors.

5.64 In November 2007, the Council declared eight Air Quality Management Areas (AQMA), two in the Northern and six in the Southern Strategy Area. The 8 AQMAs are shown on the constraints map and are subject to regular review. Where the Council considers a development may impact upon an existing AQMA or may exacerbate an existing problem, the submission of an assessment setting out the impacts of the development on air quality and outlining appropriate mitigation measures may be required.

5.65 The environment includes the water environment. Climate change, increases in population and changes in lifestyle have all had an impact upon the water environment and the pressures upon it. Climate change will affect the amount of rain that falls, it will impact upon river flows, replenishing of groundwater, the quality of water available and incidents of flooding, particularly localised flash flooding. The demands and pressures on water resources will also change. The approach to the protection of the water environment will need to take into account the quality and quantity of the local water resource and how both will impact upon the wider environment. Such impacts are to prevent further deterioration of aquatic ecosystems, associated habitats, fisheries, promoting the sustainable use of water and controlling water abstractions.

Appendix KEH4

Extract of RCT 2021 Air Quality Progress Report, October 2021

CYNGOR BWRDEISTREF SIROL RHONDDA CYNON TAF

RHONNDA CYNON TAF COUNTY BOROUGH

2021 Adroddiad Cynnydd o Ansawdd Aer

Hydref 2021

2021 Air Quality Progress Report

October 2021

Wrth gyflawni Rhan IV o Ddeddf yr Amgylchedd 1995
Rheoli Ansawdd Aer Lleol

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management

between the measured results and the associated AQOs. This clear margin is of importance, as it is recognised the monitoring location may not be at the worse-case location.

With monitoring at Site No. 31 (GEAES TEOM) discontinued, there is no continuing long term PM_{10} data set for the Rhondda Cynon Taf urban environment. However, local and national understanding does not suggest a likelihood of a significant change in the occurrence of PM_{10} within Rhondda Cynon Taf. On the basis of the above analysis, it is considered that most areas of Rhondda Cynon Taf are likely to continue to observe low PM_{10} annual means and limited incidences of exceedences of the 24-hour daily mean AQO for PM_{10}. This is likely to be moderately affected by yearly changes in climate and meteorology but as the expected annual mean for PM_{10} is consistently significantly below the annual mean AQO for PM_{10}, it is very unlikely such fluctuations will pose a risk to compliance. Therefore, the risk of breaching the annual mean AQOs for PM_{10} within the general urban environment of Rhondda Cynon Taf is very low.

Although it remains difficult to predict a future trend at Glyncoch it appears that, at present the location remains compliant to the annual mean and the 24-hour daily mean AQOs for PM_{10}. Furthermore, the available evidence may suggest that the levels of PM_{10} have improved in recent years potentially corresponding to known improvements to the control of Particulate Matter emissions from Craig Yr Hesg Quarry. Nonetheless, sustained climatic events, for instance a protracted dry summer period, may threaten continued improvement, as indicated by the 2018 results. Therefore, continued monitoring is necessary to ensure any future changes which have the potential to impact on the local prevalence of PM_{10}, most notably the possible implementation of the proposed extension of Craig Yr Hesg Quarry, can be fully considered.

4.3.5 Particulate Matter [$PM_{2.5}$]

Due to the transboundary nature of $PM_{2.5}$ and, at present, lack of relevant AQO with respect of Local Air Quality Management, the Local Authority did not undertake the monitoring of $PM_{2.5}$ in 2020 and, currently, is not planning to undertake the monitoring of $PM_{2.5}$ in the near future.

The Local Authority continually keeps under review the monitoring it plans to undertake in accordance with its Local Air Quality Management duties. Should circumstances change or a statutory requirement develop, then it may reconsider the appropriateness of $PM_{2.5}$ monitoring in the future, whilst acknowledge any consideration will have to have regard to the availability of resources which may be necessary to facilitate such action.

4.4 Summary of Compliance with AQOs as of 2020

Rhondda Cynon Taf County Borough Council has examined the results from monitoring within its area. Given inherent uncertainties associated with 2020 and concentrations of NO_2 within the sixteen AQMAs are still at risk of exceeding, the relevant AQOs for NO_2. As such, **all sixteen AQMAs should remain**.

The level of NO_2 outside of the current sixteen AQMAs and levels of PM_{10} throughout Rhondda Cynon Taf are likely to be below their relevant AQOs, therefore **no additional action is required at this time**.

Appendix KEH5

SGP 2020-2021 PM_{10} Monitoring Report

Partnership No: OC 300776

Craig yr Hesg Quarry, Pontypridd

Review of PM10 Monitoring Data:

14th November 2020 to

14th November 2021

for: Hanson UK Ltd

May 2022

R2613B-R05-v3

Smith Grant LLP, Station House, Station Road, Ruabon, Wrexham, LL14 6DL
tel: 01978 822367 fax: 01978 824718 e-mail: consult@smithgrant.co.uk web: www.smithgrant.co.uk
Members: K E Hawkins (Chairman), D Wayland, A F Smith

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PM10 Monitoring Review:
14th November 2020 to 14th November 2021

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	Name	Position	Signature	Date
Drafted By	D Lloyd BSc MSc	Consultant	pp	03.05.22
Checked	K E Hawkins BSc MSc CEnv MIEMA MIAQM	Chairman		03.05.22

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Contents

Figures

Appendices

1. Introduction

1.1. Hanson UK (Hanson) operates a sandstone quarry and associated processes at Craig Yr Hesg, Ynysybwl Road, Pontypridd, South Wales.

1.2. The northern side of the quarry includes the quarry haul route and Primary Crusher Feed Hopper which have previously been identified as potentially significant dust sources requiring control. The Glyncoch housing estate, which lies beyond the northern boundary of the quarry, is considered a potentially sensitive receptor with respect to fine particulate (PM_{10}) emissions to atmosphere given the proximity of the quarry.

1.3. In 2009 Smith Grant LLP (SGP) was instructed by Hanson to review dust emissions from the site and make recommendations for improvement measures as part of the Review of Minerals Permissions (ROMP) application being submitted by Hanson to the mineral planning authority, Rhondda Cynon Taff Borough Council (RCT). As part of the dust emissions review Hanson commenced airborne particulate (PM_{10}) monitoring at the site. The subsequent ROMP Consent Notice, Ref. 08/1380/10, dated 24th April 2013, included Condition 32 requiring the provision for a further 12-month programme of airborne particulate (PM_{10}) monitoring following the implementation of improved dust control measures at the quarry. Hanson has since voluntarily continued to monitor airborne particulates at the site.

1.4. SGP has subsequently produced a series of reports presenting the results of the airborne particulate monitoring as summarised in Section 2. This following report presents the results of the PM_{10} monitoring for the 12-month period 14th November 2020 to the end of 14th November 2021.

1.5. It should be noted that this report spans a period of monitoring affected by the global pandemic of the Coronavirus disease[1]. As such any comparison of data for this period with previous data should be treated with caution.

[1] COVID-19: Following the outbreak of a global pandemic of the Coronavirus disease 2019 (COVID-19) due to the SAR-CoV-2 virus, the UK Government declared several restrictions on non-essential travel and movements from 23rd March 2020 onwards. Some of these restrictions remained in place across the period of time covered by this report with resulting implications on the on travel movements and local air quality.

2. Previous Reporting

2.1. As part of the ROMP application, Smith Grant LLP (SGP) was instructed by Hanson to review dust emissions from the site and make recommendations for improvement measures. The results of airborne particulate monitoring over the period January 2010 to November 2013 were reported in two SGP reports, as detailed below:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: January 2010 to March 2012, dated May 2012 (ref: R1337-R04-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 14th March 2012 to 14th November 2013, dated February 2014 (ref: R1337-R07-v2)

2.2. The new planning conditions for the site imposed following the ROMP review included the provision for a 12-month programme of PM_{10} dust monitoring on completion of the implementation of improved dust control measures at the quarry. These measures were implemented over the period up to 15th November 2013. This date is held to be the start of the 12 months monitoring required under ROMP Planning Condition 32. The results of the 12 months of monitoring required under the Condition were reported in:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 15th November 2013 to 14th November 2014, dated September 2015 (ref: R1337-R08-v3)

2.3. Hanson voluntarily continued to monitor airborne particulates at the site and instructed SGP to prepare further annual PM_{10} monitoring reports. Reports have subsequently been produced on an annual basis as detailed below:

- Craig yr Hesg Quarry, Pontypridd, Review of PM_{10} Monitoring Data: 15th November 2014 to 14th November 2015, dated February 2017 (ref: R1337-R09-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2015 to 14th November 2016, dated February 2017 (ref: R1337-R010-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2016 to 14th November 2017, dated November 2018 (ref: R2613B-R01-v2)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 15th November 2017 to 14th November 2018, dated August 2019 (ref: R2613B-R02-v3)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 14th November 2018 to 14th November 2019, dated January 2021 (ref: R2613B-R03-v1)
- Craig yr Hesg Quarry, Pontypridd, Review of PM10 Monitoring Data: 14th November

3. Data Sources

3.1. On-Site PM_{10} Monitoring Apparatus

3.1.1. Monitoring of fine particulates (PM_{10}) has continued to be conducted on-site using DustScan DS500 equipment. This provides a gravimetric measurement of filtered PM_{10} from the atmosphere pumped through the equipment during the monitoring period, which is typically designed to be a 1-week period. The PM_{10} concentration is expressed as a daily average, which must be regarded as indicative for the purposes of assessment. The method is not an approved European Reference Method[2] and the results cannot be directly compared to the national air quality standards for PM_{10}s which are expressed as an annual average (40 µg/m^3) and a maximum number of exceedances of the 24- hour mean PM_{10} concentration (35 days exceeding 50 µg/m^3).

3.1.2. The monitoring unit is located on the northern side of the quarry between the primary crusher feed hopper and main haul road to the south of the unit and residential properties in Glyncoch Estate to the north. The location is shown in Drawing D01. It has previously been agreed between Hanson and RCT that this location reflects the most sensitive part of the site due to the proximity between a key potential dust source and sensitive residential receptors. Southerly winds would be expected to carry any PM_{10} emissions from the quarry processing plant both to the monitor and towards the estate beyond. Southwesterly winds could carry particulates from the main quarry haul road leading to the feed hopper.

3.1.3. The DustScan unit collects gravimetric samples over periods of up to one week and is designed for low maintenance battery operation. The PM_{10} mass collected over the period of operation is divided by the number of days within that period in order to obtain a daily average figure.

3.1.4. A review of the PM_{10} monitoring equipment by DustScan in July 2019 determined that the unit may not have been correctly sealing, potentially resulting in an over-estimation of PM_{10} concentrations (i.e. through the sampling of Total Suspended Solids rather than PM_{10}). The equipment was subsequently repaired to ensure correct sampling into the future.

3.1.5. The unit is usually operated together with a vertical 360° "sticky strip" directional deposition monitor. This assesses dust deposition rates and source direction based on optical scanning to quantitatively measure dust soiling of the strip across 15° sectors over a period. The method is designed primarily to respond more to the coarser "nuisance" particulates that are likely to settle out closer to a source than the PM_{10} fraction, and whilst the gauge can provide an indication of

[2] As specified by BS EN 12341:1999, revised 2014 “Ambient air. Standard gravimetric measurement method for the determination of the PM_{10} or $PM_{2,5}$ mass concentration of suspended particulate matter”

the direction towards dust sources, they may not necessarily indicate accurately the source directions or amounts of the finest particulates.

3.2. Onsite Data Coverage

3.2.1. A total of 37 DustScan data reports have been produced over the period 14th November 2020 to 14th November 2021. Monitoring rounds do not precisely coincide with these dates, so the closest relevant dates for start and completion of the 12-month monitoring period are 14th November 2020 to 18th November 2021, with an overall interval of 369 days.

3.2.2. Site management has advised that the site was not closed due to the coronavirus pandemic[1] during this period. The site was closed, as usual, for several days across the Christmas 2020 / New Year 2021 period.

3.2.3. Monitoring has been carried out over a total of 238 days, amounting to a capture rate of 64.5% over the period. Gaps in coverage arise for various reasons including equipment failures and / or quarry stoppages. Data gaps are discussed further in Section 4.

3.3. Local / Regional Air Quality

3.3.1. PM_{10} concentrations vary considerably over time as a result of the contribution of natural and remote sources and the influence of weather, with high concentrations typically associated with high pressure weather systems and easterly airflows, particularly in winter months when natural dispersion of industrial, transport and domestic sources can be low and sources from solid and liquid fuel heating emissions can be high.

3.3.2. Where elevated concentrations of PM_{10} have been recorded by the DustScan station at the quarry, the data have been compared to available and appropriate data from local and regional automatic monitoring stations. These other data sources have also been referred to provide information where there are gaps in the DustScan data. Details of these stations are discussed below.

Upper Garth Avenue, Glyn Coch

3.3.3. RCT conducts airborne particulate (PM_{10}) monitoring in the residential area of Garth Avenue, Glyn Coch Estate as part of RCT's local monitoring network in accordance with its duties under Local Air Quality Management (LAQM). The primary monitoring station is Site 130 (Upper Garth Avenue) which uses a TEOM FDMS, an approved European Reference Method, and which has been operating since 16th July 2014. Site 130 recorded data throughout the monitoring period relevant to this report.

3.3.4. Data from Site 130 at Upper Garth Avenue has been obtained from the Air Quality in Wales website (https://airquality.gov.wales) through the data selector tool; this data is provided in

hourly averages validated to the end of the period. Data up until 1st July 2021 has been validated; the remainder for the period of interest is provisional.

3.3.5. In accordance with LAQM TG16 Chapter 7[3], erroneous data from particulate monitoring instruments should be disregarded before undertaking data interpretation. From instruments that produce data on a 1-hour basis, 24-hour averages are only valid when calculated from at least 18 valid 1-hour averages i.e. days with at least 75% data capture.

3.3.6. The data capture rate at Upper Garth Avenue across the 14th November 2020 to 18th November 2021 period is detailed in the table below.

Table 3.1: Data Capture at Automatic Monitor (14/11/20 – 18/11/21)

Monitor	Days with < 75% data capture	Data capture for period (%)	Annual PM_{10} mean ($\mu g/m^3$)
RCT Upper Garth Avenue (Site 130)	2	99.9	11.20

3.3.7. The data capture rate across the assessment period at Upper Garth Avenue was greater than that required under the LAQM regime for assessment against the UK objectives.

3.3.8. A second 'indicative' monitor is located at Site 109 on Lower Garth Avenue. Data from Site 109 is not available from the Air Quality in Wales website and is consequently not included for detailed analysis in this report.

Cardiff Centre and Newport

3.3.9. Monitors operated at Cardiff Centre and Newport are both part of the Automatic Urban and Rural Network (AURN) and are categorised as Urban Background sites. Details are provided below:

Table 3.2: Regional PM_{10} Monitoring Sites

Site Name	Ref	Type	Grid Reference; Altitude	Lat, Long	Distance (km), Orientation from Site
Cardiff Centre	UKA00217	AURN, Urban Background	318416, 176526; 12m aod	51.481780, -3.176250	18.6km SE
Newport	UKA00380	AURN, Urban Background	332410, 189604; 24m aod	51.601203, -2.977281	24.3km ESE

[3] Department for Environment, Food and Rural Affairs (Defra), Local Air Quality Management, Technical Guidance (TG16), February 2018

3.3.10. The Cardiff station is located on Frederick Street in the centre of Cardiff in a pedestrianised shopping area, surrounded by retail and business premises. The nearest busy road is approximately 200m west of the station.

3.3.11. The Newport station is located within the grounds of St Julian's School on the outskirts of Newport and lies about 60m from the M4.

3.3.12. Monitoring data from Cardiff Centre and Newport for 2020 and 2021 has been obtained from the Air Quality in Wales website through the data selector tool. Data for both sites is verified until 1st October 2021. Comparison of the site data to the monitored data available from Cardiff Centre and Newport enables examination of the possibility that any raised concentrations are due to regional or national pollution episodes rather than local pollution episodes.

National Reports

3.3.13. Each year the UK is required to submit air quality data to the European Commission to assess compliance with European Directives on air quality. The latest UK submission for 2020[4] has been referred to for further information regarding national pollution events over some of the reporting period.

3.4. Meteorological Records

3.4.1. An automatic site weather station is installed close to the primary crusher feed hopper, and provides hourly measurements of temperature, atmospheric pressure, humidity, rainfall and wind speed and direction. Wind speed and direction data is available for the entire of the period.

3.5. Data Analysis Tools

3.5.1. The computer software R has been used to carry out data analysis of the monitoring data from Garth Avenue and Cardiff Centre through use of dedicated functions written to analyse air pollution data in the R 'package' called OpenAir[5,6].

[4] Defra, Air Pollution in the UK 2020, September 2021 available at: https://uk-air.defra.gov.uk/library/annualreport/index
[5] Carslaw, D.C. and K. Ropkins, (2012). openair — an R package for air quality data analysis. Environmental Modelling & Software. Volume 27-28, pp. 52–61.9.9
[6] Carslaw, D.C. (2018). The openair manual — open-source tools for analysing air pollution data. Manual for version 2.2-4, University of York.

4. Results and Interpretation

4.1. Site Annual PM_{10} Monitoring Results

4.1.1. All available DustScan PM_{10} data reports for the period are included as Appendix A.

4.1.2. The DustScan monitored PM_{10} results are summarised below and compared against Air Quality Objectives (AQOs) (40 µg/m^3 annual average; up to 35 exceedances of 50 µg/m^3 24 hour mean per annum):

Table 4.1: Summary of Site PM_{10} Results, 14 November 2020 to 14 November 2021

	value	comment	previous period (Nov 19- Nov 20)
no. of records	37 (covering 238 days)	data capture 64.5% (period spans 369 days)	28 (covering 176 out of 370 days)
concentration average of results (µg/m^3)	11.82	29.5 % of AQO	13.44 (33.6% of AQO)
concentration, as time-weighted average[1] (µg/m^3)	12.07	30.3 % of AQO	12.6 (34.1% of AQO)
maximum concentration (µg/m^3)	20.84	averaged over 7 days	51.7
number of results > 50 µg/m^3	0	does not extrapolate to AQO as averaging effect of extended monitoring periods will smooth out daily highs and lows	1
number of days within rounds of >50 µg/m^3	0		3.9
number of results between 30 and 50 µg/m^3	0	30 µg/m^3 threshold for weekly monitoring is suggested as indicative that some daily averages within a typical weeks monitoring might exceed 50 µg/m^3	1
number of days within rounds of >30 µg/m^3 <50 30 µg/m^3	0		4.0

1: the sum of the products of each monitoring result and monitoring duration, divided by the total time monitored

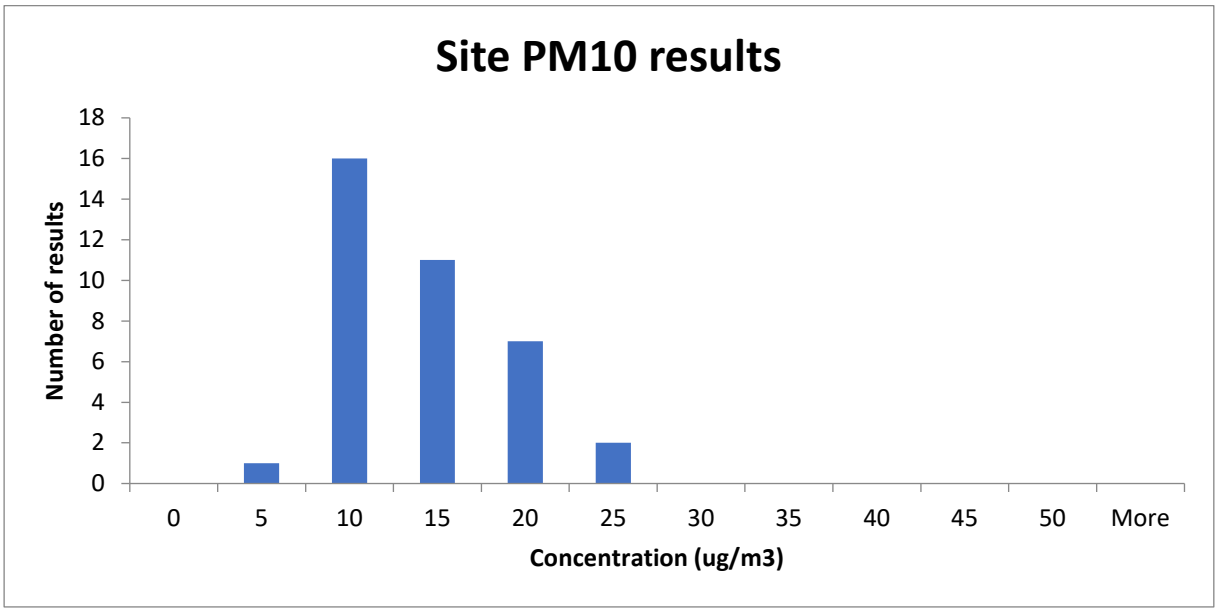


Figure 1: Frequency Distribution of Results

4.1.3. The Air Quality Pollution banding system, also known as the Daily Air Quality Index (DAQI) rates daily recorded PM_{10} levels on a 1 (Low) to 10 (Very High) scale. The DustScan results for the year indicate PM_{10} levels to fall within the Low (1-3) Band (<50 µg/m^3 for PM_{10} particles), indicating no long-term significant pollution or risk to public health.

4.2. Site Monitored Short-term Pollution Episodes

Onsite Peak Periods

4.2.1. The individual DustScan reports present average values over the monitoring period, which normally extends to 1 week. They can therefore only provide an indication as to the possible frequency of exceedances of the 24-hour target of 50 µg/m^3. Where the 50 µg/m^3 limit is exceeded within the weekly average then it is likely that the 24-hour target would have been exceeded over more than one day. The conservative assumption would be that the exceedance occurred on every day of the monitoring period.

4.2.2. Because the DustScan results are average to daily figures, it is also probable that for monitoring rounds that record over, say 30 µg/m^3, there could have been one or more days when PM_{10} concentrations would have exceeded the 50 µg/m^3 24-hour limit, particularly since weekend concentrations are usually relatively lower than weekday levels and would reduce the overall average concentration.

4.2.3. No monitoring round had daily average concentrations either in excess of the 50 µg/m^3 limit or between 30-50 µg/m^3. There were therefore no on-site 'peak' periods or Episodes requiring further assessment.

Site data gaps of more than 1 day

4.2.4. Gaps in on-site data coverage of a day or more are listed below in Table 4.2. Where on-site data gaps of 1 day or more occur, the RCT Garth Avenue data has been reviewed to determine any potential exceedances of the 24-hour air quality objective. When site data gaps coincided with instances where the Upper Garth Avenue monitor was non-operational this has also been noted.

Table 4.2: Gaps of more than 1 day in site data coverage over the monitoring period

start	end	days	average RCT Upper Garth Avenue data over period[1]
01/12/20	03/12/20	1.8	12.7 µg/m^3, no 24-hour exceedances
07/12/20	07/01/21	31.4	9.38 µg/m^3, no 24-hour exceedances
14/01/21	21/01/21	7.0	7.22 µg/m^3, no 24-hour exceedances
22/01/21	28/01/21	6.3	13.5 µg/m^3, no 24-hour exceedances
11/02/21	18/02/21	7.0	27.9 µg/m^3, 2 exceedances of 24-hour limit
08/04/21	29/04/21	21.0	16.8 µg/m^3, no 24-hour exceedances
06/05/21	20/05/21	13.9	16.8 µg/m^3, no 24-hour exceedances
27/05/21	10/06/21	14.1	9.1 µg/m^3, no 24-hour exceedances
24/06/21	01/07/21	7.2	9.5 µg/m^3, no 24-hour exceedances
15/07/21	22/07/21	7.0	14.4 µg/m^3, no 24-hour exceedances
11/09/21	16/09/21	5.0	10.8 µg/m^3, no 24-hour exceedances
21/10/21	28/10/21	7.0	7.0 µg/m^3, no 24-hour exceedances
Total		~133	

1: RCT data is average of 24-hour averages for the whole days covered by the site data gaps; where valid 24-hour averages have been calculated in accordance with Defra LAQM TG16 (>75% valid data capture)

4.2.5. Data is available for the RCT Upper Garth Avenue monitor for all occasions in 2020-21 when on-site data is not available. The data indicates that there were two occasions when the daily mean level of PM_{10} at Garth Avenue breached the 24-hour limit of 50 µg/m^3 during the gaps in the site monitoring. This is discussed further below.

4.3. RCT Garth Avenue Monitoring

4.3.1. As noted in section 3.3.3, data from RCT Site No. 130 (Upper Garth Avenue TEOM FDMS) were available throughout the period.

4.3.2. Overall, this is a data capture rate of 98% over the monitoring period. The mean PM_{10} concentration over this period was 11.2 µg/m^3, 28% of the annual average AQO. This value is lower than the site monitoring time-weighted average of 12.1 µg/m^3 over this same period.

4.3.3. Figure 5 shows the daily mean PM_{10} concentration for each day at Upper Garth Avenue throughout the period the monitor was operating. The data are shown as calendar plots, only valid 24-hour averages are shown.

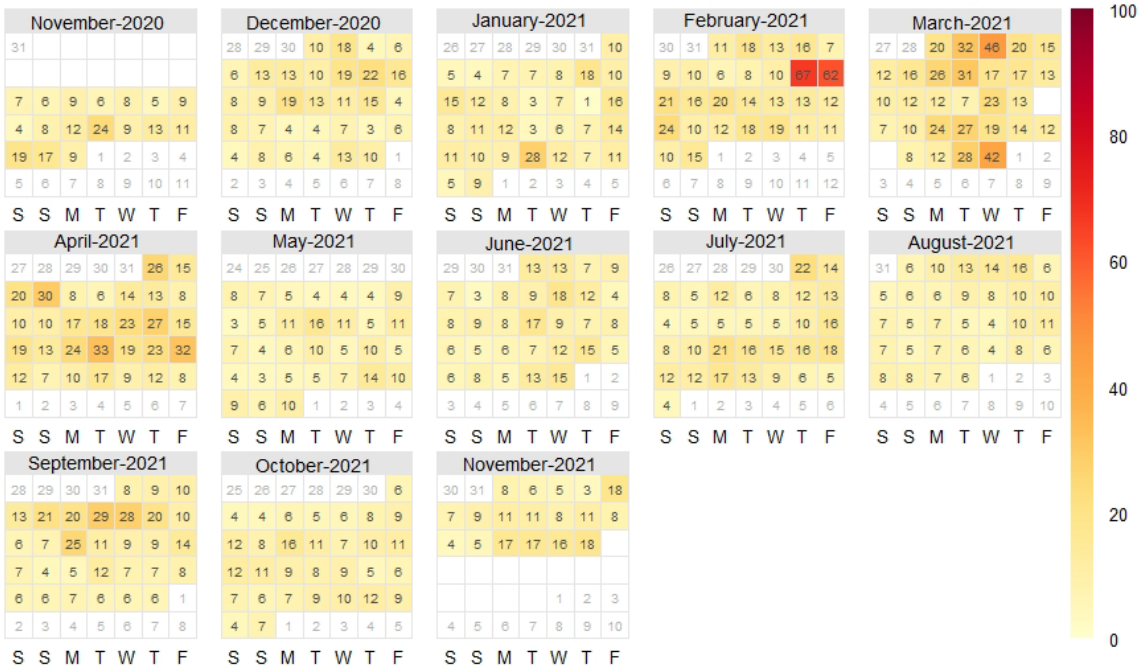


Figure 5: Calendar Plot of Daily PM_{10} values at Upper Garth Avenue from 14th November 2020 - 18th November 2021

4.3.4. A total of 2 days exceeded the 50 µg/m^3 24-hour mean PM_{10} limit, which is 6% of the 35 days exceedance per annum established under the AQO.

4.3.5. Both exceedances correspond with gaps in the on-site DustScan data. However, some data are available for Cardiff and Newport for these events and the equivalent calendar plots for these data are included in Figure 6(i) and (ii).

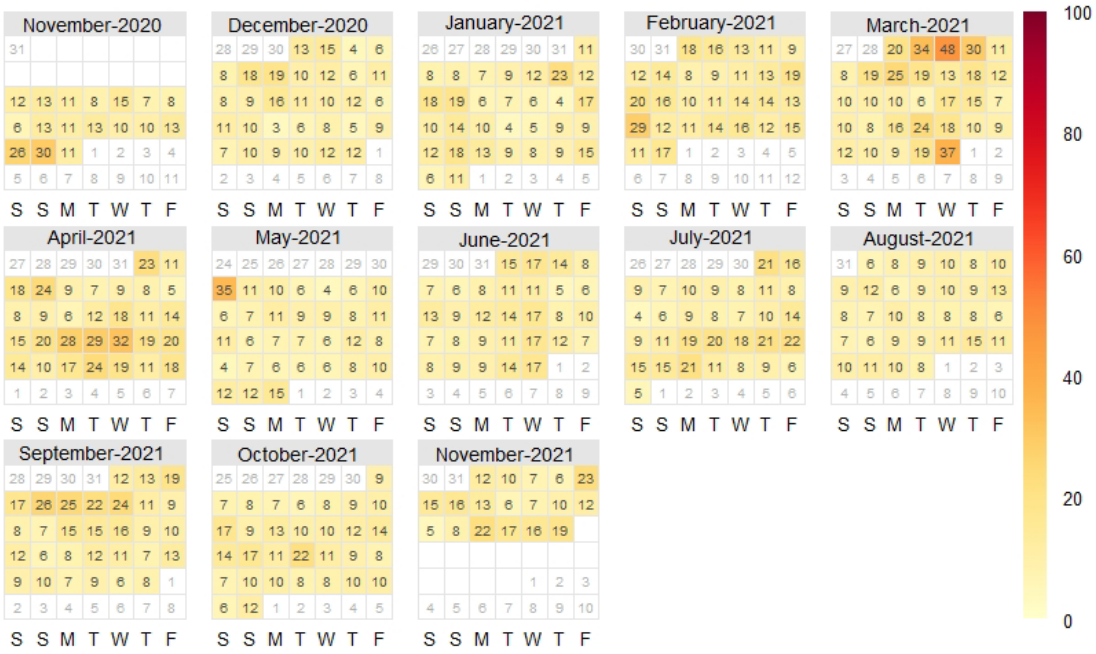


Figure 6(i) Calendar plot of data from Newport.

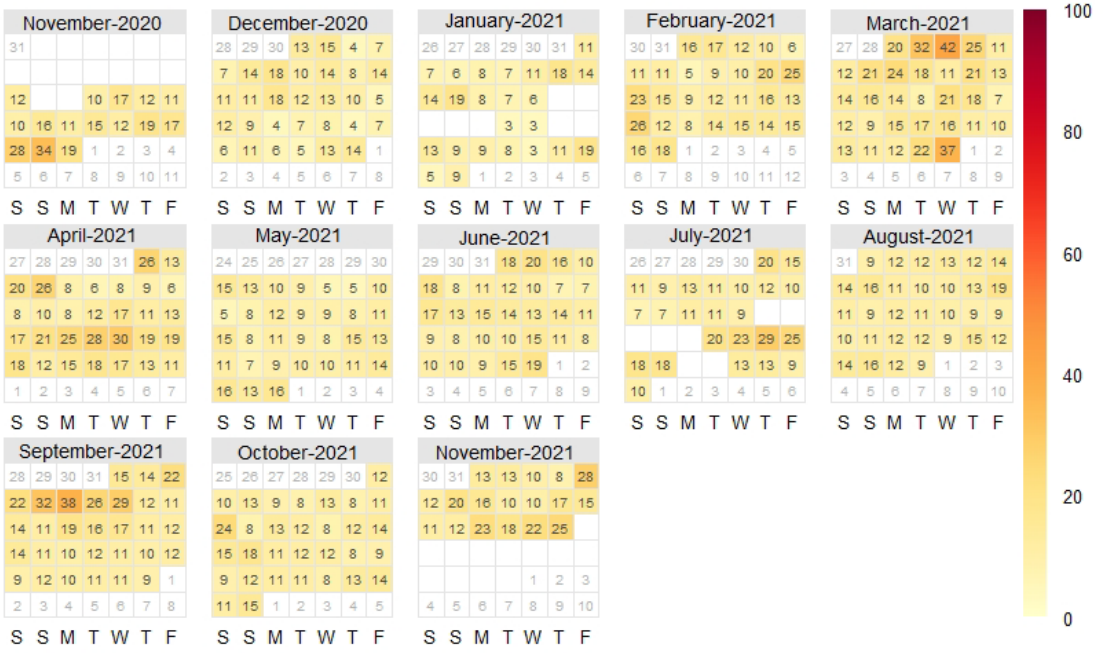


Figure 6(ii) Calendar plot of data from Cardiff Central.

4.3.6. The available data is summarised in Table 4.3.

Table 4.3 Review of Upper Garth Avenue 24-hour exceedances

date	Mean 24 hour concentration (µg/m^3)	Comments
11.02.21 (Thursday)	67	Concentrations rise steeply from 08:00 (16 µg/m^3) to a peak of 192 µg/m^3 at 15:00; concentrations fall to below 50 µg/m^3 at 21:00; this period is associated with moderate SE and ESE winds and sub-zero temperatures; no corresponding increase observed at Newport although the Cardiff data does exhibit a slight increase over this period. Site measured directional dust recorded 'high' to 'very high' dust impacts risk over 11.02.21 to 18.02.21.
12.02.21 (Friday)	62	Concentrations rise steeply from 08:00 to a peak of 159 µg/m^3 at 13:00. This was followed by a slight fall during the course of the afternoon before a second peak of 165 µg/m^3 at 18:00 and sharp fall to below 50 µg/m^3 at 20:00. As in the previous day the wind was from the SE and ESE with similar windspeeds and temperatures hovering around freezing; no corresponding increase observed at Newport although the Cardiff data does exhibit a slight increase over this period.

4.3.7. For these two exceedances observed at Upper Garth Avenue there are no corresponding increases in PM_{10} concentrations seen in the Newport data and the data from Cardiff only exhibits a slight increase.

4.3.8. The above exceedances corresponded with SE and ESE winds and freezing temperatures. It is noted that the PM_{10} concentrations across 12.02.21 demonstrate a 'diurnal' profile. On this day the elevated concentrations are between the hours of 08:00 and 20:00, with a dip between 14:00 and 19:00.

4.3.9. It is also noted that not all occasions of SE and ESE winds are associated with elevated particulate levels.

4.3.10. It is also noted that PM_{10} concentrations at Garth Avenue approached the 24-hour limit on 03.03.31 at 46 µg/m^3. Similar elevated concentrations were recorded on this date at both Newport (at 48 µg/m^3) and Cardiff (at 42 µg/m^3), suggesting a regional episode with N / NNE winds. A similar trend is observed on the day of next highest readings at Garth Avenue, 31.03.21 when the 24-hour concentration was 42 µg/m^3 at Garth Avenue and 37 µg/m^3 at both Newport and Cardiff.

4.3.11. The available data suggest that the quarry may contribute to local PM_{10} concentrations at Upper Garth Avenue, with other contributory sources, but that when elevated levels occur this may also be in combination with regional events.

4.3.12. The above occurrences are notable by their infrequent nature and are well below the limit of 35 days exceedance per annum under the AQO.

5. Summary and Conclusions

5.1. This report covers the period of 14th November 2020 to 14th November 2021. The monitoring period covers the period of the coronavirus pandemic[1] (first UK lockdown commenced 23rd March 2020 with subsequent restrictions in the months that followed) and as such the data should be treated with caution when determining any trends with preceding years. It is noted however that the site continued operating through-out the period of this report.

5.2. Site data capture for the period was 64.5% with gaps occurring at intervals spread across the monitoring period. Onsite meteorological data was collected for the entire period.

5.3. The site monitoring is supported by hourly PM_{10} concentration data captured by RCT at Upper Garth Avenue in proximity to the site. There was 98% data capture at Upper Garth Avenue over the monitoring period. The data has been processed and validated by RCT.

5.4. The available site monitoring indicates a time weighted annual average concentration of 12.1 µg/m^3 over the entire period, which is 30.3% of the national long-term air quality objective (AQO; 40 µg/m^3) established for the protection of human health. The available Upper Garth Avenue results produced an annual average of 11.2 µg/m^3, 28% of the annual average AQO for the latter part of the period.

5.5. The on-site monitoring generates results over typical periods of a week and cannot be used directly to estimate exceedances of the short-term AQO which is established as a 24-hour limit (50 µg/m^3; not to be exceeded more than 35 times per annum). A period average concentration in excess of 30 µg/m^3 has therefore been used as a threshold value to indicate that there could have been one or more days within the relevant DustScan monitoring period when the 24-hour limit could have been exceeded.

5.6. No on-site pollution episodes have been identified from the on-site monitoring data where concentration values in excess of 30 µg/m^3 were recorded.

5.7. Two exceedances of the 24-hour limit of 50 µg/m^3 were observed in the local authority data from Glyncoch across the period. This is well below the 35 exceedances per annum limit established as the AQO. These exceedances occurred on two consecutive days. A review of the results obtained for the AURN monitoring sites at Cardiff Central and Newport and on-site meteorological data would indicate that the elevated particulate concentrations on these occasions are of local origin rather than national or regional episodes.

5.8. The average results for the year indicate PM_{10} levels to lie within the Low Band / Index 1 classification of the Welsh Government air quality pollution banding system, indicating no long-

term significant pollution or risk to public health. The classification system rates daily recorded PM_{10} levels on a 1 (Low) to 10 (Very High) scale.

5.9. The results of the onsite monitoring are compared with previous monitoring periods in the following summary table.

Table 5.1: Comparison of PM_{10} monitoring over last 5 years

period	16/11/2016 to 17/11/2017[1]	18/11/2017 to 14/11/2018[1]	14/11/2018 to 14/11/2019[1]	14/11/2019 to 19/11/2020[2]	19/11/2020-18/11/2021[2]
on-site PM10 monitor					
report	R2613B-R01	R2613B-R02	R2613B-R03	R2613B-R04	R2613B-R05
total days	366	361	365	372	369
actual days of monitoring	276.4	200.5	202.0	176	238
% data capture	75.52	55.5	57.21	47.6	64.5
PM_{10} average over period	15.32	15.28	16.33	13.44	11.82
PM_{10} time-weighted average	14.64	15.42	18.02	12.56	12.07
% of AQO	36.6%	38.6%	45.1%	31.4%	30.3%
PM_{10} maximum recorded	71.26	35.54	46.56	51.69	20.84
number of rounds >50 µg/m^3	1	0	0	1	0
number of rounds >30 µg/m^3	3	3	6	2	0
RCT Upper Garth Avenue data hourly PM_{10}					
% data capture	96	64[3]	24[3]	86	99.9
long-term (annual) average over period	18.93	21.50	13.4	15.2	11.2
% of AQO	47.3%	54%	33.5%	38%	28%
no. of daily exceedances	10	13	0	6	2
% of AQO	28.6%	37%	0%	17%	6%

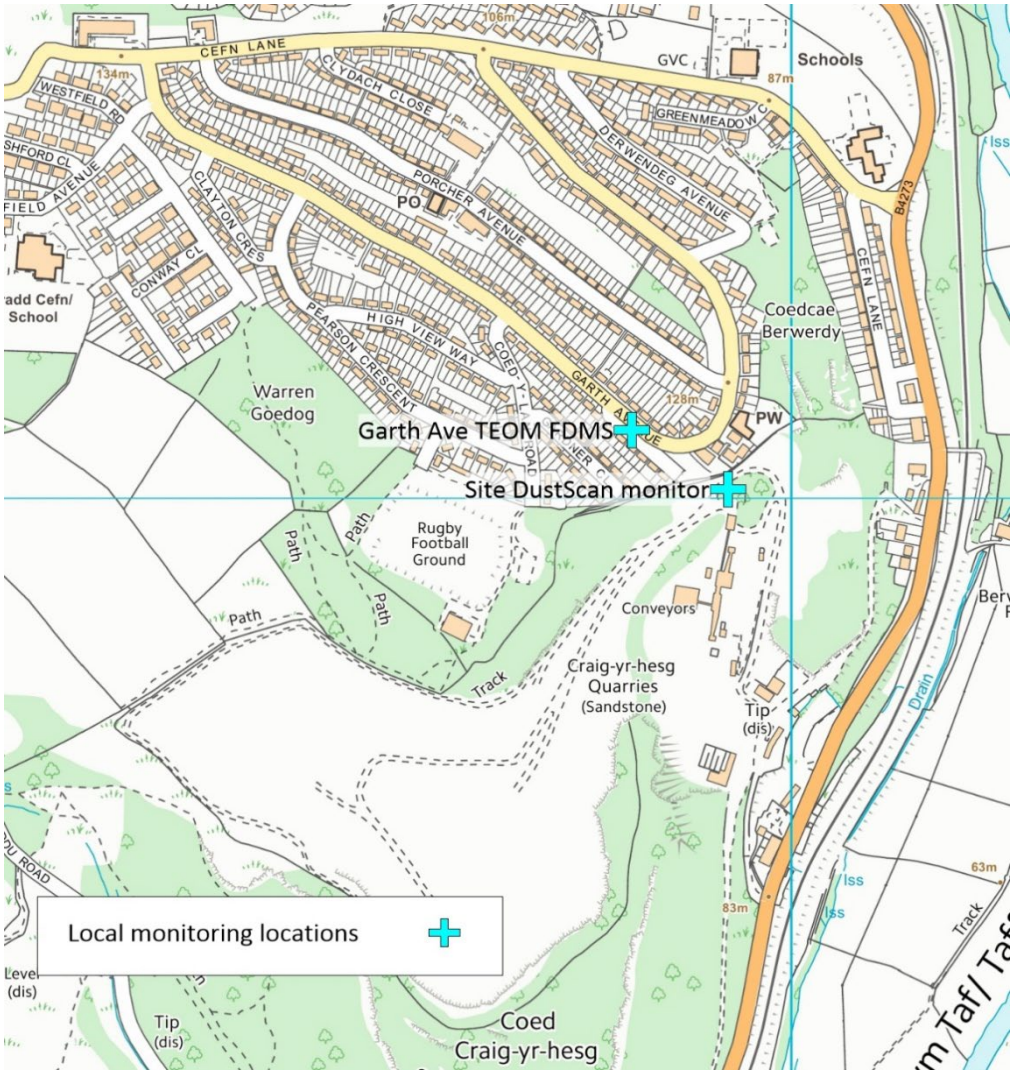
1: It is noted that due to a malfunction with the on-site monitoring unit it is possible PM_{10} concentrations were over-estimated over parts of the monitoring periods

2: Monitoring period covers the period of the Coronavirus pandemic and as such should be treated with caution when compared to other years to determine any trends etc

3: Low data capture achieved at RCT Upper Garth Avenue across monitoring period

5.10. In conclusion, the on-site and Upper Garth Avenue data continues to indicate no actual or likely breach of either the long-term annual mean or short-term 24-hour AQOs for PM_{10}.

5.11. The available data has continued to demonstrate reasonable correlation between the site data and the nearby RCT monitoring station at Upper Garth Avenue.



Drawing D01: Site and Local Monitoring Locations

Appendix A

DustScan PM_{10} 24h Average Data Reports

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3392	30/10/2020 08:08:51	06/11/2020 08:08:53	10080	**2.78**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3394	06/11/2020 09:12:05	12/11/2020 14:59:55	8987	**20.92**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3398	12/11/2020 15:00:22	19/11/2020 13:50:56	10010	**9.59**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3399	19/11/2020 14:06:35	26/11/2020 14:06:41	10080	**9.33**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3420	07/01/2021 11:36:55	14/01/2021 11:37:01	10080	**7.14**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3427	21/01/2021 11:38:28	22/01/2021 04:48:12	1029	**5.83**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3430	28/01/2021 11:03:26	01/02/2021 06:10:40	5467	**12.07**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3432	04/02/2021 10:47:14	11/02/2021 11:21:00	10113	**12.46**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3438	11/02/2021 11:22:25	18/02/2021 11:22:27	10080	**2.98**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3440	18/02/2021 11:38:28	25/02/2021 11:38:34	10080	**12.50**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3441	25/02/2021 12:56:41	04/03/2021 12:56:43	10080	**20.24**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3442	04/03/2021 13:00:59	11/03/2021 09:03:36	9842	**18.09**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3447	11/03/2021 09:05:10	18/03/2021 09:00:16	10075	**12.31**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3449	18/03/2021 12:02:10	25/03/2021 12:02:16	10080	**13.89**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3451	25/03/2021 12:34:30	01/04/2021 12:34:33	10080	**17.26**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3455	01/04/2021 12:35:33	08/04/2021 10:54:40	9979	**10.82**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3463	29/04/2021 09:51:00	06/05/2021 09:51:06	10080	**10.52**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3466	20/05/2021 08:03:00	27/05/2021 08:03:00	10080	**7.14**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3473	10/06/2021 10:16:11	17/06/2021 10:16:12	10080	**13.89**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3474	17/06/2021 10:17:04	24/06/2021 10:00:10	10063	**9.34**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3480	01/07/2021 14:03:44	08/07/2021 10:08:37	9844	**15.64**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3487	08/07/2021 10:30:00	15/07/2021 10:30:00	10080	**9.13**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3486	15/07/2021 10:31:46	22/07/2021 10:31:52	10080	**24.21**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3490	22/07/2021 11:25:04	29/07/2021 11:25:06	10080	**19.44**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3492	29/07/2021 11:26:00	05/08/2021 11:26:00	10080	**16.53**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3493	05/08/2021 15:06:00	12/08/2021 09:54:00	9768	**8.60**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3498	12/08/2021 09:54:00	19/08/2021 09:54:00	10080	**7.34**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3499	19/08/2021 09:54:00	26/08/2021 09:54:00	10080	**8.73**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3500	26/08/2021 14:36:32	02/09/2021 14:36:00	10079	**8.93**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3502	02/09/2021 14:36:50	09/09/2021 14:36:00	10079	**20.84**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3508	16/09/2021 12:00:00	23/09/2021 12:00:00	10080	**15.28**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3509	23/09/2021 12:01:00	30/09/2021 10:24:00	9983	**8.97**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3511	30/09/2021 10:25:00	07/10/2021 10:25:00	10080	**8.73**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3514	07/10/2021 10:25:26	14/10/2021 10:13:26	10068	**14.90**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3518	14/10/2021 10:14:00	21/10/2021 10:14:00	10080	**9.13**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3521	28/10/2021 10:07:57	04/11/2021 10:08:05	10080	**11.43**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3524	04/11/2021 15:03:00	11/11/2021 15:00:00	10077	**15.28**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3525	11/11/2021 15:00:00	18/11/2021 15:00:00	10080	**9.50**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3530	18/11/2021 15:01:00	25/11/2021 15:00:00	10079	**7.74**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

DS500 PM10 DATA REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry

AVERAGE GRAVIMETRIC PM10 CONCENTRATION / INTERVAL

Point Ref / Sample Ref	Date/Time Out	Date/Time In	Run Time (mins)	**24hr Average* (µg m^{-3})**
1 / 3531	25/11/2021 15:01:00	27/11/2021 15:05:00	2884	**22.88**

* 24 hour average concentration is calculated from the sampling interval average

NAQS PM_{10} Standards

The National Air Quality Strategy (NAQS) sets out Air Quality Objectives (AQO) and dates for achievement for a range of pollutants, including PM_{10}. The AQO objective for PM_{10} is currently 50 µg m^{-3} (microgrammes per cubic metre) for the 24-hour mean not to be exceeded 35 times per year and 40 µg m^{-3} not to be exceeded for an annual mean.

Please note: These data are indicative and cannot necessarily be relied on to demonstrate compliance with the 24-hour average AQO.

Appendix B

DustScan Directional Data Reports

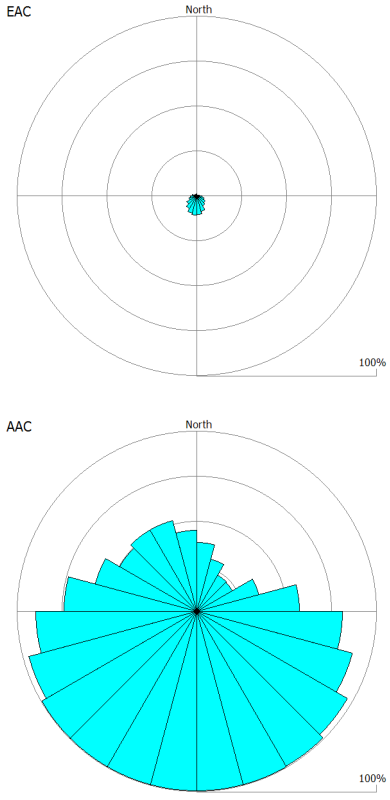
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	12-Nov-20	**Date In:**	19-Nov-20
Interval*:	7 days	**Our Ref:**	110595 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.1
Absolute Area Coverage (AAC%) / interval = 70.6
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 10.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	38.3	0.1	5.5	Very Low
15°-30°	0.6	30.3	<0.1	4.3	Very Low
30°-45°	0.4	23.5	<0.1	3.4	Very Low
45°-60°	0.4	22.9	<0.1	3.3	Very Low
60°-75°	0.8	35.7	0.1	5.1	Very Low
75°-90°	1.6	57.3	0.2	8.2	Very Low
90°-105°	3.0	81.2	0.4	11.6	Very Low
105°-120°	4.4	90.0	0.6	12.9	Low
120°-135°	5.5	97.0	0.8	13.9	Medium
135°-150°	6.8	99.4	1.0	14.2	High
150°-165°	9.2	100.0	1.3	14.3	High
165°-180°	10.5	100.0	1.5	14.3	High
180°-195°	11.0	100.0	1.6	14.3	High
195°-210°	10.2	100.0	1.5	14.3	High
210°-225°	8.5	100.0	1.2	14.3	High
225°-240°	6.7	99.9	1.0	14.3	High
240°-255°	4.7	96.9	0.7	13.8	Medium
255°-270°	3.7	89.9	0.5	12.8	Low
270°-285°	2.6	74.1	0.4	10.6	Very Low
285°-300°	1.6	58.9	0.2	8.4	Very Low
300°-315°	1.3	49.7	0.2	7.1	Very Low
315°-330°	1.4	52.2	0.2	7.5	Very Low
330°-345°	1.3	52.4	0.2	7.5	Very Low
345°-360°	1.1	45.3	0.2	6.5	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

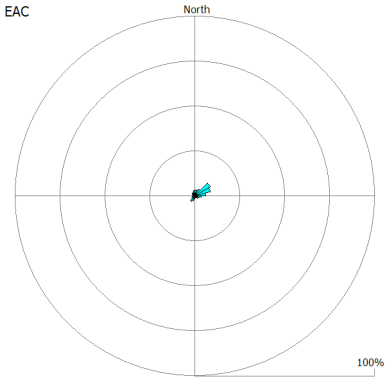
DS100 DIRECTIONAL DUST FLUX REPORT

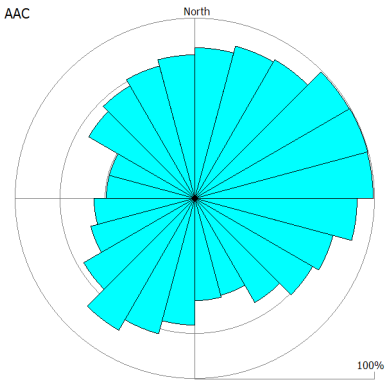
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	19-Nov-20	**Date In:**	26-Nov-20
Interval*:	7 days	**Our Ref:**	110738 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.2
Absolute Area Coverage (AAC%) / interval = 75.1
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 10.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.4	83.9	0.5	12.0	Low
15°-30°	3.7	87.7	0.5	12.5	Low
30°-45°	4.5	89.3	0.6	12.8	Low
45°-60°	10.1	99.5	1.4	14.2	High
60°-75°	9.1	100.0	1.3	14.3	High
75°-90°	6.3	99.3	0.9	14.2	High
90°-105°	3.8	90.5	0.5	12.9	Low
105°-120°	2.7	80.0	0.4	11.4	Very Low
120°-135°	2.3	75.7	0.3	10.8	Very Low
135°-150°	1.8	67.1	0.3	9.6	Very Low
150°-165°	1.2	55.9	0.2	8.0	Very Low
165°-180°	1.2	56.9	0.2	8.1	Very Low
180°-195°	2.0	70.6	0.3	10.1	Very Low
195°-210°	3.0	78.2	0.4	11.2	Very Low
210°-225°	3.7	85.0	0.5	12.1	Low
225°-240°	2.4	71.8	0.3	10.3	Very Low
240°-255°	1.5	60.1	0.2	8.6	Very Low
255°-270°	1.3	56.2	0.2	8.0	Very Low
270°-285°	1.3	49.6	0.2	7.1	Very Low
285°-300°	1.2	49.5	0.2	7.1	Very Low
300°-315°	2.0	68.4	0.3	9.8	Very Low
315°-330°	2.4	72.5	0.3	10.4	Very Low
330°-345°	2.6	76.2	0.4	10.9	Very Low
345°-360°	3.0	79.7	0.4	11.4	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

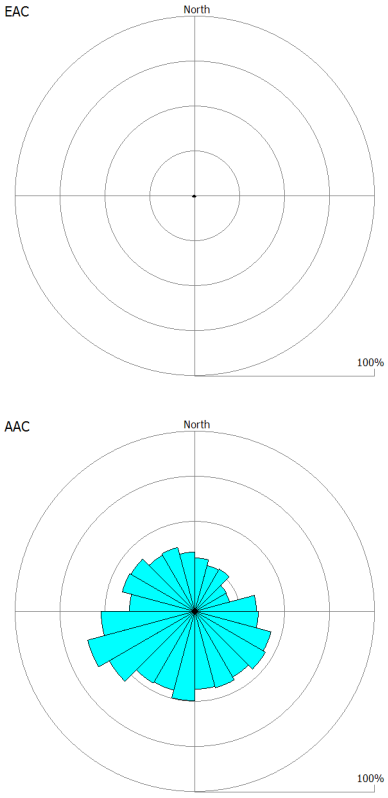
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	26-Nov-20	**Date In:**	03-Dec-20
Interval*:	7 days	**Our Ref:**	110915 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.8
Absolute Area Coverage (AAC%) / interval = 39.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	30.0	<0.1	4.3	Very Low
15°-30°	0.5	26.5	<0.1	3.8	Very Low
30°-45°	0.5	27.5	<0.1	3.9	Very Low
45°-60°	0.3	20.6	<0.1	2.9	Very Low
60°-75°	0.3	20.1	<0.1	2.9	Very Low
75°-90°	0.6	34.3	<0.1	4.9	Very Low
90°-105°	0.7	35.6	<0.1	5.1	Very Low
105°-120°	0.9	44.0	0.1	6.3	Very Low
120°-135°	1.0	45.6	0.1	6.5	Very Low
135°-150°	0.9	42.3	0.1	6.0	Very Low
150°-165°	0.9	44.1	0.1	6.3	Very Low
165°-180°	0.8	43.2	0.1	6.2	Very Low
180°-195°	1.0	50.0	0.1	7.1	Very Low
195°-210°	0.8	45.5	0.1	6.5	Very Low
210°-225°	0.8	46.2	0.1	6.6	Very Low
225°-240°	1.2	55.0	0.2	7.9	Very Low
240°-255°	1.5	61.8	0.2	8.8	Very Low
255°-270°	1.2	52.2	0.2	7.5	Very Low
270°-285°	0.6	36.5	<0.1	5.2	Very Low
285°-300°	0.8	42.0	0.1	6.0	Very Low
300°-315°	0.8	41.1	0.1	5.9	Very Low
315°-330°	0.6	36.2	<0.1	5.2	Very Low
330°-345°	0.6	37.1	<0.1	5.3	Very Low
345°-360°	0.5	33.2	<0.1	4.7	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

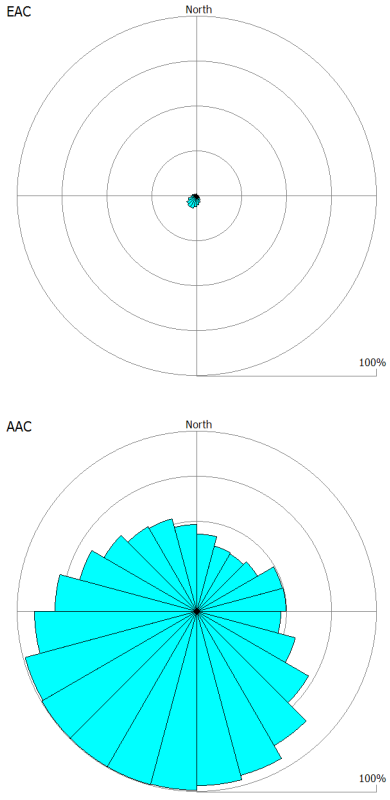
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	03-Dec-20	**Date In:**	10-Dec-20
Interval*:	7 days	**Our Ref:**	111108 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.8
Absolute Area Coverage (AAC%) / interval = 69.2
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	43.0	0.1	6.1	Very Low
15°-30°	0.7	37.5	<0.1	5.4	Very Low
30°-45°	0.7	37.0	<0.1	5.3	Very Low
45°-60°	0.7	39.3	0.1	5.6	Very Low
60°-75°	1.1	49.4	0.2	7.1	Very Low
75°-90°	1.0	49.8	0.1	7.1	Very Low
90°-105°	0.9	47.1	0.1	6.7	Very Low
105°-120°	1.2	56.9	0.2	8.1	Very Low
120°-135°	1.8	71.9	0.3	10.3	Very Low
135°-150°	3.0	86.4	0.4	12.3	Very Low
150°-165°	4.3	94.3	0.6	13.5	Low
165°-180°	5.3	96.9	0.8	13.8	Medium
180°-195°	6.4	99.6	0.9	14.2	High
195°-210°	7.3	99.9	1.0	14.3	High
210°-225°	7.2	99.9	1.0	14.3	High
225°-240°	6.6	99.9	0.9	14.3	High
240°-255°	5.3	99.0	0.8	14.1	High
255°-270°	3.6	90.6	0.5	12.9	Low
270°-285°	2.8	79.0	0.4	11.3	Very Low
285°-300°	2.0	67.8	0.3	9.7	Very Low
300°-315°	1.6	59.7	0.2	8.5	Very Low
315°-330°	1.3	54.4	0.2	7.8	Very Low
330°-345°	1.3	53.2	0.2	7.6	Very Low
345°-360°	1.1	48.3	0.2	6.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

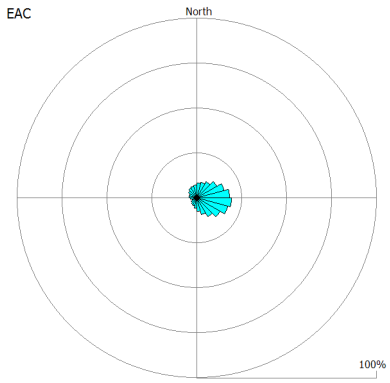
DS100 DIRECTIONAL DUST FLUX REPORT

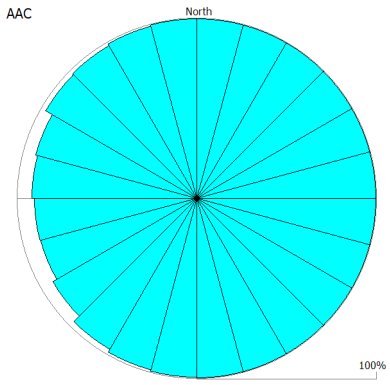
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	10-Dec-20	**Date In:**	07-Jan-21
Interval*:	28 days	**Our Ref:**	111690 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 9.1
Absolute Area Coverage (AAC%) / interval = 97.8
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 3.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	8.4	100.0	0.3	3.6	N/A
15°-30°	9.0	100.0	0.3	3.6	N/A
30°-45°	10.5	100.0	0.4	3.6	N/A
45°-60°	13.1	100.0	0.5	3.6	N/A
60°-75°	15.8	100.0	0.6	3.6	N/A
75°-90°	18.6	100.0	0.7	3.6	N/A
90°-105°	19.5	100.0	0.7	3.6	N/A
105°-120°	18.1	100.0	0.6	3.6	N/A
120°-135°	15.3	100.0	0.5	3.6	N/A
135°-150°	12.2	100.0	0.4	3.6	N/A
150°-165°	9.7	100.0	0.3	3.6	N/A
165°-180°	7.5	99.9	0.3	3.6	N/A
180°-195°	6.1	99.6	0.2	3.6	N/A
195°-210°	5.0	98.7	0.2	3.5	N/A
210°-225°	4.6	97.1	0.2	3.5	N/A
225°-240°	3.9	92.6	0.1	3.3	N/A
240°-255°	3.2	90.1	0.1	3.2	N/A
255°-270°	3.6	90.7	0.1	3.2	N/A
270°-285°	4.4	91.9	0.2	3.3	N/A
285°-300°	4.4	93.0	0.2	3.3	N/A
300°-315°	5.6	97.3	0.2	3.5	N/A
315°-330°	6.6	98.2	0.2	3.5	N/A
330°-345°	7.1	99.1	0.3	3.5	N/A
345°-360°	7.2	99.7	0.3	3.6	N/A





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Sampling interval exceeded 14 days - Dust Impact Risk cannot be calculated

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

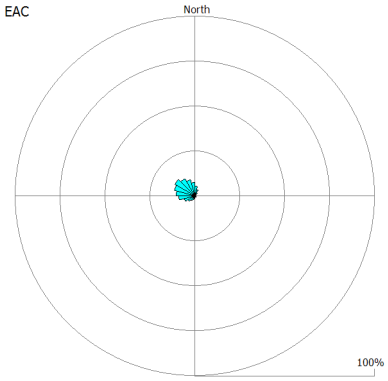
DS100 DIRECTIONAL DUST FLUX REPORT

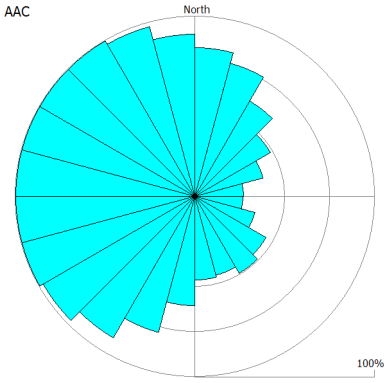
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	07-Jan-21	**Date In:**	21-Jan-21
Interval*:	14 days	**Our Ref:**	111886 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.6
Absolute Area Coverage (AAC%) / interval = 70.9
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 5.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	5.7	82.8	0.4	5.9	Very Low
15°-30°	3.8	76.6	0.3	5.5	Very Low
30°-45°	2.2	61.4	0.2	4.4	Very Low
45°-60°	1.2	48.7	<0.1	3.5	Very Low
60°-75°	0.8	39.3	<0.1	2.8	Very Low
75°-90°	0.4	27.2	<0.1	1.9	Very Low
90°-105°	0.4	27.0	<0.1	1.9	Very Low
105°-120°	0.6	34.9	<0.1	2.5	Very Low
120°-135°	1.0	46.1	<0.1	3.3	Very Low
135°-150°	1.2	49.6	<0.1	3.5	Very Low
150°-165°	0.8	45.6	<0.1	3.3	Very Low
165°-180°	0.9	46.6	<0.1	3.3	Very Low
180°-195°	1.4	60.8	0.1	4.3	Very Low
195°-210°	2.4	78.5	0.2	5.6	Very Low
210°-225°	3.3	90.9	0.2	6.5	Very Low
225°-240°	4.5	97.5	0.3	7.0	Very Low
240°-255°	6.4	99.9	0.5	7.1	Medium
255°-270°	9.0	100.0	0.6	7.1	Medium
270°-285°	10.7	100.0	0.8	7.1	High
285°-300°	12.1	100.0	0.9	7.1	High
300°-315°	12.9	100.0	0.9	7.1	High
315°-330°	11.4	100.0	0.8	7.1	High
330°-345°	9.6	97.5	0.7	7.0	Medium
345°-360°	7.7	90.3	0.6	6.5	Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

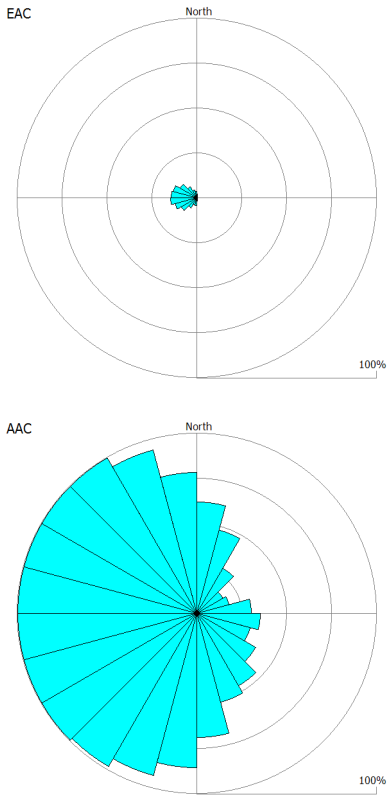
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	21-Jan-21	**Date In:**	28-Jan-21
Interval*:	7 days	**Our Ref:**	112007 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.0
Absolute Area Coverage (AAC%) / interval = 67.8
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 9.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	2.5	62.1	0.4	8.9	Very Low
15°-30°	1.3	47.9	0.2	6.8	Very Low
30°-45°	0.4	29.1	<0.1	4.2	Very Low
45°-60°	0.2	17.0	<0.1	2.4	Very Low
60°-75°	0.2	18.9	<0.1	2.7	Very Low
75°-90°	0.5	30.6	<0.1	4.4	Very Low
90°-105°	0.7	35.4	<0.1	5.1	Very Low
105°-120°	0.5	30.9	<0.1	4.4	Very Low
120°-135°	0.6	38.0	<0.1	5.4	Very Low
135°-150°	1.0	46.6	0.1	6.7	Very Low
150°-165°	1.2	51.2	0.2	7.3	Very Low
165°-180°	2.1	69.0	0.3	9.9	Very Low
180°-195°	4.6	85.8	0.7	12.3	Medium
195°-210°	4.2	93.5	0.6	13.4	Low
210°-225°	6.4	98.3	0.9	14.0	Medium
225°-240°	10.1	100.0	1.4	14.3	High
240°-255°	12.8	100.0	1.8	14.3	High
255°-270°	14.8	100.0	2.1	14.3	Very High
270°-285°	14.4	100.0	2.1	14.3	Very High
285°-300°	13.6	100.0	1.9	14.3	High
300°-315°	10.9	100.0	1.6	14.3	High
315°-330°	7.3	99.9	1.0	14.3	High
330°-345°	4.9	94.1	0.7	13.4	Medium
345°-360°	3.8	78.5	0.5	11.2	Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

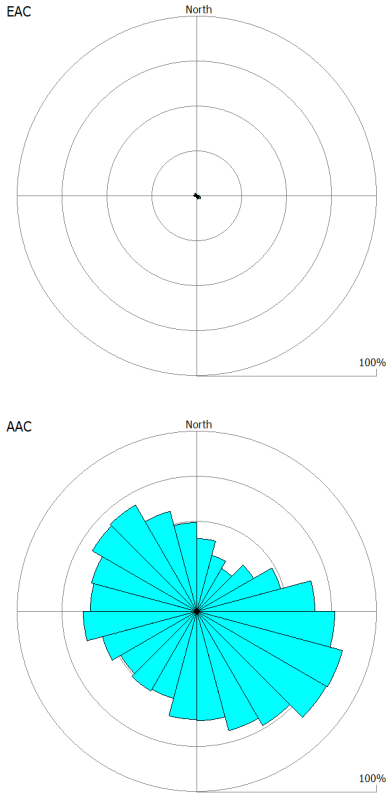
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	28-Jan-21	**Date In:**	04-Feb-21
Interval*:	7 days	**Our Ref:**	112198 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.3
Absolute Area Coverage (AAC%) / interval = 57.9
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 8.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.8	40.4	0.1	5.8	Very Low
15°-30°	0.5	32.3	<0.1	4.6	Very Low
30°-45°	0.4	27.7	<0.1	4.0	Very Low
45°-60°	0.5	36.7	<0.1	5.2	Very Low
60°-75°	0.7	48.4	0.1	6.9	Very Low
75°-90°	1.2	66.0	0.2	9.4	Very Low
90°-105°	1.6	76.8	0.2	11.0	Very Low
105°-120°	2.4	84.1	0.3	12.0	Very Low
120°-135°	2.5	83.3	0.4	11.9	Very Low
135°-150°	2.1	73.5	0.3	10.5	Very Low
150°-165°	1.8	68.7	0.3	9.8	Very Low
165°-180°	1.3	61.0	0.2	8.7	Very Low
180°-195°	1.3	60.4	0.2	8.6	Very Low
195°-210°	0.9	50.2	0.1	7.2	Very Low
210°-225°	0.8	51.1	0.1	7.3	Very Low
225°-240°	0.8	49.1	0.1	7.0	Very Low
240°-255°	1.0	54.5	0.1	7.8	Very Low
255°-270°	1.8	63.3	0.3	9.0	Very Low
270°-285°	1.8	59.6	0.3	8.5	Very Low
285°-300°	1.3	60.8	0.2	8.7	Very Low
300°-315°	1.7	67.3	0.2	9.6	Very Low
315°-330°	1.8	68.4	0.3	9.8	Very Low
330°-345°	1.3	57.5	0.2	8.2	Very Low
345°-360°	1.0	49.4	0.1	7.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

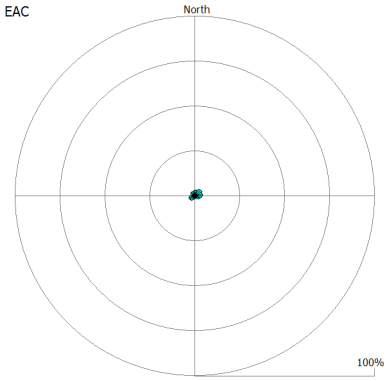
DS100 DIRECTIONAL DUST FLUX REPORT

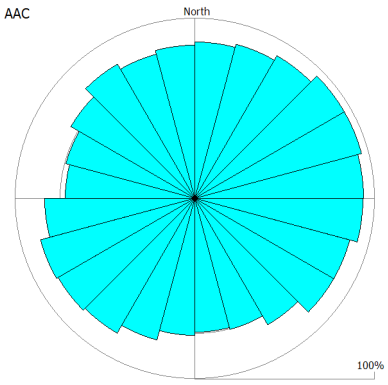
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	05-Feb-21	**Date In:**	11-Feb-21
Interval*:	6 days	**Our Ref:**	112305 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.1
Absolute Area Coverage (AAC%) / interval = 85.2
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 14.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.4	87.0	0.6	14.5	Low
15°-30°	3.7	88.6	0.6	14.8	Low
30°-45°	4.4	91.5	0.7	15.3	Medium
45°-60°	4.9	96.4	0.8	16.1	Medium
60°-75°	4.3	96.1	0.7	16.0	Medium
75°-90°	4.4	94.2	0.7	15.7	Medium
90°-105°	4.2	93.7	0.7	15.6	Medium
105°-120°	3.4	89.4	0.6	14.9	Low
120°-135°	3.1	89.6	0.5	14.9	Low
135°-150°	2.2	81.1	0.4	13.5	Very Low
150°-165°	1.8	75.7	0.3	12.6	Very Low
165°-180°	1.8	74.5	0.3	12.4	Very Low
180°-195°	2.0	76.1	0.3	12.7	Very Low
195°-210°	2.3	81.7	0.4	13.6	Very Low
210°-225°	3.2	86.7	0.5	14.5	Low
225°-240°	3.3	88.0	0.6	14.7	Low
240°-255°	3.6	89.0	0.6	14.8	Low
255°-270°	3.1	83.7	0.5	14.0	Low
270°-285°	2.0	72.2	0.3	12.0	Very Low
285°-300°	2.2	74.5	0.4	12.4	Very Low
300°-315°	2.9	79.9	0.5	13.3	Low
315°-330°	3.1	86.3	0.5	14.4	Low
330°-345°	2.5	83.2	0.4	13.9	Very Low
345°-360°	3.0	85.2	0.5	14.2	Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

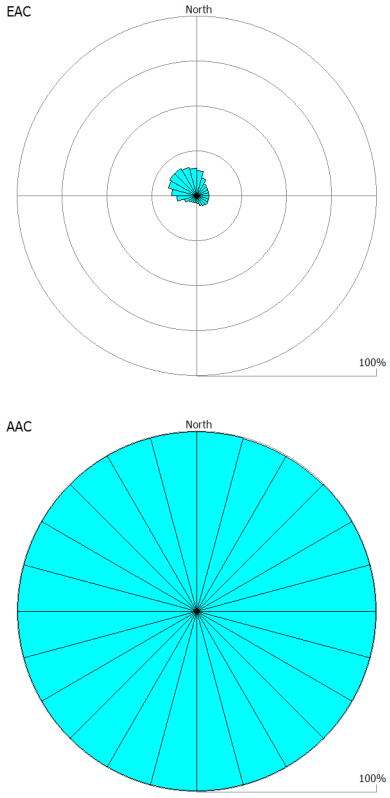
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	11-Feb-21	**Date In:**	18-Feb-21
Interval*:	7 days	**Our Ref:**	112525 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 9.4
Absolute Area Coverage (AAC%) / interval = 100.0
Effective Area Coverage (EAC%) / day = 1.3
Absolute Area Coverage (AAC%) / day = 14.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	14.3	100.0	2.0	14.3	High
15°-30°	10.4	99.5	1.5	14.2	High
30°-45°	8.1	99.6	1.2	14.2	High
45°-60°	7.4	100.0	1.1	14.3	High
60°-75°	6.8	100.0	1.0	14.3	High
75°-90°	6.9	100.0	1.0	14.3	High
90°-105°	6.8	100.0	1.0	14.3	High
105°-120°	7.1	100.0	1.0	14.3	High
120°-135°	7.2	100.0	1.0	14.3	High
135°-150°	6.7	100.0	1.0	14.3	High
150°-165°	6.0	100.0	0.9	14.3	High
165°-180°	4.6	100.0	0.7	14.3	High
180°-195°	3.8	100.0	0.5	14.3	High
195°-210°	3.9	100.0	0.6	14.3	High
210°-225°	4.5	100.0	0.6	14.3	High
225°-240°	5.3	100.0	0.8	14.3	High
240°-255°	7.3	100.0	1.0	14.3	High
255°-270°	11.2	100.0	1.6	14.3	High
270°-285°	14.3	100.0	2.0	14.3	Very High
285°-300°	16.7	100.0	2.4	14.3	Very High
300°-315°	17.7	100.0	2.5	14.3	Very High
315°-330°	17.6	100.0	2.5	14.3	Very High
330°-345°	16.6	100.0	2.4	14.3	Very High
345°-360°	15.4	100.0	2.2	14.3	Very High



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

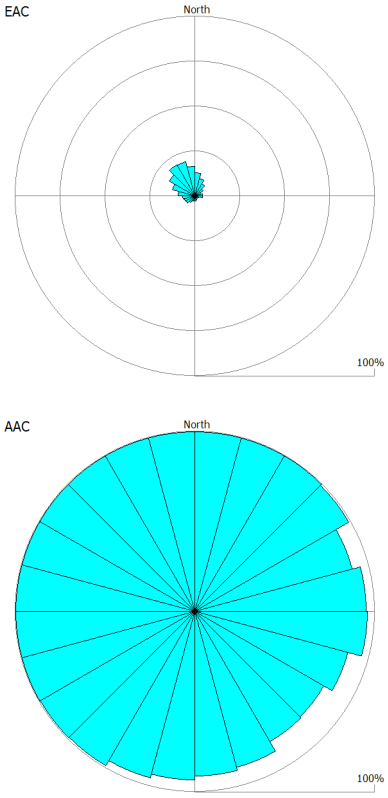
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	18-Feb-21	**Date In:**	25-Feb-21
Interval*:	7 days	**Our Ref:**	112685 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.9
Absolute Area Coverage (AAC%) / interval = 96.1
Effective Area Coverage (EAC%) / day = 1.1
Absolute Area Coverage (AAC%) / day = 13.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	13.2	100.0	1.9	14.3	High
15°-30°	10.1	100.0	1.4	14.3	High
30°-45°	8.0	100.0	1.1	14.3	High
45°-60°	5.7	99.2	0.8	14.2	High
60°-75°	3.7	90.9	0.5	13.0	Low
75°-90°	4.4	95.4	0.6	13.6	Low
90°-105°	4.5	96.4	0.6	13.8	Low
105°-120°	2.8	88.3	0.4	12.6	Very Low
120°-135°	2.4	83.2	0.3	11.9	Very Low
135°-150°	2.3	83.7	0.3	12.0	Very Low
150°-165°	2.7	89.8	0.4	12.8	Very Low
165°-180°	3.0	91.7	0.4	13.1	Very Low
180°-195°	3.0	93.6	0.4	13.4	Very Low
195°-210°	3.4	95.7	0.5	13.7	Low
210°-225°	4.6	99.0	0.7	14.1	High
225°-240°	5.8	99.5	0.8	14.2	High
240°-255°	6.4	99.8	0.9	14.3	High
255°-270°	7.1	99.9	1.0	14.3	High
270°-285°	9.5	100.0	1.4	14.3	High
285°-300°	12.9	100.0	1.8	14.3	High
300°-315°	16.8	100.0	2.4	14.3	Very High
315°-330°	20.2	100.0	2.9	14.3	Very High
330°-345°	19.9	100.0	2.8	14.3	Very High
345°-360°	16.6	100.0	2.4	14.3	Very High



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

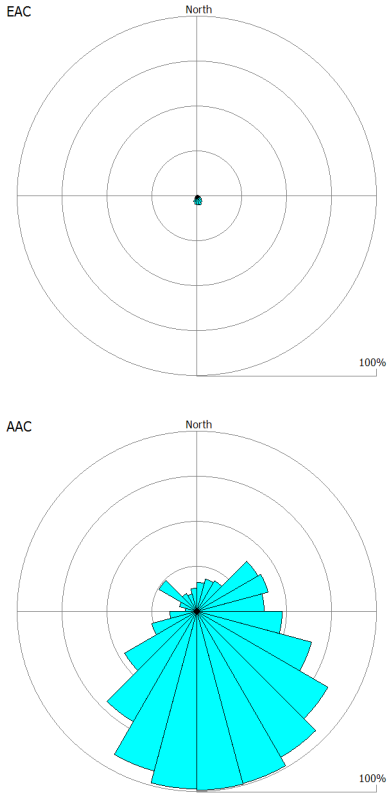
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	04-Mar-21	**Date In:**	11-Mar-21
Interval*:	7 days	**Our Ref:**	113009 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.7
Absolute Area Coverage (AAC%) / interval = 45.4
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 6.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	16.2	<0.1	2.3	Very Low
15°-30°	0.4	18.9	<0.1	2.7	Very Low
30°-45°	0.3	19.9	<0.1	2.8	Very Low
45°-60°	1.0	39.5	0.1	5.6	Very Low
60°-75°	1.1	41.3	0.2	5.9	Very Low
75°-90°	0.8	37.6	0.1	5.4	Very Low
90°-105°	1.2	47.6	0.2	6.8	Very Low
105°-120°	2.1	66.2	0.3	9.5	Very Low
120°-135°	3.5	84.5	0.5	12.1	Low
135°-150°	4.4	93.7	0.6	13.4	Low
150°-165°	5.5	98.9	0.8	14.1	Medium
165°-180°	5.2	99.3	0.7	14.2	High
180°-195°	4.9	98.7	0.7	14.1	Medium
195°-210°	3.8	91.9	0.5	13.1	Low
210°-225°	2.0	70.7	0.3	10.1	Very Low
225°-240°	1.2	46.5	0.2	6.6	Very Low
240°-255°	0.5	26.4	<0.1	3.8	Very Low
255°-270°	0.3	15.3	<0.1	2.2	Very Low
270°-285°	<0.1	6.7	<0.1	1.0	Very Low
285°-300°	0.2	10.1	<0.1	1.4	Very Low
300°-315°	0.6	24.6	<0.1	3.5	Very Low
315°-330°	0.2	11.6	<0.1	1.7	Very Low
330°-345°	0.2	10.2	<0.1	1.5	Very Low
345°-360°	0.3	13.1	<0.1	1.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

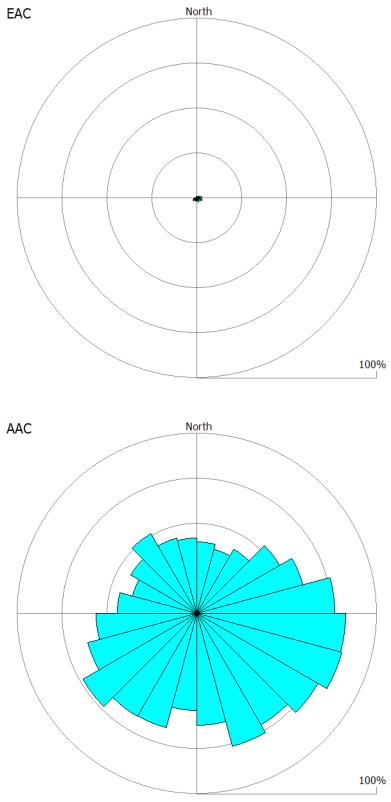
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	11-Mar-21	**Date In:**	18-Mar-21
Interval*:	7 days	**Our Ref:**	113174 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.7
Absolute Area Coverage (AAC%) / interval = 58.6
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 8.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.8	39.8	0.1	5.7	Very Low
15°-30°	0.8	37.1	0.1	5.3	Very Low
30°-45°	1.0	41.1	0.1	5.9	Very Low
45°-60°	1.6	53.4	0.2	7.6	Very Low
60°-75°	2.3	61.4	0.3	8.8	Very Low
75°-90°	2.8	77.0	0.4	11.0	Very Low
90°-105°	3.2	83.1	0.5	11.9	Low
105°-120°	3.3	83.7	0.5	12.0	Low
120°-135°	2.6	78.2	0.4	11.2	Very Low
135°-150°	2.3	71.5	0.3	10.2	Very Low
150°-165°	2.6	76.6	0.4	10.9	Very Low
165°-180°	1.8	62.5	0.3	8.9	Very Low
180°-195°	1.4	54.2	0.2	7.7	Very Low
195°-210°	1.9	65.7	0.3	9.4	Very Low
210°-225°	1.9	66.2	0.3	9.5	Very Low
225°-240°	2.7	73.4	0.4	10.5	Very Low
240°-255°	1.9	63.2	0.3	9.0	Very Low
255°-270°	1.6	56.2	0.2	8.0	Very Low
270°-285°	1.0	44.4	0.1	6.3	Very Low
285°-300°	0.5	37.3	<0.1	5.3	Very Low
300°-315°	0.6	42.8	<0.1	6.1	Very Low
315°-330°	0.9	51.2	0.1	7.3	Very Low
330°-345°	0.7	43.4	<0.1	6.2	Very Low
345°-360°	0.8	41.9	0.1	6.0	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

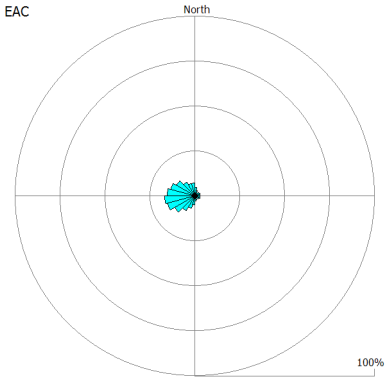
DS100 DIRECTIONAL DUST FLUX REPORT

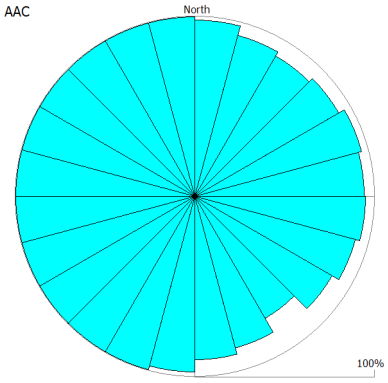
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	25-Mar-21	**Date In:**	01-Apr-21
Interval*:	7 days	**Our Ref:**	113540 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.1
Absolute Area Coverage (AAC%) / interval = 95.7
Effective Area Coverage (EAC%) / day = 1.0
Absolute Area Coverage (AAC%) / day = 13.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.8	98.0	0.7	14.0	Medium
15°-30°	3.3	92.8	0.5	13.3	Low
30°-45°	2.4	90.2	0.3	12.9	Very Low
45°-60°	2.9	92.7	0.4	13.2	Very Low
60°-75°	3.6	96.2	0.5	13.7	Low
75°-90°	3.2	94.6	0.5	13.5	Low
90°-105°	3.1	95.3	0.4	13.6	Very Low
105°-120°	3.3	92.7	0.5	13.2	Low
120°-135°	2.6	88.5	0.4	12.6	Very Low
135°-150°	1.7	78.6	0.2	11.2	Very Low
150°-165°	2.5	87.5	0.4	12.5	Very Low
165°-180°	2.9	90.9	0.4	13.0	Very Low
180°-195°	5.0	97.8	0.7	14.0	Medium
195°-210°	7.3	100.0	1.0	14.3	High
210°-225°	9.9	100.0	1.4	14.3	High
225°-240°	13.2	100.0	1.9	14.3	High
240°-255°	15.9	100.0	2.3	14.3	Very High
255°-270°	17.1	100.0	2.4	14.3	Very High
270°-285°	15.7	100.0	2.2	14.3	Very High
285°-300°	14.2	100.0	2.0	14.3	Very High
300°-315°	12.0	100.0	1.7	14.3	High
315°-330°	8.9	100.0	1.3	14.3	High
330°-345°	7.3	100.0	1.0	14.3	High
345°-360°	7.5	99.9	1.1	14.3	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

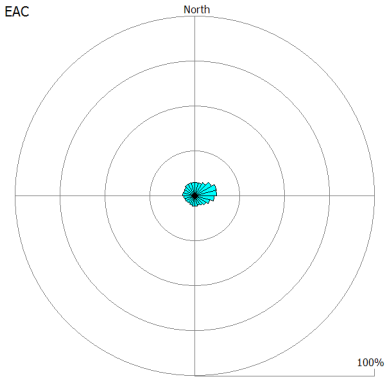
DS100 DIRECTIONAL DUST FLUX REPORT

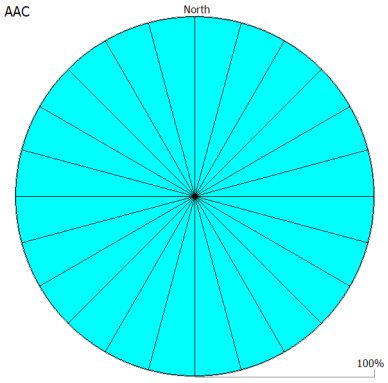
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	01-Apr-21	**Date In:**	15-Apr-21
Interval*:	14 days	**Our Ref:**	113810 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.6
Absolute Area Coverage (AAC%) / interval = 99.9
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 7.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	7.8	99.8	0.6	7.1	Medium
15°-30°	7.8	99.9	0.6	7.1	Medium
30°-45°	8.6	99.9	0.6	7.1	Medium
45°-60°	10.9	100.0	0.8	7.1	High
60°-75°	12.8	100.0	0.9	7.1	High
75°-90°	12.3	100.0	0.9	7.1	High
90°-105°	10.7	100.0	0.8	7.1	High
105°-120°	8.8	100.0	0.6	7.1	Medium
120°-135°	7.3	99.9	0.5	7.1	Medium
135°-150°	6.2	100.0	0.4	7.1	Low
150°-165°	5.4	99.9	0.4	7.1	Low
165°-180°	5.9	99.9	0.4	7.1	Low
180°-195°	5.9	100.0	0.4	7.1	Low
195°-210°	5.5	100.0	0.4	7.1	Low
210°-225°	5.2	99.9	0.4	7.1	Low
225°-240°	5.4	99.8	0.4	7.1	Low
240°-255°	6.0	99.9	0.4	7.1	Low
255°-270°	6.3	99.9	0.5	7.1	Medium
270°-285°	6.8	99.9	0.5	7.1	Medium
285°-300°	6.8	100.0	0.5	7.1	Medium
300°-315°	7.1	100.0	0.5	7.1	Medium
315°-330°	7.6	99.9	0.5	7.1	Medium
330°-345°	7.8	99.9	0.6	7.1	Medium
345°-360°	7.8	99.9	0.6	7.1	Medium





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

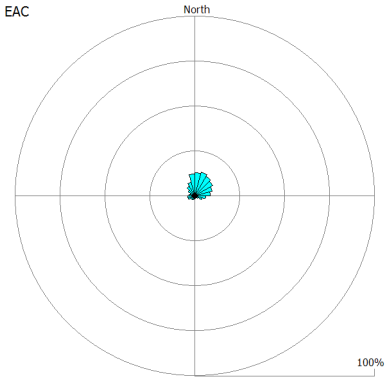
DS100 DIRECTIONAL DUST FLUX REPORT

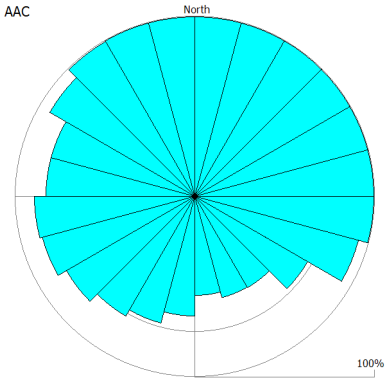
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	15-Apr-21	**Date In:**	22-Apr-21
Interval*:	7 days	**Our Ref:**	113922 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.0
Absolute Area Coverage (AAC%) / interval = 86.4
Effective Area Coverage (EAC%) / day = 0.9
Absolute Area Coverage (AAC%) / day = 12.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	13.2	100.0	1.9	14.3	High
15°-30°	13.7	100.0	2.0	14.3	Very High
30°-45°	12.8	100.0	1.8	14.3	High
45°-60°	11.7	100.0	1.7	14.3	High
60°-75°	10.3	100.0	1.5	14.3	High
75°-90°	8.7	100.0	1.2	14.3	High
90°-105°	6.4	99.7	0.9	14.2	High
105°-120°	4.4	94.4	0.6	13.5	Low
120°-135°	2.4	72.5	0.3	10.4	Very Low
135°-150°	1.7	58.8	0.2	8.4	Very Low
150°-165°	1.8	58.2	0.3	8.3	Very Low
165°-180°	1.5	55.3	0.2	7.9	Very Low
180°-195°	2.0	66.6	0.3	9.5	Very Low
195°-210°	2.3	73.0	0.3	10.4	Very Low
210°-225°	2.7	76.9	0.4	11.0	Very Low
225°-240°	3.2	82.6	0.5	11.8	Low
240°-255°	4.0	88.2	0.6	12.6	Low
255°-270°	4.0	89.3	0.6	12.8	Low
270°-285°	3.3	83.0	0.5	11.9	Low
285°-300°	3.1	82.9	0.4	11.8	Very Low
300°-315°	4.3	93.6	0.6	13.4	Low
315°-330°	6.1	99.6	0.9	14.2	High
330°-345°	8.0	100.0	1.1	14.3	High
345°-360°	12.2	100.0	1.7	14.3	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

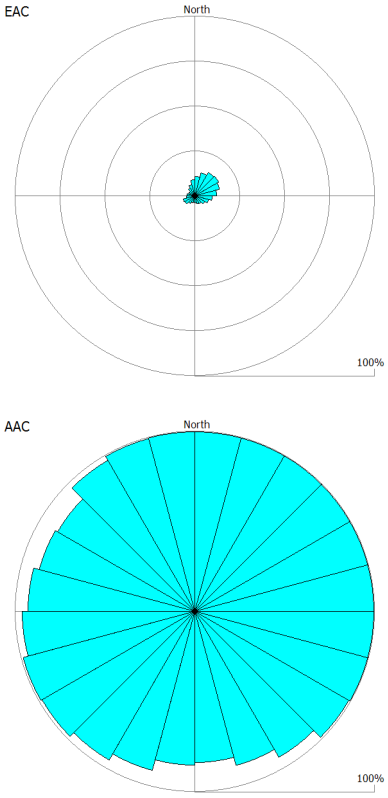
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	22-Apr-21	**Date In:**	29-Apr-21
Interval*:	7 days	**Our Ref:**	114152 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.7
Absolute Area Coverage (AAC%) / interval = 95.8
Effective Area Coverage (EAC%) / day = 1.1
Absolute Area Coverage (AAC%) / day = 13.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	11.0	100.0	1.6	14.3	High
15°-30°	13.5	100.0	1.9	14.3	High
30°-45°	15.3	100.0	2.2	14.3	Very High
45°-60°	15.6	100.0	2.2	14.3	Very High
60°-75°	14.3	100.0	2.0	14.3	Very High
75°-90°	12.2	100.0	1.7	14.3	High
90°-105°	9.9	100.0	1.4	14.3	High
105°-120°	7.9	99.9	1.1	14.3	High
120°-135°	6.5	99.0	0.9	14.1	High
135°-150°	5.3	93.8	0.8	13.4	Medium
150°-165°	4.8	88.9	0.7	12.7	Medium
165°-180°	4.1	84.2	0.6	12.0	Low
180°-195°	3.8	85.4	0.5	12.2	Low
195°-210°	4.0	91.4	0.6	13.1	Low
210°-225°	5.2	95.7	0.7	13.7	Medium
225°-240°	6.6	98.5	0.9	14.1	Medium
240°-255°	7.1	99.1	1.0	14.2	High
255°-270°	4.9	96.1	0.7	13.7	Medium
270°-285°	4.3	93.1	0.6	13.3	Low
285°-300°	3.6	89.7	0.5	12.8	Low
300°-315°	3.8	88.5	0.5	12.6	Low
315°-330°	5.2	96.9	0.7	13.8	Medium
330°-345°	6.6	99.4	0.9	14.2	High
345°-360°	9.2	100.0	1.3	14.3	High



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

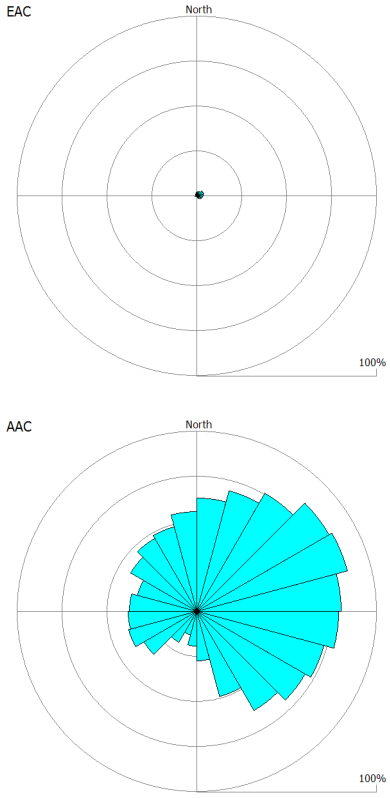
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	29-Apr-21	**Date In:**	06-May-21
Interval*:	7 days	**Our Ref:**	114299 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.8
Absolute Area Coverage (AAC%) / interval = 52.3
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 7.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	2.2	62.9	0.3	9.0	Very Low
15°-30°	2.6	69.6	0.4	9.9	Very Low
30°-45°	3.0	75.8	0.4	10.8	Very Low
45°-60°	4.0	85.1	0.6	12.2	Low
60°-75°	4.0	86.9	0.6	12.4	Low
75°-90°	3.6	80.5	0.5	11.5	Low
90°-105°	3.5	79.3	0.5	11.3	Low
105°-120°	3.1	73.5	0.4	10.5	Very Low
120°-135°	2.5	69.8	0.4	10.0	Very Low
135°-150°	2.1	63.6	0.3	9.1	Very Low
150°-165°	1.4	49.1	0.2	7.0	Very Low
165°-180°	0.6	27.6	<0.1	3.9	Very Low
180°-195°	0.3	19.4	<0.1	2.8	Very Low
195°-210°	0.2	13.8	<0.1	2.0	Very Low
210°-225°	0.4	20.1	<0.1	2.9	Very Low
225°-240°	0.9	34.1	0.1	4.9	Very Low
240°-255°	1.1	39.4	0.2	5.6	Very Low
255°-270°	1.0	38.4	0.1	5.5	Very Low
270°-285°	1.0	37.7	0.1	5.4	Very Low
285°-300°	0.8	34.3	0.1	4.9	Very Low
300°-315°	1.1	42.7	0.2	6.1	Very Low
315°-330°	1.3	47.0	0.2	6.7	Very Low
330°-345°	1.5	48.7	0.2	7.0	Very Low
345°-360°	1.9	55.6	0.3	7.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

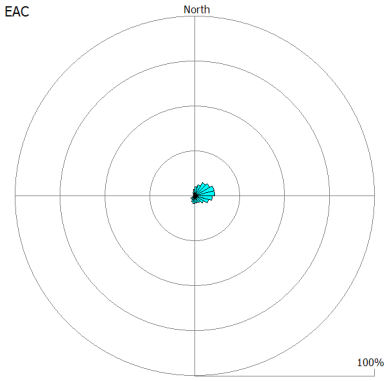
DS100 DIRECTIONAL DUST FLUX REPORT

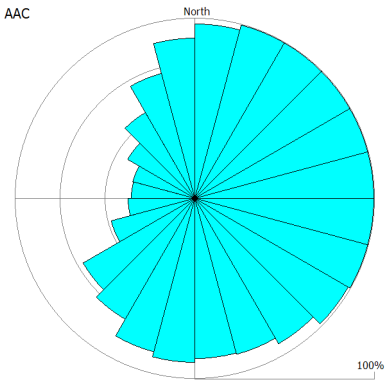
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	06-May-21	**Date In:**	13-May-21
Interval*:	7 days	**Our Ref:**	114569 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.8
Absolute Area Coverage (AAC%) / interval = 79.7
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 11.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	5.3	97.1	0.8	13.9	Medium
15°-30°	6.4	99.7	0.9	14.2	High
30°-45°	8.6	100.0	1.2	14.3	High
45°-60°	9.9	100.0	1.4	14.3	High
60°-75°	11.3	100.0	1.6	14.3	High
75°-90°	11.4	100.0	1.6	14.3	High
90°-105°	9.9	100.0	1.4	14.3	High
105°-120°	7.9	99.9	1.1	14.3	High
120°-135°	5.9	98.8	0.8	14.1	Medium
135°-150°	4.4	93.4	0.6	13.3	Low
150°-165°	4.0	89.7	0.6	12.8	Low
165°-180°	4.0	89.2	0.6	12.7	Low
180°-195°	4.4	91.3	0.6	13.0	Low
195°-210°	3.7	88.5	0.5	12.6	Low
210°-225°	2.8	77.6	0.4	11.1	Very Low
225°-240°	2.6	71.8	0.4	10.3	Very Low
240°-255°	1.4	48.5	0.2	6.9	Very Low
255°-270°	0.9	37.2	0.1	5.3	Very Low
270°-285°	0.9	35.7	0.1	5.1	Very Low
285°-300°	0.9	35.7	0.1	5.1	Very Low
300°-315°	1.2	43.2	0.2	6.2	Very Low
315°-330°	1.6	55.3	0.2	7.9	Very Low
330°-345°	2.3	71.9	0.3	10.3	Very Low
345°-360°	3.8	89.0	0.5	12.7	Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

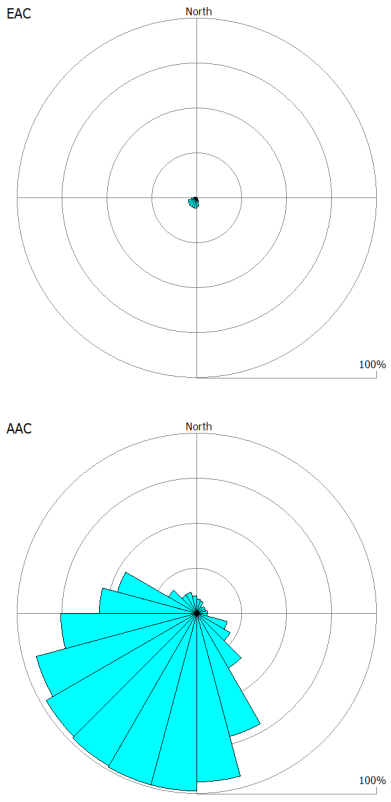
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	27-May-21	**Date In:**	03-Jun-21
Interval*:	7 days	**Our Ref:**	115205 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.9
Absolute Area Coverage (AAC%) / interval = 41.5
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 5.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	8.1	<0.1	1.2	Very Low
15°-30°	0.1	7.4	<0.1	1.1	Very Low
30°-45°	<0.1	4.5	<0.1	0.6	Very Low
45°-60°	<0.1	5.5	<0.1	0.8	Very Low
60°-75°	<0.1	5.1	<0.1	0.7	Very Low
75°-90°	0.1	6.4	<0.1	0.9	Very Low
90°-105°	<0.1	6.0	<0.1	0.9	Very Low
105°-120°	0.4	17.5	<0.1	2.5	Very Low
120°-135°	0.5	21.6	<0.1	3.1	Very Low
135°-150°	0.9	35.1	0.1	5.0	Very Low
150°-165°	2.6	70.8	0.4	10.1	Very Low
165°-180°	4.7	93.7	0.7	13.4	Medium
180°-195°	5.8	98.7	0.8	14.1	Medium
195°-210°	6.0	98.8	0.9	14.1	Medium
210°-225°	5.7	98.1	0.8	14.0	Medium
225°-240°	5.7	97.0	0.8	13.9	Medium
240°-255°	5.3	92.8	0.8	13.3	Medium
255°-270°	3.1	75.9	0.4	10.8	Very Low
270°-285°	1.7	54.4	0.2	7.8	Very Low
285°-300°	1.3	45.7	0.2	6.5	Very Low
300°-315°	0.3	18.4	<0.1	2.6	Very Low
315°-330°	0.2	11.9	<0.1	1.7	Very Low
330°-345°	0.3	12.2	<0.1	1.7	Very Low
345°-360°	0.2	9.8	<0.1	1.4	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

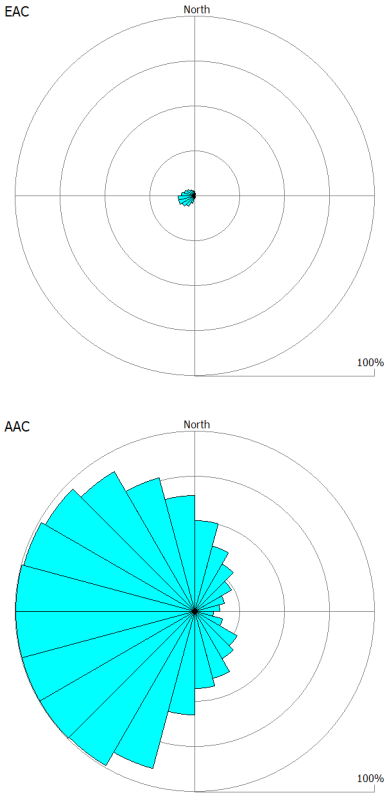
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	03-Jun-21	**Date In:**	10-Jun-21
Interval*:	7 days	**Our Ref:**	115462 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.3
Absolute Area Coverage (AAC%) / interval = 58.9
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 8.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.7	50.4	0.2	7.2	Very Low
15°-30°	0.9	37.6	0.1	5.4	Very Low
30°-45°	0.5	30.5	<0.1	4.4	Very Low
45°-60°	0.5	23.9	<0.1	3.4	Very Low
60°-75°	0.3	17.3	<0.1	2.5	Very Low
75°-90°	0.2	14.2	<0.1	2.0	Very Low
90°-105°	0.1	10.5	<0.1	1.5	Very Low
105°-120°	0.3	16.4	<0.1	2.3	Very Low
120°-135°	0.6	27.2	<0.1	3.9	Very Low
135°-150°	0.8	30.4	0.1	4.3	Very Low
150°-165°	1.0	38.8	0.1	5.5	Very Low
165°-180°	1.2	43.0	0.2	6.1	Very Low
180°-195°	1.8	57.8	0.3	8.3	Very Low
195°-210°	4.6	90.7	0.7	13.0	Medium
210°-225°	7.1	99.0	1.0	14.1	High
225°-240°	8.4	99.9	1.2	14.3	High
240°-255°	9.5	100.0	1.4	14.3	High
255°-270°	9.5	100.0	1.4	14.3	High
270°-285°	7.8	99.8	1.1	14.3	High
285°-300°	6.3	98.9	0.9	14.1	Medium
300°-315°	5.1	96.2	0.7	13.7	Medium
315°-330°	4.2	89.8	0.6	12.8	Low
330°-345°	3.2	76.9	0.5	11.0	Low
345°-360°	2.5	64.6	0.4	9.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

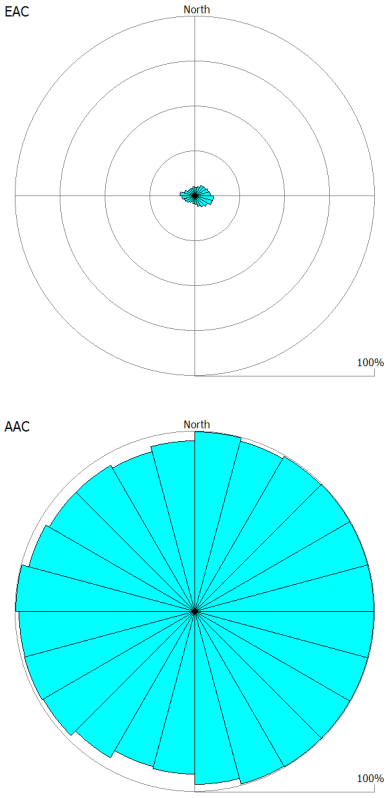
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	10-Jun-21	**Date In:**	17-Jun-21
Interval*:	7 days	**Our Ref:**	115658 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.4
Absolute Area Coverage (AAC%) / interval = 97.1
Effective Area Coverage (EAC%) / day = 0.9
Absolute Area Coverage (AAC%) / day = 13.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.9	99.7	0.7	14.2	High
15°-30°	5.4	97.9	0.8	14.0	Medium
30°-45°	6.8	99.6	1.0	14.2	High
45°-60°	7.4	100.0	1.1	14.3	High
60°-75°	8.1	100.0	1.2	14.3	High
75°-90°	8.9	100.0	1.3	14.3	High
90°-105°	10.6	100.0	1.5	14.3	High
105°-120°	10.1	100.0	1.4	14.3	High
120°-135°	8.4	100.0	1.2	14.3	High
135°-150°	7.2	99.8	1.0	14.3	High
150°-165°	6.3	99.3	0.9	14.2	High
165°-180°	4.9	96.3	0.7	13.8	Medium
180°-195°	4.3	90.5	0.6	12.9	Low
195°-210°	3.8	89.4	0.5	12.8	Low
210°-225°	4.5	94.1	0.6	13.4	Low
225°-240°	5.4	97.8	0.8	14.0	Medium
240°-255°	6.2	98.4	0.9	14.1	Medium
255°-270°	7.3	98.0	1.0	14.0	Medium
270°-285°	8.5	99.8	1.2	14.3	High
285°-300°	6.4	96.0	0.9	13.7	Medium
300°-315°	4.8	93.8	0.7	13.4	Medium
315°-330°	4.7	93.9	0.7	13.4	Medium
330°-345°	4.4	91.9	0.6	13.1	Low
345°-360°	5.1	94.9	0.7	13.6	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

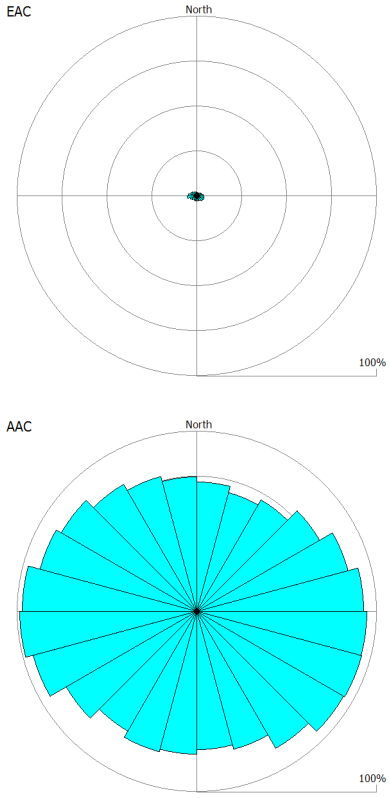
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	17-Jun-21	**Date In:**	25-Jun-21
Interval*:	8 days	**Our Ref:**	115901 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.3
Absolute Area Coverage (AAC%) / interval = 84.3
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 10.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	2.1	72.1	0.3	9.0	Very Low
15°-30°	1.9	68.4	0.2	8.6	Very Low
30°-45°	2.1	71.6	0.3	8.9	Very Low
45°-60°	2.6	79.0	0.3	9.9	Very Low
60°-75°	3.1	87.2	0.4	10.9	Very Low
75°-90°	3.8	93.1	0.5	11.6	Low
90°-105°	4.3	94.7	0.5	11.8	Low
105°-120°	4.4	95.2	0.6	11.9	Low
120°-135°	4.1	94.6	0.5	11.8	Low
135°-150°	3.5	88.0	0.4	11.0	Very Low
150°-165°	2.9	79.5	0.4	9.9	Very Low
165°-180°	2.8	76.9	0.4	9.6	Very Low
180°-195°	2.9	79.6	0.4	9.9	Very Low
195°-210°	3.1	81.0	0.4	10.1	Very Low
210°-225°	2.8	77.0	0.3	9.6	Very Low
225°-240°	3.3	84.0	0.4	10.5	Very Low
240°-255°	4.3	94.5	0.5	11.8	Low
255°-270°	5.4	98.6	0.7	12.3	Medium
270°-285°	4.7	97.2	0.6	12.2	Low
285°-300°	3.6	90.6	0.5	11.3	Low
300°-315°	3.3	87.3	0.4	10.9	Very Low
315°-330°	2.7	81.6	0.3	10.2	Very Low
330°-345°	2.4	77.6	0.3	9.7	Very Low
345°-360°	2.3	75.0	0.3	9.4	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

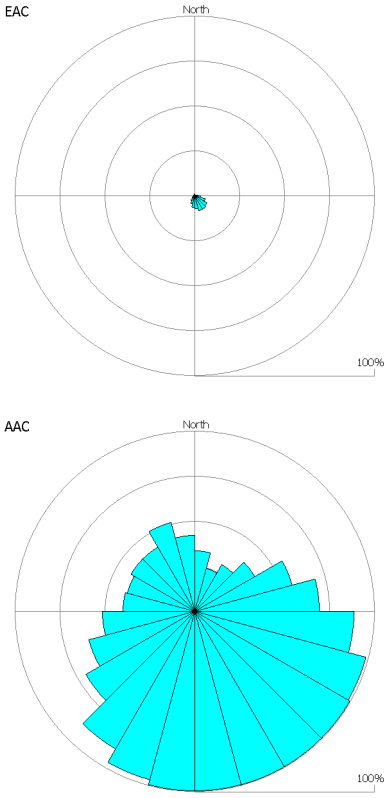
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	01-Jul-21	**Date In:**	08-Jul-21
Interval*:	7 days	**Our Ref:**	116324 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.0
Absolute Area Coverage (AAC%) / interval = 65.2
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.7	33.7	<0.1	4.8	Very Low
15°-30°	0.4	24.7	<0.1	3.5	Very Low
30°-45°	0.5	30.3	<0.1	4.3	Very Low
45°-60°	0.7	38.8	<0.1	5.5	Very Low
60°-75°	1.4	56.4	0.2	8.1	Very Low
75°-90°	2.0	69.6	0.3	9.9	Very Low
90°-105°	3.5	88.9	0.5	12.7	Low
105°-120°	6.1	98.7	0.9	14.1	Medium
120°-135°	8.0	100.0	1.1	14.3	High
135°-150°	8.9	100.0	1.3	14.3	High
150°-165°	8.7	100.0	1.2	14.3	High
165°-180°	7.5	99.9	1.1	14.3	High
180°-195°	6.4	99.7	0.9	14.2	High
195°-210°	4.9	96.8	0.7	13.8	Medium
210°-225°	3.6	88.5	0.5	12.6	Low
225°-240°	1.9	70.3	0.3	10.0	Very Low
240°-255°	1.3	61.2	0.2	8.7	Very Low
255°-270°	0.9	51.5	0.1	7.4	Very Low
270°-285°	0.8	40.1	0.1	5.7	Very Low
285°-300°	0.7	39.2	0.1	5.6	Very Low
300°-315°	0.6	41.4	<0.1	5.9	Very Low
315°-330°	0.7	41.4	<0.1	5.9	Very Low
330°-345°	1.3	51.3	0.2	7.3	Very Low
345°-360°	0.9	42.1	0.1	6.0	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

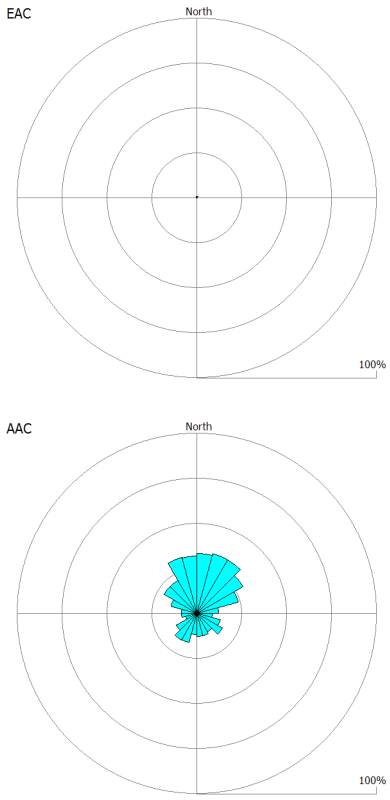
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	08-Jul-21	**Date In:**	15-Jul-21
Interval*:	7 days	**Our Ref:**	116540 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 18.8
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	33.3	0.1	4.8	Very Low
15°-30°	1.0	34.4	0.1	4.9	Very Low
30°-45°	1.2	34.4	0.2	4.9	Very Low
45°-60°	0.7	29.8	<0.1	4.3	Very Low
60°-75°	0.5	23.9	<0.1	3.4	Very Low
75°-90°	0.2	12.3	<0.1	1.8	Very Low
90°-105°	0.1	8.9	<0.1	1.3	Very Low
105°-120°	0.3	13.9	<0.1	2.0	Very Low
120°-135°	0.4	16.8	<0.1	2.4	Very Low
135°-150°	0.4	11.9	<0.1	1.7	Very Low
150°-165°	0.3	13.1	<0.1	1.9	Very Low
165°-180°	0.4	13.0	<0.1	1.9	Very Low
180°-195°	0.3	12.0	<0.1	1.7	Very Low
195°-210°	0.5	16.8	<0.1	2.4	Very Low
210°-225°	0.5	17.3	<0.1	2.5	Very Low
225°-240°	0.3	13.2	<0.1	1.9	Very Low
240°-255°	<0.1	6.5	<0.1	0.9	Very Low
255°-270°	0.2	8.7	<0.1	1.2	Very Low
270°-285°	0.2	8.7	<0.1	1.2	Very Low
285°-300°	0.3	15.1	<0.1	2.2	Very Low
300°-315°	0.5	21.1	<0.1	3.0	Very Low
315°-330°	0.3	21.3	<0.1	3.0	Very Low
330°-345°	0.7	32.4	0.1	4.6	Very Low
345°-360°	0.8	31.9	0.1	4.6	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

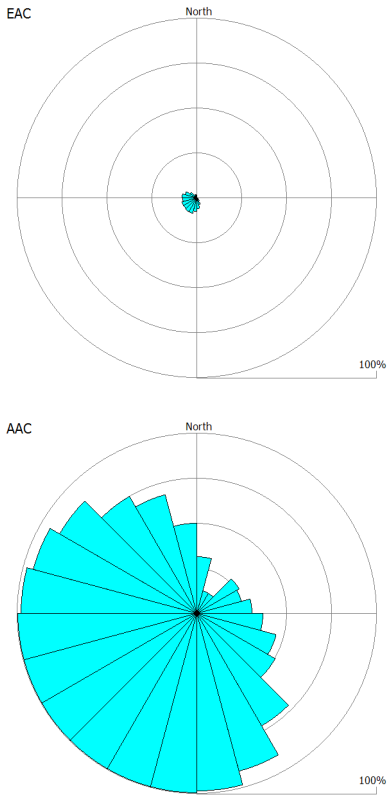
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	15-Jul-21	**Date In:**	22-Jul-21
Interval*:	7 days	**Our Ref:**	116762 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.0
Absolute Area Coverage (AAC%) / interval = 67.1
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 9.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.9	31.6	0.1	4.5	Very Low
15°-30°	0.3	13.0	<0.1	1.9	Very Low
30°-45°	0.2	13.1	<0.1	1.9	Very Low
45°-60°	0.6	27.4	<0.1	3.9	Very Low
60°-75°	0.4	25.7	<0.1	3.7	Very Low
75°-90°	0.5	30.7	<0.1	4.4	Very Low
90°-105°	0.7	36.9	<0.1	5.3	Very Low
105°-120°	1.0	46.0	0.1	6.6	Very Low
120°-135°	1.2	50.7	0.2	7.2	Very Low
135°-150°	2.2	72.4	0.3	10.3	Very Low
150°-165°	4.1	91.0	0.6	13.0	Low
165°-180°	6.4	98.8	0.9	14.1	Medium
180°-195°	7.8	99.7	1.1	14.2	High
195°-210°	9.0	100.0	1.3	14.3	High
210°-225°	9.1	100.0	1.3	14.3	High
225°-240°	8.9	99.9	1.3	14.3	High
240°-255°	8.9	100.0	1.3	14.3	High
255°-270°	8.1	99.7	1.2	14.2	High
270°-285°	8.2	97.9	1.2	14.0	Medium
285°-300°	7.0	94.3	1.0	13.5	Medium
300°-315°	4.4	88.3	0.6	12.6	Low
315°-330°	2.3	75.3	0.3	10.8	Very Low
330°-345°	2.1	68.3	0.3	9.8	Very Low
345°-360°	1.5	50.2	0.2	7.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

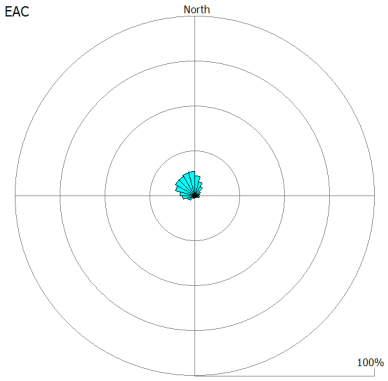
DS100 DIRECTIONAL DUST FLUX REPORT

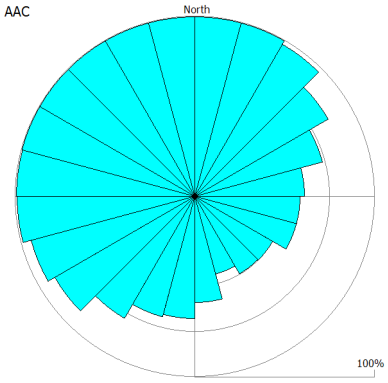
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	22-Jul-21	**Date In:**	29-Jul-21
Interval*:	7 days	**Our Ref:**	117043 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.7
Absolute Area Coverage (AAC%) / interval = 80.8
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 11.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	11.1	100.0	1.6	14.3	High
15°-30°	8.3	99.9	1.2	14.3	High
30°-45°	6.2	97.8	0.9	14.0	Medium
45°-60°	3.7	86.0	0.5	12.3	Low
60°-75°	3.1	73.6	0.4	10.5	Very Low
75°-90°	2.2	61.3	0.3	8.8	Very Low
90°-105°	2.5	58.8	0.4	8.4	Very Low
105°-120°	2.7	58.8	0.4	8.4	Very Low
120°-135°	1.7	50.0	0.2	7.1	Very Low
135°-150°	1.3	50.0	0.2	7.1	Very Low
150°-165°	0.8	44.8	0.1	6.4	Very Low
165°-180°	1.2	59.2	0.2	8.5	Very Low
180°-195°	1.4	67.9	0.2	9.7	Very Low
195°-210°	1.5	69.5	0.2	9.9	Very Low
210°-225°	1.8	78.5	0.3	11.2	Very Low
225°-240°	3.6	90.0	0.5	12.9	Low
240°-255°	4.6	94.6	0.7	13.5	Medium
255°-270°	7.0	99.2	1.0	14.2	High
270°-285°	8.5	99.6	1.2	14.2	High
285°-300°	11.1	100.0	1.6	14.3	High
300°-315°	12.5	100.0	1.8	14.3	High
315°-330°	12.6	100.0	1.8	14.3	High
330°-345°	13.3	100.0	1.9	14.3	High
345°-360°	13.7	100.0	2.0	14.3	Very High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

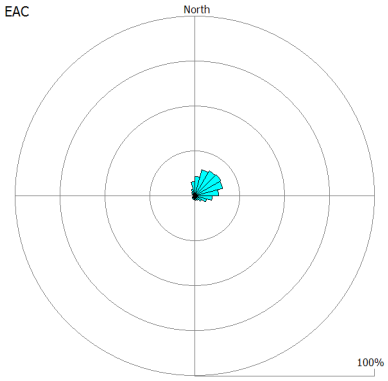
DS100 DIRECTIONAL DUST FLUX REPORT

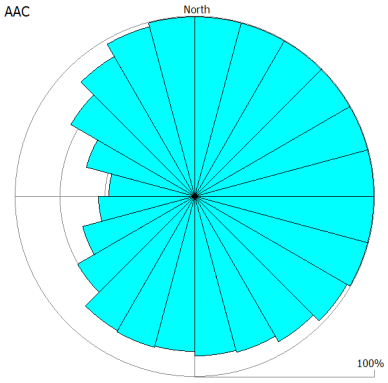
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	29-Jul-21	**Date In:**	05-Aug-21
Interval*:	7 days	**Our Ref:**	117243 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.2
Absolute Area Coverage (AAC%) / interval = 87.5
Effective Area Coverage (EAC%) / day = 0.9
Absolute Area Coverage (AAC%) / day = 12.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	10.7	100.0	1.5	14.3	High
15°-30°	15.2	100.0	2.2	14.3	Very High
30°-45°	16.2	100.0	2.3	14.3	Very High
45°-60°	17.0	100.0	2.4	14.3	Very High
60°-75°	16.2	100.0	2.3	14.3	Very High
75°-90°	13.4	100.0	1.9	14.3	High
90°-105°	9.9	100.0	1.4	14.3	High
105°-120°	6.8	100.0	1.0	14.3	High
120°-135°	4.4	98.0	0.6	14.0	Low
135°-150°	3.2	93.3	0.5	13.3	Low
150°-165°	2.6	90.0	0.4	12.9	Very Low
165°-180°	2.8	88.7	0.4	12.7	Very Low
180°-195°	2.3	86.2	0.3	12.3	Very Low
195°-210°	2.4	87.1	0.3	12.4	Very Low
210°-225°	2.3	86.1	0.3	12.3	Very Low
225°-240°	1.9	75.7	0.3	10.8	Very Low
240°-255°	1.2	64.7	0.2	9.2	Very Low
255°-270°	0.8	53.7	0.1	7.7	Very Low
270°-285°	0.7	47.9	<0.1	6.8	Very Low
285°-300°	1.2	62.6	0.2	8.9	Very Low
300°-315°	2.3	79.7	0.3	11.4	Very Low
315°-330°	2.6	89.9	0.4	12.8	Very Low
330°-345°	4.2	97.5	0.6	13.9	Low
345°-360°	8.0	99.9	1.1	14.3	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

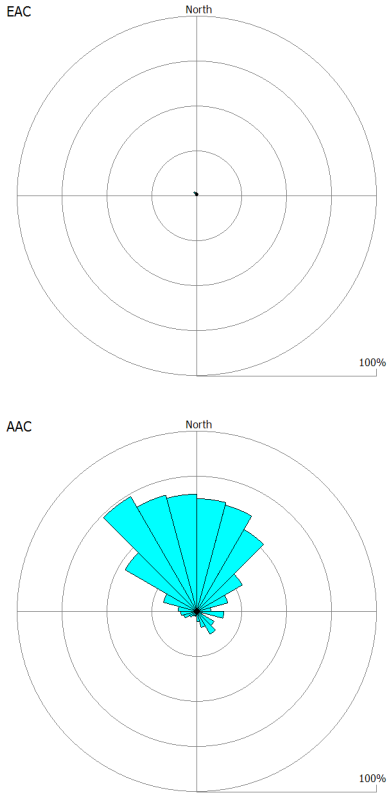
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	05-Aug-21	**Date In:**	12-Aug-21
Interval*:	7 days	**Our Ref:**	117531 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.6
Absolute Area Coverage (AAC%) / interval = 25.2
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.8	62.8	0.3	9.0	Very Low
15°-30°	1.7	61.3	0.2	8.8	Very Low
30°-45°	1.3	52.6	0.2	7.5	Very Low
45°-60°	0.5	29.4	<0.1	4.2	Very Low
60°-75°	0.2	18.0	<0.1	2.6	Very Low
75°-90°	<0.1	8.2	<0.1	1.2	Very Low
90°-105°	0.4	15.2	<0.1	2.2	Very Low
105°-120°	<0.1	3.3	<0.1	0.5	Very Low
120°-135°	0.2	11.2	<0.1	1.6	Very Low
135°-150°	0.2	14.9	<0.1	2.1	Very Low
150°-165°	0.2	9.6	<0.1	1.4	Very Low
165°-180°	<0.1	5.7	<0.1	0.8	Very Low
180°-195°	<0.1	2.8	<0.1	0.4	Very Low
195°-210°	<0.1	3.1	<0.1	0.4	Very Low
210°-225°	<0.1	3.3	<0.1	0.5	Very Low
225°-240°	<0.1	4.9	<0.1	0.7	Very Low
240°-255°	<0.1	7.5	<0.1	1.1	Very Low
255°-270°	0.1	9.2	<0.1	1.3	Very Low
270°-285°	0.1	10.4	<0.1	1.5	Very Low
285°-300°	0.4	19.3	<0.1	2.8	Very Low
300°-315°	1.2	46.2	0.2	6.6	Very Low
315°-330°	2.8	73.9	0.4	10.6	Very Low
330°-345°	2.0	67.0	0.3	9.6	Very Low
345°-360°	1.9	65.0	0.3	9.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

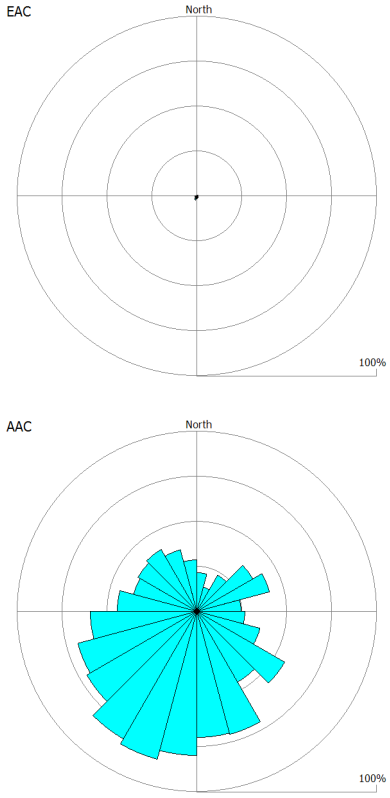
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	12-Aug-21	**Date In:**	19-Aug-21
Interval*:	7 days	**Our Ref:**	117647 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.9
Absolute Area Coverage (AAC%) / interval = 47.4
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 6.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	21.7	<0.1	3.1	Very Low
15°-30°	0.2	14.2	<0.1	2.0	Very Low
30°-45°	0.4	23.4	<0.1	3.3	Very Low
45°-60°	0.7	36.2	0.1	5.2	Very Low
60°-75°	0.8	42.1	0.1	6.0	Very Low
75°-90°	0.3	24.9	<0.1	3.6	Very Low
90°-105°	0.3	26.9	<0.1	3.8	Very Low
105°-120°	0.4	36.4	<0.1	5.2	Very Low
120°-135°	1.2	56.5	0.2	8.1	Very Low
135°-150°	0.9	45.6	0.1	6.5	Very Low
150°-165°	1.6	70.9	0.2	10.1	Very Low
165°-180°	1.3	70.2	0.2	10.0	Very Low
180°-195°	2.0	80.0	0.3	11.4	Very Low
195°-210°	2.6	85.0	0.4	12.1	Very Low
210°-225°	2.1	82.1	0.3	11.7	Very Low
225°-240°	1.1	70.9	0.2	10.1	Very Low
240°-255°	1.3	68.7	0.2	9.8	Very Low
255°-270°	1.1	59.5	0.2	8.5	Very Low
270°-285°	0.7	44.4	0.1	6.3	Very Low
285°-300°	0.5	36.4	<0.1	5.2	Very Low
300°-315°	0.6	38.2	<0.1	5.5	Very Low
315°-330°	0.7	39.7	<0.1	5.7	Very Low
330°-345°	0.5	35.4	<0.1	5.1	Very Low
345°-360°	0.4	28.7	<0.1	4.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

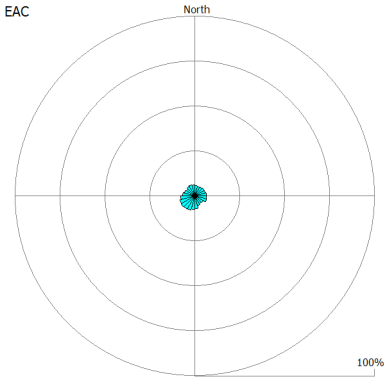
DS100 DIRECTIONAL DUST FLUX REPORT

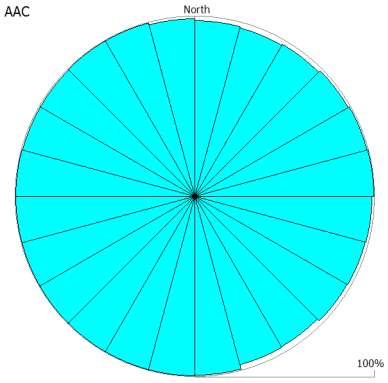
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	19-Aug-21	**Date In:**	26-Aug-21
Interval*:	7 days	**Our Ref:**	117946 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.8
Absolute Area Coverage (AAC%) / interval = 99.0
Effective Area Coverage (EAC%) / day = 1.0
Absolute Area Coverage (AAC%) / day = 14.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	5.9	97.7	0.8	14.0	Medium
15°-30°	5.6	96.9	0.8	13.8	Medium
30°-45°	6.0	97.7	0.9	14.0	Medium
45°-60°	6.4	98.9	0.9	14.1	Medium
60°-75°	6.3	99.5	0.9	14.2	High
75°-90°	6.6	99.8	0.9	14.3	High
90°-105°	6.6	98.7	0.9	14.1	Medium
105°-120°	7.0	98.4	1.0	14.1	Medium
120°-135°	5.7	97.9	0.8	14.0	Medium
135°-150°	5.0	96.5	0.7	13.8	Medium
150°-165°	6.1	96.9	0.9	13.8	Medium
165°-180°	7.4	99.4	1.1	14.2	High
180°-195°	7.7	100.0	1.1	14.3	High
195°-210°	8.5	100.0	1.2	14.3	High
210°-225°	8.7	100.0	1.2	14.3	High
225°-240°	9.0	100.0	1.3	14.3	High
240°-255°	8.8	100.0	1.3	14.3	High
255°-270°	8.1	100.0	1.2	14.3	High
270°-285°	7.0	99.8	1.0	14.3	High
285°-300°	6.1	99.6	0.9	14.2	High
300°-315°	5.6	99.3	0.8	14.2	High
315°-330°	6.2	99.8	0.9	14.3	High
330°-345°	6.5	99.7	0.9	14.2	High
345°-360°	6.2	98.7	0.9	14.1	Medium





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

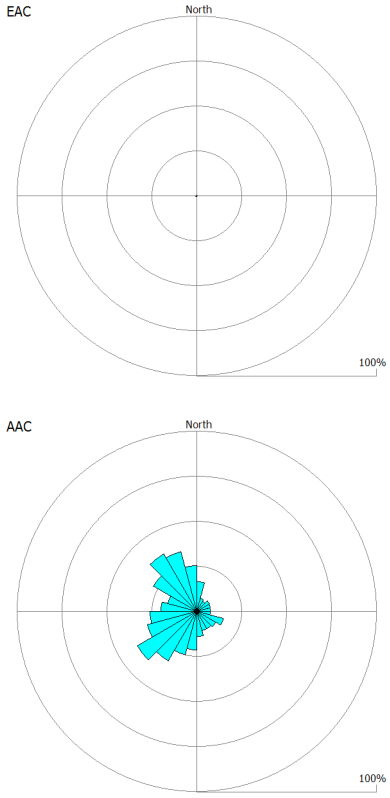
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	26-Aug-21	**Date In:**	02-Sep-21
Interval*:	7 days	**Our Ref:**	118142 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 19.2
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 2.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	16.5	<0.1	2.4	Very Low
15°-30°	0.1	7.6	<0.1	1.1	Very Low
30°-45°	0.1	6.5	<0.1	0.9	Very Low
45°-60°	0.1	8.5	<0.1	1.2	Very Low
60°-75°	<0.1	8.0	<0.1	1.1	Very Low
75°-90°	0.1	7.8	<0.1	1.1	Very Low
90°-105°	0.1	7.5	<0.1	1.1	Very Low
105°-120°	0.4	15.6	<0.1	2.2	Very Low
120°-135°	0.2	12.2	<0.1	1.7	Very Low
135°-150°	0.2	11.3	<0.1	1.6	Very Low
150°-165°	0.2	11.4	<0.1	1.6	Very Low
165°-180°	0.3	14.0	<0.1	2.0	Very Low
180°-195°	0.5	21.6	<0.1	3.1	Very Low
195°-210°	0.4	25.0	<0.1	3.6	Very Low
210°-225°	0.7	32.1	<0.1	4.6	Very Low
225°-240°	1.0	38.4	0.1	5.5	Very Low
240°-255°	0.6	28.6	<0.1	4.1	Very Low
255°-270°	0.5	26.4	<0.1	3.8	Very Low
270°-285°	0.4	20.3	<0.1	2.9	Very Low
285°-300°	0.3	17.0	<0.1	2.4	Very Low
300°-315°	0.4	28.1	<0.1	4.0	Very Low
315°-330°	0.5	36.8	<0.1	5.3	Very Low
330°-345°	0.4	34.4	<0.1	4.9	Very Low
345°-360°	0.3	25.6	<0.1	3.7	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

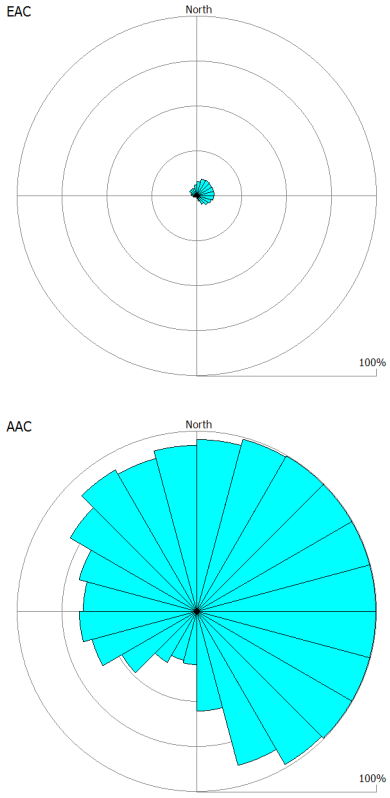
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	02-Sep-21	**Date In:**	09-Sep-21
Interval*:	7 days	**Our Ref:**	118348 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.4
Absolute Area Coverage (AAC%) / interval = 78.6
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 11.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	8.2	95.7	1.2	13.7	Medium
15°-30°	9.9	99.0	1.4	14.1	High
30°-45°	10.1	100.0	1.4	14.3	High
45°-60°	9.8	100.0	1.4	14.3	High
60°-75°	9.9	100.0	1.4	14.3	High
75°-90°	9.8	100.0	1.4	14.3	High
90°-105°	9.6	100.0	1.4	14.3	High
105°-120°	8.5	100.0	1.2	14.3	High
120°-135°	7.4	100.0	1.1	14.3	High
135°-150°	5.5	98.4	0.8	14.1	Medium
150°-165°	3.5	88.6	0.5	12.7	Low
165°-180°	1.7	55.4	0.2	7.9	Very Low
180°-195°	0.7	30.0	0.1	4.3	Very Low
195°-210°	0.6	28.4	<0.1	4.1	Very Low
210°-225°	0.8	33.0	0.1	4.7	Very Low
225°-240°	1.3	48.3	0.2	6.9	Very Low
240°-255°	2.0	60.7	0.3	8.7	Very Low
255°-270°	2.4	65.7	0.3	9.4	Very Low
270°-285°	2.9	63.5	0.4	9.1	Very Low
285°-300°	3.8	68.1	0.5	9.7	Low
300°-315°	4.9	81.7	0.7	11.7	Medium
315°-330°	4.8	90.8	0.7	13.0	Medium
330°-345°	4.5	88.1	0.6	12.6	Low
345°-360°	6.3	92.2	0.9	13.2	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

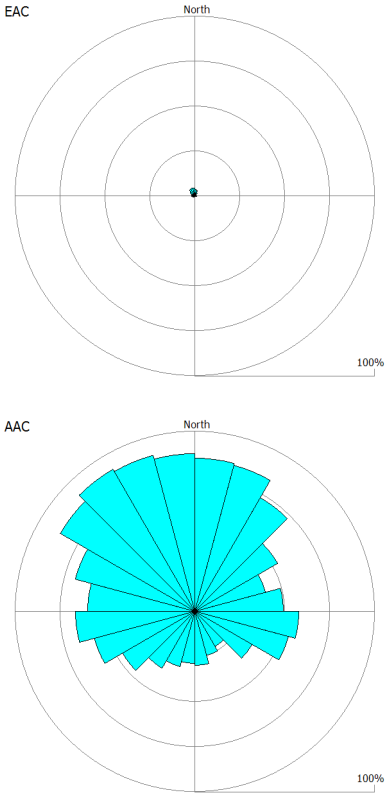
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	01-Oct-21	**Date In:**	07-Oct-21
Interval*:	6 days	**Our Ref:**	119226 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.8
Absolute Area Coverage (AAC%) / interval = 57.0
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 9.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.8	85.3	0.6	14.2	Low
15°-30°	3.5	84.0	0.6	14.0	Low
30°-45°	2.2	73.0	0.4	12.2	Very Low
45°-60°	1.1	53.3	0.2	8.9	Very Low
60°-75°	0.7	40.8	0.1	6.8	Very Low
75°-90°	0.8	49.6	0.1	8.3	Very Low
90°-105°	1.2	58.1	0.2	9.7	Very Low
105°-120°	1.3	54.1	0.2	9.0	Very Low
120°-135°	0.7	37.0	0.1	6.2	Very Low
135°-150°	0.3	22.8	<0.1	3.8	Very Low
150°-165°	0.4	25.6	<0.1	4.3	Very Low
165°-180°	0.6	30.2	<0.1	5.0	Very Low
180°-195°	0.5	29.2	<0.1	4.9	Very Low
195°-210°	0.5	32.0	<0.1	5.3	Very Low
210°-225°	0.8	36.4	0.1	6.1	Very Low
225°-240°	1.2	46.7	0.2	7.8	Very Low
240°-255°	1.7	58.1	0.3	9.7	Very Low
255°-270°	2.1	66.5	0.4	11.1	Very Low
270°-285°	1.9	59.6	0.3	9.9	Very Low
285°-300°	2.1	69.1	0.3	11.5	Very Low
300°-315°	3.3	86.6	0.5	14.4	Low
315°-330°	4.4	91.1	0.7	15.2	Medium
330°-345°	4.9	89.8	0.8	15.0	Medium
345°-360°	4.4	87.8	0.7	14.6	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

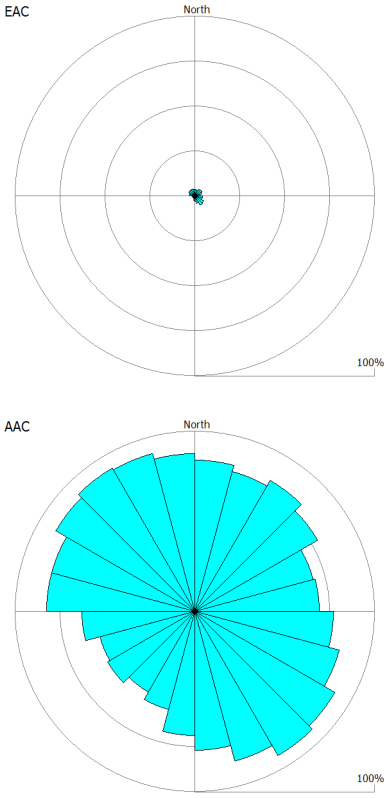
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	07-Oct-21	**Date In:**	14-Oct-21
Interval*:	7 days	**Our Ref:**	119416 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.6
Absolute Area Coverage (AAC%) / interval = 77.1
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 11.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.7	84.0	0.5	12.0	Low
15°-30°	3.5	80.4	0.5	11.5	Low
30°-45°	4.5	84.1	0.6	12.0	Low
45°-60°	5.0	79.0	0.7	11.3	Medium
60°-75°	4.2	68.5	0.6	9.8	Low
75°-90°	3.2	69.5	0.5	9.9	Low
90°-105°	4.3	77.3	0.6	11.0	Low
105°-120°	4.6	83.3	0.7	11.9	Medium
120°-135°	6.0	90.3	0.9	12.9	Medium
135°-150°	6.3	92.8	0.9	13.3	Medium
150°-165°	4.6	86.2	0.7	12.3	Medium
165°-180°	3.2	77.2	0.5	11.0	Low
180°-195°	2.5	69.2	0.4	9.9	Very Low
195°-210°	1.6	56.8	0.2	8.1	Very Low
210°-225°	1.4	51.9	0.2	7.4	Very Low
225°-240°	1.6	56.3	0.2	8.0	Very Low
240°-255°	1.3	54.8	0.2	7.8	Very Low
255°-270°	1.7	63.2	0.2	9.0	Very Low
270°-285°	3.1	82.6	0.4	11.8	Very Low
285°-300°	3.3	82.6	0.5	11.8	Low
300°-315°	4.2	89.6	0.6	12.8	Low
315°-330°	4.1	92.1	0.6	13.2	Low
330°-345°	4.0	91.1	0.6	13.0	Low
345°-360°	3.8	87.8	0.5	12.5	Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

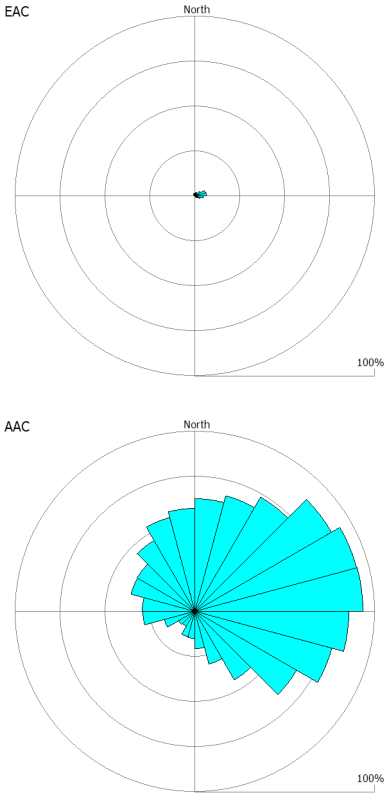
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	14-Oct-21	**Date In:**	21-Oct-21
Interval*:	7 days	**Our Ref:**	119649 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.8
Absolute Area Coverage (AAC%) / interval = 48.4
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 6.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.7	62.5	0.2	8.9	Very Low
15°-30°	1.8	66.7	0.3	9.5	Very Low
30°-45°	2.3	73.4	0.3	10.5	Very Low
45°-60°	3.9	88.1	0.6	12.6	Low
60°-75°	6.3	93.2	0.9	13.3	Medium
75°-90°	6.6	93.7	0.9	13.4	Medium
90°-105°	4.8	86.1	0.7	12.3	Medium
105°-120°	3.2	79.0	0.5	11.3	Low
120°-135°	2.1	65.5	0.3	9.4	Very Low
135°-150°	1.1	44.2	0.2	6.3	Very Low
150°-165°	0.7	30.5	0.1	4.4	Very Low
165°-180°	0.4	20.9	<0.1	3.0	Very Low
180°-195°	0.2	15.1	<0.1	2.2	Very Low
195°-210°	0.2	14.7	<0.1	2.1	Very Low
210°-225°	<0.1	9.7	<0.1	1.4	Very Low
225°-240°	0.1	10.5	<0.1	1.5	Very Low
240°-255°	0.3	17.5	<0.1	2.5	Very Low
255°-270°	0.5	29.1	<0.1	4.2	Very Low
270°-285°	0.5	29.4	<0.1	4.2	Very Low
285°-300°	0.8	36.9	0.1	5.3	Very Low
300°-315°	0.8	37.2	0.1	5.3	Very Low
315°-330°	1.1	45.6	0.2	6.5	Very Low
330°-345°	1.5	54.0	0.2	7.7	Very Low
345°-360°	1.6	57.5	0.2	8.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

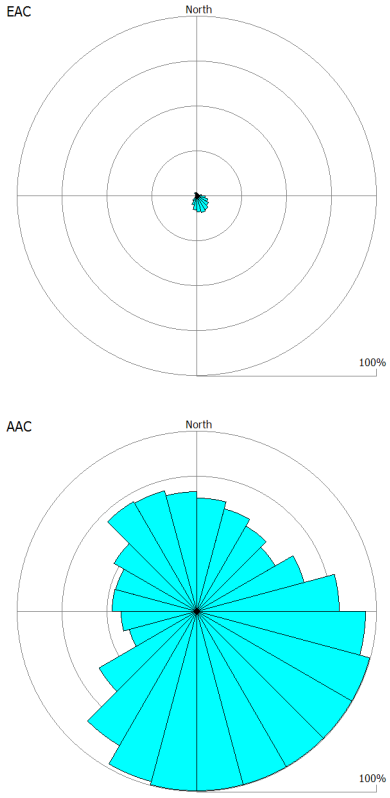
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	21-Oct-21	**Date In:**	27-Oct-21
Interval*:	6 days	**Our Ref:**	120336 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.6
Absolute Area Coverage (AAC%) / interval = 72.8
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 12.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.8	63.1	0.3	10.5	Very Low
15°-30°	1.6	59.0	0.3	9.8	Very Low
30°-45°	1.3	54.9	0.2	9.1	Very Low
45°-60°	1.0	50.5	0.2	8.4	Very Low
60°-75°	1.6	61.9	0.3	10.3	Very Low
75°-90°	2.6	79.6	0.4	13.3	Very Low
90°-105°	4.8	94.2	0.8	15.7	Medium
105°-120°	6.6	100.0	1.1	16.7	High
120°-135°	7.7	99.8	1.3	16.6	High
135°-150°	9.2	100.0	1.5	16.7	High
150°-165°	9.9	100.0	1.7	16.7	High
165°-180°	9.2	100.0	1.5	16.7	High
180°-195°	8.1	100.0	1.3	16.7	High
195°-210°	5.7	98.2	0.9	16.4	Medium
210°-225°	3.3	86.3	0.5	14.4	Low
225°-240°	1.7	62.9	0.3	10.5	Very Low
240°-255°	0.8	39.1	0.1	6.5	Very Low
255°-270°	0.9	42.4	0.1	7.1	Very Low
270°-285°	1.0	47.5	0.2	7.9	Very Low
285°-300°	1.0	47.0	0.2	7.8	Very Low
300°-315°	1.4	53.4	0.2	8.9	Very Low
315°-330°	2.2	70.5	0.4	11.7	Very Low
330°-345°	2.0	69.3	0.3	11.6	Very Low
345°-360°	1.9	66.6	0.3	11.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

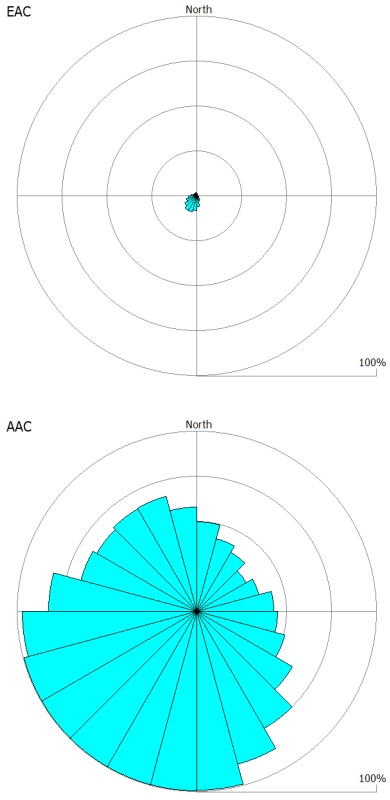
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	28-Oct-21	**Date In:**	04-Nov-21
Interval*:	7 days	**Our Ref:**	120076 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.3
Absolute Area Coverage (AAC%) / interval = 69.3
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 9.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.2	50.0	0.2	7.1	Very Low
15°-30°	0.8	41.8	0.1	6.0	Very Low
30°-45°	0.6	38.2	<0.1	5.5	Very Low
45°-60°	0.4	32.0	<0.1	4.6	Very Low
60°-75°	0.6	36.0	<0.1	5.1	Very Low
75°-90°	0.9	43.0	0.1	6.1	Very Low
90°-105°	1.0	45.1	0.1	6.4	Very Low
105°-120°	1.4	50.9	0.2	7.3	Very Low
120°-135°	1.8	61.7	0.3	8.8	Very Low
135°-150°	2.6	75.1	0.4	10.7	Very Low
150°-165°	3.5	88.1	0.5	12.6	Low
165°-180°	6.3	99.5	0.9	14.2	High
180°-195°	8.5	100.0	1.2	14.3	High
195°-210°	9.6	100.0	1.4	14.3	High
210°-225°	9.4	100.0	1.3	14.3	High
225°-240°	8.1	100.0	1.2	14.3	High
240°-255°	6.3	100.0	0.9	14.3	High
255°-270°	4.7	97.4	0.7	13.9	Medium
270°-285°	3.3	82.8	0.5	11.8	Low
285°-300°	2.0	66.9	0.3	9.6	Very Low
300°-315°	2.0	64.5	0.3	9.2	Very Low
315°-330°	1.9	65.8	0.3	9.4	Very Low
330°-345°	1.8	66.1	0.3	9.4	Very Low
345°-360°	1.5	58.2	0.2	8.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

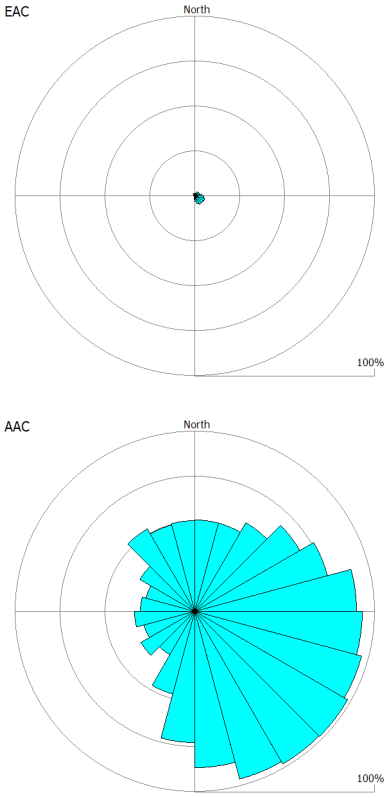
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	04-Nov-21	**Date In:**	11-Nov-21
Interval*:	7 days	**Our Ref:**	120209 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.5
Absolute Area Coverage (AAC%) / interval = 60.7
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 8.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.7	50.9	0.2	7.3	Very Low
15°-30°	1.7	51.0	0.2	7.3	Very Low
30°-45°	2.6	57.0	0.4	8.1	Very Low
45°-60°	3.2	67.6	0.5	9.7	Low
60°-75°	3.1	76.6	0.4	10.9	Very Low
75°-90°	4.0	90.3	0.6	12.9	Low
90°-105°	5.1	93.3	0.7	13.3	Medium
105°-120°	5.8	96.1	0.8	13.7	Medium
120°-135°	5.5	98.6	0.8	14.1	Medium
135°-150°	5.5	98.1	0.8	14.0	Medium
150°-165°	5.0	96.5	0.7	13.8	Medium
165°-180°	3.5	86.9	0.5	12.4	Low
180°-195°	2.3	73.1	0.3	10.4	Very Low
195°-210°	1.2	47.6	0.2	6.8	Very Low
210°-225°	0.5	27.9	<0.1	4.0	Very Low
225°-240°	0.7	35.0	0.1	5.0	Very Low
240°-255°	0.6	29.4	<0.1	4.2	Very Low
255°-270°	0.8	33.8	0.1	4.8	Very Low
270°-285°	0.7	30.7	<0.1	4.4	Very Low
285°-300°	0.6	28.4	<0.1	4.1	Very Low
300°-315°	0.7	35.5	0.1	5.1	Very Low
315°-330°	1.5	53.0	0.2	7.6	Very Low
330°-345°	1.4	49.9	0.2	7.1	Very Low
345°-360°	1.5	50.4	0.2	7.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

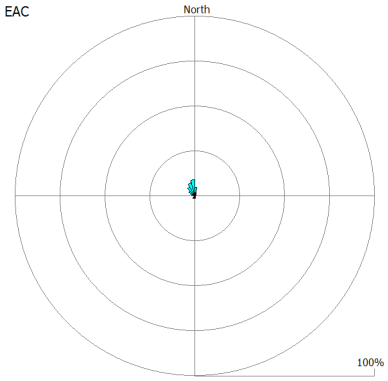
DS100 DIRECTIONAL DUST FLUX REPORT

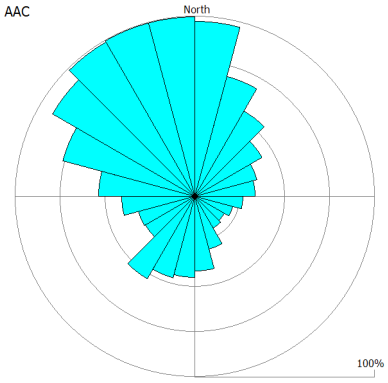
Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	11-Nov-21	**Date In:**	18-Nov-21
Interval*:	7 days	**Our Ref:**	120408 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.1
Absolute Area Coverage (AAC%) / interval = 52.7
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 7.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.9	97.5	0.7	13.9	Medium
15°-30°	2.1	69.0	0.3	9.9	Very Low
30°-45°	1.4	54.7	0.2	7.8	Very Low
45°-60°	0.9	43.3	0.1	6.2	Very Low
60°-75°	0.6	35.7	<0.1	5.1	Very Low
75°-90°	0.6	33.9	<0.1	4.8	Very Low
90°-105°	0.4	26.8	<0.1	3.8	Very Low
105°-120°	0.3	21.8	<0.1	3.1	Very Low
120°-135°	0.2	19.1	<0.1	2.7	Very Low
135°-150°	0.2	20.5	<0.1	2.9	Very Low
150°-165°	0.8	30.7	0.1	4.4	Very Low
165°-180°	1.6	41.8	0.2	6.0	Very Low
180°-195°	1.4	45.2	0.2	6.5	Very Low
195°-210°	1.6	46.8	0.2	6.7	Very Low
210°-225°	1.9	53.1	0.3	7.6	Very Low
225°-240°	0.5	32.1	<0.1	4.6	Very Low
240°-255°	0.5	32.7	<0.1	4.7	Very Low
255°-270°	0.7	40.7	<0.1	5.8	Very Low
270°-285°	1.1	53.6	0.2	7.7	Very Low
285°-300°	2.2	76.3	0.3	10.9	Very Low
300°-315°	4.1	91.5	0.6	13.1	Low
315°-330°	6.0	98.9	0.9	14.1	Medium
330°-345°	7.7	100.0	1.1	14.3	High
345°-360°	9.2	100.0	1.3	14.3	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

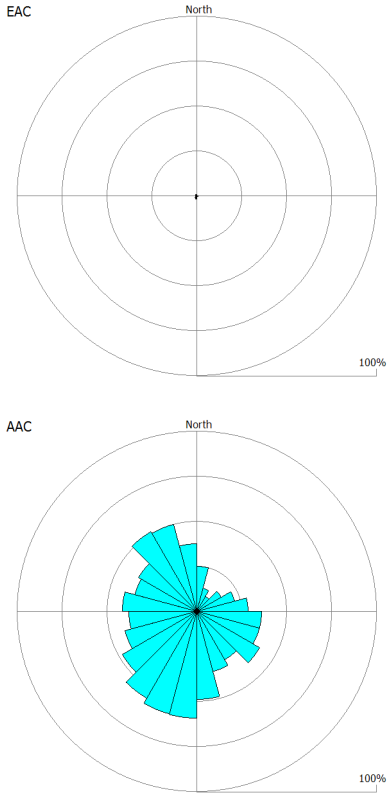
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Hanson Aggregates	**Site:**	Craig-Yr-Hesg Quarry
Point:	1 (Primary.)		
Date Out:	18-Nov-21	**Date In:**	25-Nov-21
Interval*:	7 days	**Our Ref:**	120581 / 1 / ZCRAIG

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.8
Absolute Area Coverage (AAC%) / interval = 37.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	25.1	<0.1	3.6	Very Low
15°-30°	0.2	13.4	<0.1	1.9	Very Low
30°-45°	0.1	9.9	<0.1	1.4	Very Low
45°-60°	0.2	15.9	<0.1	2.3	Very Low
60°-75°	0.3	21.9	<0.1	3.1	Very Low
75°-90°	0.5	28.8	<0.1	4.1	Very Low
90°-105°	0.9	36.1	0.1	5.2	Very Low
105°-120°	0.8	36.4	0.1	5.2	Very Low
120°-135°	0.8	40.6	0.1	5.8	Very Low
135°-150°	0.4	31.3	<0.1	4.5	Very Low
150°-165°	0.5	34.8	<0.1	5.0	Very Low
165°-180°	1.0	49.0	0.1	7.0	Very Low
180°-195°	1.9	59.6	0.3	8.5	Very Low
195°-210°	2.1	59.0	0.3	8.4	Very Low
210°-225°	1.6	56.0	0.2	8.0	Very Low
225°-240°	1.2	48.2	0.2	6.9	Very Low
240°-255°	0.9	41.8	0.1	6.0	Very Low
255°-270°	0.8	38.1	0.1	5.4	Very Low
270°-285°	0.9	41.5	0.1	5.9	Very Low
285°-300°	0.8	35.9	0.1	5.1	Very Low
300°-315°	0.9	37.7	0.1	5.4	Very Low
315°-330°	1.3	51.4	0.2	7.3	Very Low
330°-345°	1.1	50.3	0.2	7.2	Very Low
345°-360°	0.8	37.6	0.1	5.4	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

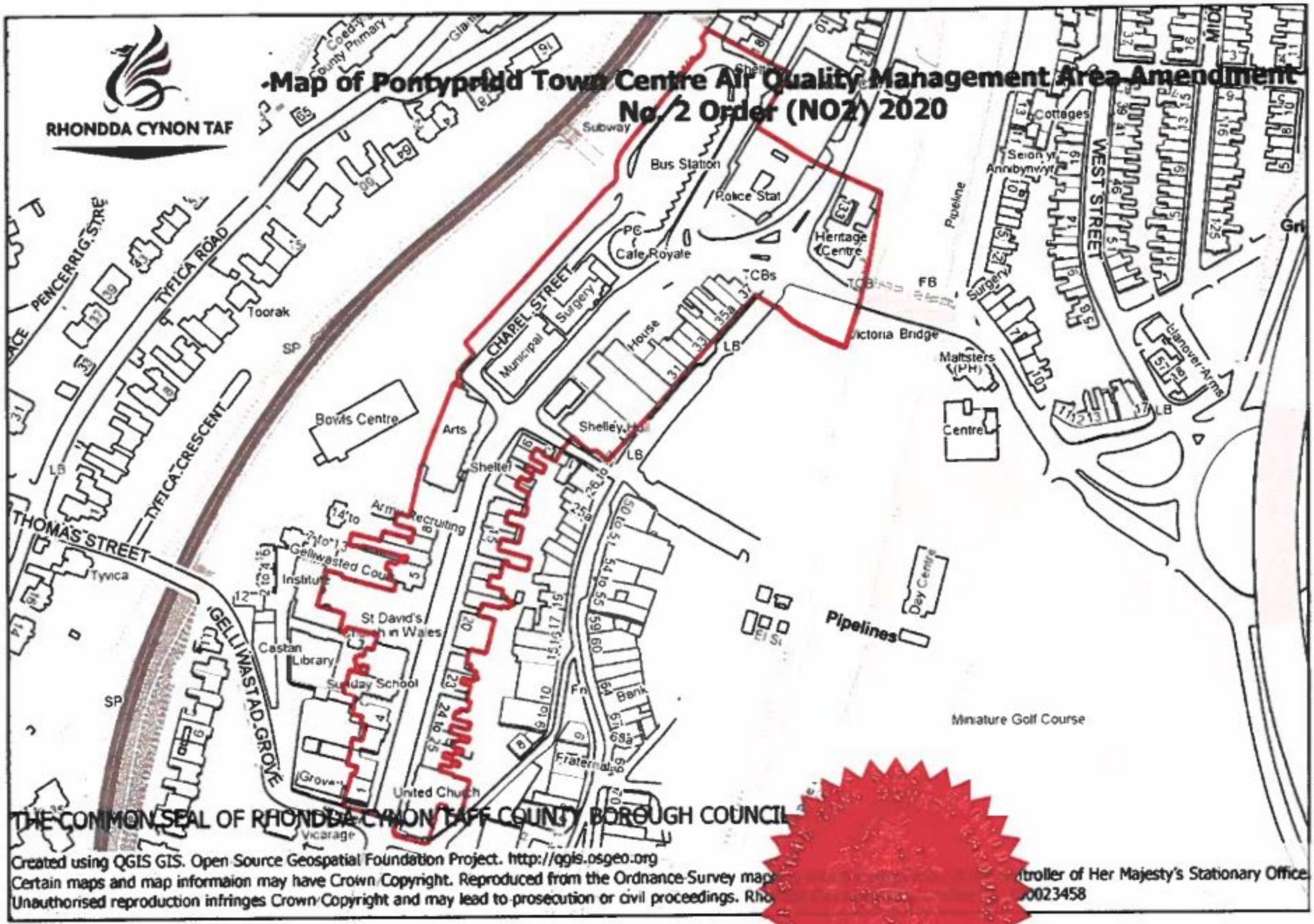
Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

Appendix KEH6

Amended Pontypridd Town Centre AQMA

RHONDDA CYNON TAF

Map of Pontypridd Town Centre Air Quality Management Area Amendment No. 2 Order (NO2) 2020



THE COMMON SEAL OF RHONDDA CYNON TAFF COUNTY BOROUGH COUNCIL

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