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Your ref:
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Date: 23rd January 2024

To Mr Haine

RE: Public Health Response to Planning application LCC/2023/0030

Thank you for consulting with me regarding Planning Application LCC/2023/0030¹ submitted by Baxter Group Ltd.

Policy DM2 Development Management in the 'The Joint Lancashire Minerals and Waste Local Plan. Site Allocation and Development Management Policies - Part One'² states that '*Development for minerals or waste management operations will be supported where it can be demonstrated to the satisfaction of the mineral and waste planning authority, by the provision of appropriate information, that all material, social, economic or environmental impacts that would cause demonstrable harm can be eliminated or reduced to acceptable levels*'.

Policy CS5 - Achieving Sustainable Minerals Production in 'The Joint Lancashire Minerals and Waste Development Framework Core Strategy DPD'³ states '*Criteria will be developed for the site identification process, and also for considering other proposals brought forward outside the plan-making process, to ensure that..... (v) the amenity, health, economic well-being and safety of the population are protected by the introduction of high operating standards, sensitive working practices and environmental management systems that minimise harm and nuisance to the environment and local communities throughout the life of the development*';

The comments in this consultation response are submitted within this policy context.

¹https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75873&imageId=3&isPlan=False&fileName=Bourbles%20PLANING%20APPLICATION%20FORMS%20July2023_Redacted.pdf

² <https://www.lancashire.gov.uk/media/228119/Local-Plan-Part-One-website-1-.pdf>

³ <https://www.lancashire.gov.uk/media/191785/CORE.pdf>

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Overview

The Planning Statement (Greenfield Enviro 2023)⁴ relates to the extraction and processing of sand and gravel over a 20.68-hectare site, including the construction of new site access roads, landscaping and screening bunds, minerals washing plant and other associated infrastructure with restoration to leisure end-uses, agricultural land and biodiversity enhancement, using imported inert fill.

I note from the Planning Statement⁴ that the quarry hours of operation will be Monday to Friday 07.00 to 18.00 and Saturday 07.00 to 13.00. The application states the site will provide approximately 5 years extraction (from 2025) at anticipated output levels of 100,000 tonnes per annum. Total project timescales are estimated to be 7 years to end of restoration phase.

The Planning Statement⁴ states that the quarry will have 5 employees on site plus additional sub-contract personnel and hauliers.

Summary

Having reviewed the planning application, representation from local residents, advice from UKHSA, and council's independent air quality assessment, I consider that without adequate mitigation there is a realistic possibility of negative health impacts occurring during the operations of this quarry. This is likely to be due to a combination of increase in particulate matter and dust, respirable crystalline silica, noise and traffic due to HGVs.

I recommend that the risk factors identified are adequately addressed in the planning conditions, environmental permits and the site monitoring plan. In addition, I advise that a community liaison group is formed to respond to concerns from the local residents.

Air Quality

At my request, UK Health Security Agency (UKHSA) have given consideration of Planning Application LCC/2023/0030¹ in relation to the impact on the health of local residents. Their response is included in Appendix 1 and should be considered in addition to comments I have made in this response.

Dust Effects

Lancashire County Council provided a Scoping Opinion on 10th August 2022⁵. In relation to 'dust' emissions associated with the proposed development, the county council required that: *'Your ES should contain an assessment of dust / particulate impacts. The assessment should be based upon the methodology prescribed in paragraphs 023 – 032 of the Planning Practice Guidance. The assessment should focus on the same properties that are listed in relation to the noise topic.'*

⁴<https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75875&imageId=4&isPlan=False&fileName=Bourbles%20Quarry-Planning%20Statement%20v1.1%20July2023.pdf>

⁵https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75887&imageId=17&isPlan=False&fileName=ES%20Appx1_SCOPING.pdf

The Air Quality Assessment (Vibroch March 2023)⁶ presents an assessment of dust effects for the proposed quarry.

Table 15 in the Air Quality Assessment⁶ presents an assessment of dust effects, which it states is in accordance with the guidance contained in the IAQM Guidance on the Assessment of Mineral Dust Impacts for Planning. It identifies that the Dust Effect Mitigation Methods in Place are categorised as Negligible Effect for 12 Receptors.

The Air Quality Assessment⁶ states '*The implementation of appropriate dust control will effectively mitigate any potential dust impact; resulting in a magnitude dust effect of negligible effect at each assessed receptor*'.

In response to the planning application consultation, the UKHSA⁷ states '*The position of the UKHSA is that air pollutants are nonthreshold and population health impacts may occur from changes in pollution concentrations even below the AQS. However, the applicant notes that the National Planning Policy Framework assessment methodology only considers that increasing levels of particulate greater than the AQS would justify refusal of planning permission*'.

Given that population health impacts of particulate matter may occur even at levels below the AQS, I recommend that all dust control mitigation measures documented in the Air Quality Assessment (Vibroch March 2023)⁶ are included in a dust management plan to keep the air pollutants as low as reasonably practicable and incorporated into planning conditions and the monitoring plan.

Whilst the sand and gravel production would involve the processing of a damp raw material through a wet washing process to produce a finished material which is also inherently damp, there is the potential for the moisture content of this stored product to reduce prior to transfer to vehicles for transportation off site.

The Air Quality & Emissions Technical Note submitted by AtkinsRéalis Air Quality & Emissions⁸ states that '*There is uncertainty regarding the working methods that will be applied, with several references within the submitted planning documentation indicate dewatering and winning of 'dry' reserves creating uncertainty in what mitigation methods need to be applied.*'

⁶https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75900&imageId=30&isPlan=False&fileName=ES%20Appx10_AIR%20QUALITY%20ASSESSMENT.pdf

⁷https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=79656&imageId=605&isPlan=False&fileName=Planning%20Response%20Development%20Control%20LCC_2023_0030%20.pdf

⁸https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=79627&imageId=600&isPlan=False&fileName=LCC20230030%20Bourbles%20Lane_%20AirQuality%20review%20Technical%20Note_Final_27.10.2023.pdf

Guidance on the Assessment of Mineral Dust Impacts for Planning (Institute of Air Quality Management May 2016)⁹ presents suggested mitigation associated with Materials Handling, in Table 5. Whilst not all the Materials Handling mitigation will be appropriate for this quarry, several of those listed are potentially relevant when considering the handling of material with lower moisture content. These include:

- Enclose transfer points and conveyor discharges where visible dust emissions occur
- Storing material under cover, and protecting material from wind

Due to the close proximity of several residential receptors to the proposed site I recommend further consideration is given to how material on site, awaiting removal, is stored and transferred due to the potential for its moisture content to be lower than when it was originally processed. This should consider suggested Materials Handling mitigation listed in Table 5 in Guidance on the Assessment of Mineral Dust Impacts for Planning (Institute of Air Quality Management May 2016)⁹.

Specific consideration should be given to the location of stored material and its proximity to any Public Rights of Way that go through the site.

The Air Quality Assessment (Vibroch March 2023)⁶ makes multiple references to the use of screening bunds and in Appendix 3: Summary of Dust Control Measures states '*Construction of screening bunds for all receptors that have a Moderate Adverse Effect*'. Guidance on the Assessment of Mineral Dust Impacts for Planning (Institute of Air Quality Management May 2016)⁹ states in Table 4 '*For longer periods of activity, perimeter screening bunds (ideally vegetated) or semi-permeable fences, and over shorter periods netting screens may be effective*'.

I recommend that if the planning application is approved, screening bunds when made from soils should be vegetated immediately after their creation.

The Planning Statement (Greenfield Enviro 2023)⁴ proposes a range of environmental monitoring will be undertaken as part of the normal operations, including '*Dust Monitoring - residential properties located adjacent to the site and other identified receptors as agreed with the MPA*'.

Guidance on the Assessment of Mineral Dust Impacts for Planning (Institute of Air Quality Management May 2016)⁹ recommends in Table 5 to '*Implement an appropriate monitoring scheme. This can range from visual inspections, dust deposition/flux monitoring, to real-time PM10 continuous monitoring locations. Where possible commence baseline monitoring at least three months before work commences on-site or, if it is a large site, before work on a phase commences. Undertake daily on-site and off-site inspections, audit the monitoring programme: carry out regular site inspections to monitor compliance with the DMP and adjust*

⁹ https://iaqm.co.uk/text/guidance/mineralsguidance_2016.pdf

the frequency of site inspections according to dust risk (higher frequency in dry and windy conditions)'.

I recommend that if the planning application is approved, a planning condition is included that defines the required dust monitoring, thresholds, and actions if thresholds are exceeded. This should give consideration to the Monitoring section of Table 5 in Guidance on the Assessment of Mineral Dust Impacts for Planning (Institute of Air Quality Management May 2016)⁹.

Respirable Crystalline Silica (RCS) in the Environment

Lancashire County Council published an addendum to the Scoping Opinion on 22nd November 2022 (Ref SCP/2022/003)¹⁰ requiring that the EIA: "...should contain an analysis of the human health impacts of dust including silica rich particulates. The assessment should take into account guidance from the HSE and NHS regarding silica dust impacts including any other research into silica dust related health impacts".

The Health and Safety Executive¹¹ state that 'One of the health risks from working in the quarry industry is that of exposure to fine dust containing crystalline silica (otherwise known as quartz). Quartz is found in almost all kinds of rock, sands, clays, shale and gravel. Workers exposed to fine dust containing quartz are at risk of developing a chronic and possibly severely disabling lung disease known as "silicosis". It usually takes a number of years of regular daily exposure before there is a risk of developing silicosis. Silicosis is a disease that has only been seen in workers from industries where there is a significant exposure to silica dust, such as in quarries, foundries, the potteries etc. No cases of silicosis have been documented among members of the general public in Great Britain, indicating that environmental exposures to silica dust are not sufficiently high to cause this occupational disease'.

The Air Quality Assessment (Vibroch March 2023)⁶ states that '*...the sand and gravel production proposed at Bourbles Farm would involve the processing of a damp raw material through a wet washing process to produce a finished material which is also inherently damp. This means that the potential for community exposure is low with minimal impact on air quality. Furthermore there is no requirement for drilling or blasting at Bourbles Farm which, if not managed properly, may result in significant dust generation.*

The quarry operator will be required to routinely monitor the exposure of its employees to RCS through regular occupational health monitoring. Given that the levels of RCS will be controlled and monitored within the immediate working area of the quarry for its employees, any exposure to RCS outside the site boundary is considered unlikely as a result of the dilution and dispersion of particulates over increased separation distances.

¹⁰https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75887&imageId=17&isPlan=False&fileName=ES%20Appx1_SCOPING.pdf

¹¹ <https://www.hse.gov.uk/quarries/silica.htm>

The potential air quality and dust hazards from quarries are well known and understood and are addressed by stringent regulatory controls set to protect health along with the implementation of additional site specific dust control management measures'.

I note the risks from respirable crystalline silica are of particular concern to residents. I also note the risks associated with exposure to respirable crystalline silica by quarry industry workers as identified by the HSE. In this context, given the proximity of several residential receptors (with the potential for prolonged exposure) to dust from the proposed site, I recommend the applicant completes further work to demonstrate that any risks associated with exposure to respirable crystalline silica will not impact the health of residents, by addressing both the risks of this exposure and proposed mitigation measures.

Noise

The Environmental Statement (Greenfield Enviro 2023)¹² concludes that ...' *the potential effects of the development in terms of noise impact are at an acceptable level and are not significant. The impact magnitude of the short-term and normal operational noise at the various receptors is therefore assessed as low. The receptors are mostly high sensitivity residential properties, and therefore the impact effects are assessed as minor adverse but are based on conservative worst-case values.'*

The Environmental Statement (Greenfield Enviro 2023)¹² states that it is proposed that noise management measures/controls are implemented as part of a Noise Management Plan, with the aim of avoiding unacceptable impacts upon local residential properties and to achieve full compliance with local Policy.

A variety of best practice noise control measures are detailed in the report and will be implemented to minimise noise impacts:

- Strict adherence to stated operating hours
- All plant and equipment to comply with statutory noise emission requirements
- Audible reversing warning systems on mobile plant and vehicles should be of minimum noise impact
- All machinery regularly inspected and maintained, silencers fitted where appropriate
- Drop height of materials minimised

¹²https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75885&imageId=15&isPlan=False&fileName=Bourbles%20Quarry%20ES_July%202023.pdf

- Start up plant and vehicles sequentially, warm up/idle away from residential properties
- Avoid unnecessary horn usage, sharp braking and engine revving
- Switch off equipment not required or throttle down to minimum. Covers, panels and enclosures to be kept closed when equipment in use
- Plant that produces directional noise to be oriented away from noise sensitive receptors where practicable
- Site access road and haul roads to be kept clear and well maintained, avoiding steep gradients
- Operatives to be trained in techniques to minimise site noise and supervised to ensure best working practices are implemented

I recommend that if the planning application is approved, all noise control mitigation measures documented in the Environmental Statement (Greenfield Enviro 2023)¹² should be included in a noise management plan and incorporated into planning conditions. This should include an approach to the monitoring of noise.

Traffic

There are significant inconsistencies in the anticipated number of traffic movements associated with the site within the Planning Application¹, the Planning Statement⁴ and the Noise Assessment.¹³

The uncertainty regarding the number of traffic movements should be clarified.

Specific consideration should be given to minimising the impact of any increase of traffic movement on the wellbeing of those who live in properties along the proposed route.

Public Rights of Way

The Non-Technical Summary (Greenfield Enviro 2023)¹⁴ states '*A public footpath runs through the central part of the site from Bourbles Lane via the existing fishing lakes. This will remain open through the quarry development but will therefore require fencing and the creation of a crossing point on the proposed haul route. Bourbles Lane is a bridleway that will not be impacted.*

The Environmental Statement (Greenfield Enviro 2023)¹² states '*The potential noise and dust impact effects of the operational phase of the development on users of footpaths and PRowS in the vicinity of the site are not considered within the noise and dust assessments as these assessments focus on residential receptors, where the duration of exposure to these impacts, where they occur, is longer and the exposure frequency higher. Given the low frequency and very short duration of the*

¹³https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=75899&imageId=29&isPlan=False&fileName=ES%20Appx9_NOISE%20ASSESSMENT.pdf

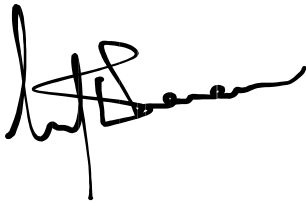
¹⁴<https://planningregister.lancashire.gov.uk/Document/Download?module=PLA&recordNumber=7932&planId=76232&imageId=5&isPlan=False&fileName=BourblesQuarry%20Non%20Technical%20Summary.pdf>

exposure to noise and dust arising from the operational phase of the development that will be experienced by users of footpaths, PRowS in the vicinity of the site, the receptor sensitivity is assessed as low and the impact magnitude as minor, and therefore the impact effects are assessed as negligible to minor temporary adverse and are therefore not considered significant'.

I recommend that if the planning application is approved, all measures required to ensure the safety of individuals using the Public Rights of Way are included in planning conditions.

Specific consideration should be given to the location of stored material and its proximity to any Public Rights of Way that go through the site, to reduce exposure to dust.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Sakthi Karunanithi', written in a cursive style.

Dr Sakthi Karunanithi MBBS MD MPH FFPH
Director of Public Health

Appendix 1: Response of UK Health Security Agency (UKHSA):



UK Health
Security
Agency

Environmental Hazards and Emergencies T +44 (0)300 303 3049
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Your Ref: LCC/2023/0030

Dr Sakthi Karunanithi
Director of Public Health
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17 October 2023

Dear Dr Karunanithi,

Thank you for forwarding a copy of this consultation to the UK Health Security Agency (UKHSA) on 19 September 2023.

It is understood that the planning application is for a sand and gravel quarry; the Local Authority Director of Public Health has asked for an additional UKHSA review of the application in relation to impacts on local residents. The application identifies that there are residential receptors within 100 meters of proposed quarry workings and processing areas.

Having reviewed the application, UKHSA notes the following:

- Quarry operations are likely to give rise to some dust and respirable particulate emissions; the applicant has followed both planning and professional guidance in assessing the significance of these. Nearby receptors have been identified by the applicant and are accounted for in the assessment. Nuisance dust emissions have a range of anticipated outcomes, the most significant of which is assessed as 'slight' to 'moderate adverse outcomes' according to IAQM¹ guidance. Although not directly quantifiable, these level of impacts are based on dust events occurring ~22 times / year with the magnitude of any release and subsequent exposure being dependant on receptor distance and orientation from

¹Guidance on Land-Use Planning and Development Control: Planning for Air Quality: Environmental Protection UK and IAQM, January 2017.

any releases. Additional dust abatement methods via working practices are available to the operator if required.

- Assessment of respirable particulate matter as a fraction of total dust, notes that the smaller <10µm material is most likely to be wind dispersed over a greater area. Background levels of particulate matter are well below the relevant air quality standards and although the applicant does note that an increase in particulate concentrations is considered likely, levels will remain well below the relevant Air Quality Standards (AQS).
- Traffic movements, particularly HGVs associated with the development are assessed with regard to their impact on air pollutant levels and no significant impacts are considered likely. This includes impacts on an Air Quality Management Area associated with traffic pollution.
- An assessment of potential impacts from Respirable Crystalline Silica (RCS) on external receptors has been provided and cites the Health and Safety Executive in stating that silicosis (caused by exposure to dust containing crystalline silica) has only been observed in workers from quarry or foundry industries, and that the lack of cases in the wider public in the UK suggests that environmental exposures to silica dust are not at levels that would lead to silicosis. The applicant further notes that occupational controls and monitoring to limit RCS generation or exposure will be in place as part of quarry operations and protection of employee health should also protect off-site receptors.

It should be noted that a range of occupational health standards for RCS do exist in both the UK and other countries, including the US Occupational Safety & Health Administration and the EU Scientific Committee on Occupational Exposure Limits. The most recent HSE workplace exposure limits classify RCS as carcinogenic and effectively a non-threshold substance with no 'safe' exposure level. Controls to minimise RCS releases and off-site impacts should be reviewed given that sand – a potential source of RCS will be a proportion of the material removed during quarrying.

- Both the RCS risk and wider potential for dust and particulate releases are referenced as subject to regulatory oversight and control; the extent to which effective regulation can be seen as a control mechanism rather than a review mechanism should be considered when this approach is evaluated. An Environmental Permit will likely be required for site operations and this may be a Local Authority or Environment Agency led process according to scale. It is likely that the Planning and Environmental Permit regulatory footprints will not directly overlap and care should be taken to ensure that all potential emission sources are adequately addressed.

Yours sincerely

Jamie Bond
Principal Environmental Public Health Scientist

cc
UKHSA North West, Health Protection Team