

Denbighshire County Council

Date: 5 June 2023

RE: 01/2022/0523 PROPOSED EXTENSION AT GRAIG QUARRY, GRAIG ROAD, DENBIGH – AIR QUALITY IMPACTS ASSESSMENT TECHNICAL APPRAISAL

Introduction

Enzygo has been instructed by Denbighshire County Council (DCC) to undertake a critical appraisal of the air quality and dust assessment undertaken to support the planning application for the proposed extension to Graig Quarry, Denbigh.

The application is a consolidation application covering the existing limestone quarry extraction activities and the proposed extension to extract the remaining limestone reserves with a continuation of the workings to the west; along with the importation of inert restoration materials to bring levels back to original ground levels on the north and lower elevations in the main body of the quarry.

The quarrying is intended to last for a period of 25 years at an annual extraction rate of 200,000 tpa (including consented material). It is anticipated that 100,000 tpa of inert waste, derived from construction, demolition and excavation operations would be imported for restoration purposes.

Within the existing quarry materials would be drilled and blasted loose before being moved to the mobile plant where it will be crushed, screened, and stockpiled by size. Processed and saleable product would be loaded onto and transported off-site by suitable heavy goods vehicles. These techniques will continue to be used in the extension area.

The area of extension brings some activities closer to sensitive receptors. A dust and air quality assessment has been undertaken to consider the potential impacts from dust and particulate emissions from the proposed operations at human and ecological sensitive receptors. The assessment considered impacts at all receptors to be negligible and overall impacts not significant.

This critical appraisal considers the methodology, data used and results of the assessment. In addition, comment has been made on letters of objection to the proposals submitted to DCC.

This Technical Note is provided by Conal Kearney (MSc, BEng, MIAQM, MIEEnvSc), Director of Air Quality at Enzygo Limited. Conal is a Member of the Institute of Air Quality Management (MIAQM) and Institute of Environmental Science (MIEEnvSc) and has over 25 years' experience in the air quality sector including within consultancy, local authorities (including a minerals and waste county authority) and the Environment Agency. His role includes the production and project management of Air Quality Assessments and providing expert witness evidence in support of planning applications.

Critical Appraisal of ES Air Quality and Dust Assessment

This critical appraisal has been undertaken of the air quality assessment chapter contained in Volume 2 of the Environmental Statement undertaken by Temple referenced M18.155.R.007 dated February 2022. Our comments related to areas of the assessment which we consider further information or confirmation is required.

Methodology

The methodology for the air quality assessment is based on the Institute of Air Quality Management (IAQM) 2016 document 'Guidance on the Assessment of Mineral Dust Impacts for Planning'. It is agreed that this is the most appropriate methodology to use to assess the impacts from the proposals.

This method uses a qualitative source-pathway-receiver approach for dust impacts which requires the use of professional judgement to define the magnitude of potential dust sources, effectiveness of the pathway and sensitivity of receptors.

The scope of the study area for dust has been defined as 400 m from proposed extension boundary. It is considered that this is an appropriate area to consider from receptors affected by site preparation/restoration, extraction and exposed surfaces. However, further receptors may need to be considered within 400 m of other activities such as transport, processing and stockpiling.

Particulate health impacts were correctly screened based on background concentrations.

Assessment

Dust Sources

The assessment used IAQM guidance to separately consider residual dust source emission magnitudes from various activity types taking into account built in mitigation. The assessment considered that the maximum magnitude is 'medium' for extraction, processing, exposed surfaces and on-site transport. This is mainly due to the moderate amounts of materials to be extracted and mitigation provided by bunding and planting.

We consider that the activity with the greatest potential to exceed 'medium' dust magnitude is blasting. IAQM guidance suggests that blasting of hard materials of a high dust potential can be considered as a 'large' magnitude. A judgement has been made that a moderate working area and extraction amounts/frequencies lead, on balance, to a 'medium' magnitude. Given that there are no specific dust mitigation measures relating to blasting activities specified (such as damping, stemming materials etc), it would have been considered more robust to consider as potential magnitude of 'large' as a worst case assessment or sensitivity test.

A revised assessment should consider this.

Pathway

The pathway effectiveness is assessed correctly as a function of potentially dusty winds and distance from the dust sources. The meteorological data used for the assessment has been taken from the Shawbury station. The assessment incorrectly states this as being 12 km from the site, whereas as Shawbury is in excess of 65 km from the site.

There are potentially 5 or 6 closer meteorological stations including Rhyl that could be considered as better representations of on-site conditions. I would request that consideration is given to a closer and potentially more representative meteorological data set and the assessment revised.

Receptors

The assessment has considered the most sensitive residential and ecological receptors in the area for activities on the proposed extension area. However, as stated above further receptors may need consideration in a revised assessment within 400 m of other activities in different site locations.

Impacts

It is recommended that the stated impacts are reviewed based on the considerations of blasting magnitude or mitigation and a more representative meteorological data set. Further receptors may also need consideration.

Human Health Impacts

Human health impacts from particulate emissions have been screened out as negligible due to low background PM₁₀ concentrations. This assessment is agreed.

Road Traffic Emissions Impacts

Impacts from road traffic emissions have also been screened out as negligible. This assessment is agreed.

Comments of Objection

General comments were raised by members of the public and Denbigh Town Council over concerns from dust and health impacts from the proposals. A revised assessment based on the above recommendations would be considered fully robust.

Environmental Public Health Service in Wales

“Concerns regarding lack of detailed assessment of air quality. Recommends that the Regulator confirms that the level of detail is adequate.”

We consider that the level of detail is adequate subject to the recommended revised considerations.

Bimeda Comments (26th July 2022)

Specific comments of the impacts on the Bimeda site were received by DCC. The proposed extension area is in excess of 400 m from the Bimeda facility and as such no significant dust impacts would be expected at Bimeda from activities such as blasting. However a revised assessment may need to consider potential impacts from other activities at the Bimeda site.

We trust that the above is clear. If you have any queries or comments, please do not hesitate to contact me on 07904 496233.

Yours sincerely,



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Director of Air Quality

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