

## Appendix 8B

### Dust Minimisation Plan

#### Site Management

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through effective design and control strategies.

At the planning stage, the siting of construction activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance (see Section 8: Figure 8-2 for the windrose for Dublin Airport). As the prevailing wind is predominantly south-westerly, locating construction compounds and storage piles downwind of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors.

Good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or quickly implementing effective control measures before the potential for nuisance occurs. When rainfall is greater than 0.2mm/day, dust generation is generally suppressed<sup>(30,31)</sup>. The potential for significant dust generation is also reliant on threshold wind speeds of greater than 10 m/s (19.4 knots) (at 7m above ground) to release loose material from storage piles and other exposed materials<sup>(32)</sup>. Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest. The prevailing meteorological conditions in the vicinity of Newtown, Kilshane are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur. The following measures should be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed construction phase mitigation measures are implemented and that construction impacts and nuisance are minimised;
- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details;
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practise and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are described in the sections below.

## Site Roads

Site roads (particularly unpaved roads) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80%<sup>(30)</sup>. The following mitigation measures shall be employed for site roads:

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads;
- Access gates to the site shall be located at least 10m from sensitive receptors where possible;
- Bowsers or equivalent watering equipment will be available during periods of dry weather throughout the construction period. Research has found that watering can reduce dust emissions by 50%. Watering shall be conducted during sustained dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use;
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

## Land Clearing / Earth Moving

Land clearing / earth-moving works during periods of high winds and dry weather conditions can be a significant source of dust. The following mitigation measures shall be employed for land clearing or earth moving activities:

- During dry and windy periods, and when there is a likelihood of dust nuisance, watering shall be conducted to ensure the moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust;
- During periods of very high winds (gales), construction activities likely to generate significant dust emissions should be postponed until the gale has subsided.

## Storage Piles

The location and moisture content of storage piles are important factors which determine their potential for dust emissions. The following mitigation measures shall be employed for storage piles:

- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site. Where possible storage piles should be located downwind of sensitive receptors;
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. The regular watering of stockpiles has been found to have an 80% control efficiency<sup>(31)</sup>;
- Where feasible, hoarding will be erected around site boundaries to reduce visual impact. However, this will also have an added benefit of preventing larger particles from impacting on nearby sensitive receptors.

## Site Traffic on Public Roads

Spillage and blow-off of debris, aggregates and fine material onto public roads shall be reduced to a minimum by employing the following measures:

- Vehicles delivering or collecting material with potential for dust emissions shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust;

- If feasible, a wheel wash facility shall be installed at the main construction traffic exits. All trucks leaving the site must pass through the wheel wash;
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary.

### Dust Monitoring

It is recommended that dust deposition monitoring be put in place to ensure dust mitigation measures are adequately controlling emissions. Dust monitoring should be conducted using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/(m<sup>2</sup>\*day) during the monitoring period which is between 28 - 32 days.