AIR QUALITY ASSESSMENT AND DUST CONTROL MEASURES

1.1 This assessment deals primarily with the potential for dust emissions arising from the proposed new concrete batching plant, as this is the subject of the planning application. It does not address dust emissions from those parts of the Site which are not associated with the new plant as there will be no change to these activities.

1.2 The new concrete batching plant will be electrically powered with no diesel generators; there will therefore be no exhaust emissions. The plant will be fed by wheeled loaders which will be powered by diesel engines, but these are used with the existing batching plant which is being replaced. The existing batching plant is also diesel powered, and so the exhaust emissions from this will be removed. In addition, there is no increase in production and so overall traffic levels generated by the site will not change.

1.3 Guidance published by Environmental Protection UK (EPUK and the Institute of Air Quality Management (IAQM) "Land-Use Planning and Development Control: Planning for Air Quality 2015", suggests that assessment of exhaust emissions is only necessary with a change of HGV traffic flows in excess of 100 movements per day Average Annual Daily Traffic AADT where the site is not within or adjacent to a declared Air Quality Management Area (AQMA).

1.4 With an overall reduction in exhaust emissions from diesel powered plant and no change in traffic movements, there is no need to assess exhaust emissions.

1.5 In addition, because this is a replacement plant rather than additional plant, with no increase in output, it is not felt necessary to carry out a quantitative dust assessment. This assessment has therefore concentrated on prevention rather than measurement of background air quality levels and comparison with quantitative predictions.

1.6 The National Planning Policy Framework (NPPF) describes the policy context in relation to pollutants including air pollutants in paragraph 192. The Government's objective is that planning should help to deliver a healthy natural environment for the benefit of everyone and safe places which promote wellbeing. To achieve this objective;

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement."

1.7 Further guidance to the NPPF is set out in the web based Planning Practice Guidance.

1.8 There are no declared AMQAs in the immediate vicinity, although Kirklees AQMA Order 2 covers a section of the A644 Huddersfield Road to the north east.

1.9 Dust sensitive receptors in the locality are located in the industrial areas to the north and east, and agricultural land to the south. However, there is a large area to the south which falls within an area allocated for housing (HS61) in the Kirklees Local Plan. This is likely to be developed in the short term.

1.10 There are no ecologically designated sites in the immediate vicinity of the Quarry. The adjacent river, railway line and agricultural land are considered as low sensitivity receptors.

1.11 Prevailing winds will blow from sectors in the south and west which could potentially deposit dust on the industrial area to the north and east.

1.12 In considering the impact of operations associated with the proposed new batching plant, account needs to be taken of the fact that this new plant is to replace an existing plant. All of the activities associated with the new plant therefore already take place on this site. There will be no new or increased dust emissions involved.

1.13 The location of the activities associated with the batching plant will move from their present location to the new location immediately to the west. The batching plant input consists of screened aggregate, cement powder and water. Output is a wet concrete mix which is transported off-site in mixer wagons.

1.14 The new batching plant will sit on a new concrete pad, and all its components will be fully enclosed with the exception of the initial loading hopper and the chutes delivering the concrete mix into the mixer wagons within the contained structure. The latter will be shrouded but as the mix is wet, the potential for dust emissions is very low. The initial hopper is fed by a loading shovel and there is a potential for dust emission with this, but the hopper opening is as small as possible.

1.15 The potential dust sources arising from activities associated with the new batching plant will be the movement of the loading shovel between the aggregate stockpiles and the initial hopper, and the deposit of the aggregate into the hopper. All other movement of the dry aggregate will be fully contained up to the point where water is added to the mix.

1.16 In addition, the cement powder will be contained in fully enclosed silos as the cement has to be kept in a dry condition. Delivery of the cement powder into the mixing hoppers is also fully enclosed.

1.17 The aggregate feedstock will be transported off-site in mixer wagons, using the concreted area around the plant and the access road onto Calder Road. Such areas can be prone to have a covering of loose material. Dust emissions in such circumstances increase with the transporting vehicle weight and speed. Internal haul routes are therefore considered to have a high potential for dust generation.

1.18 For dust to become airborne, energy is required to overcome the gravitational and cohesive forces binding dust particles together or to a surface. Dust particles are dispersed by suspension in moving air, and the area of dispersal is affected by particle size and wind speed as well as by particle shape and density.

1.19 The largest proportion of dust likely to be emitted from site operations will be large dust particles of size greater than 30 μm, which will largely be deposited within 100m of their source. Finer dusts of size up to 30 μm may travel further, but concentrations will decrease rapidly with distance from the source, due to dispersion and dilution.

1.20 The creation and dispersion of dust will be highly dependent on weather conditions. Wind speed can determine the amount of dust raised, while wind direction determines those areas that may be affected. Higher wind speed increases the potential for airborne dust to be generated with the suspension and entrainment of particles in airflow. Precipitation will suppress dust generation.

1.21 Dust control will be concentrated on the prevention of dust emissions beyond the site boundary and will be centred on the use of water to condition materials and damp down running surfaces. However, in dry windy conditions it can become difficult to maintain effective dust controls and so when necessary, all site operations would be suspended that have the potential to give rise to fugitive dust emissions beyond the Site boundaries.

Mitigation Measures

Stockpiling and Handling

1.22 All stockpiles are located in discrete areas within 3-sided bays where machines or other vehicles are at least risk of running over the stockpiled materials. All stockpiles containing files would be conditioned with water where necessary and the area around the stockpiles will be maintained in a clean and tidy condition.

Internal Haul Routes

1.23 All vehicle speeds will be restricted but the main mitigation measure would be the use of a water bowser in dry windy conditions. The area around the batching plant as well as the site access road will be maintained in a clean and tidy condition

The Batching Plant

1.24 Dust may accumulate inside the enclosed structures which will need to be periodically cleaned out. Such operations will only be carried out when wind speeds are low. Damping down will be used where possible.

Site Management

1.25 The Site Manager would be responsible for ensuring compliance with all dust control measures. The Site would be inspected on a daily basis to ensure that dust was not escaping beyond the site boundaries. A daily record would be kept of weather conditions, site inspections, complaints and any corrective action taken.

Conclusions

1.26 This Assessment has covered the operation of the new concrete batching plant. It has considered the various activities associated with the plant and the potential for dust impacts to arise from them. Impacts from vehicle emissions have been screened out as not being considered significant.

1.27 The Assessment has been based on a qualitative approach and no quantitative measurements have been taken. The sources and impacts of deposited dust have been described and potential receptors identified. Appropriate mitigation has been described and will be implemented.

1.28 Given the mitigation measures proposed, it is considered that the risk of impacts on nearby dwellings and other sensitive land uses are assessed as insignificant or acceptable. Similarly, the risk of impacts on adjacent woodland and agricultural operations are assessed as insignificant or acceptable.