



3.4 AIR QUALITY AND DUST

3.4.1 Introduction

This section of the EIS deals with Air Quality and Dust associated with the on-going operation of the existing soil recovery facility at Tallagh.

Soil recovery facilities and the site activities by their very nature have the potential to generate dust. Dust arises predominantly from movement of soil materials during dry periods. The main elements influencing dust emissions from a soil recovery facility include site plant, stockpiles, traffic on internal haul roads, unloading of soil material and temporary storage; stripping and topsoil storage. They are generally dispersed sources rather than point sources and this dictates the measures required to mitigate potential dust related impacts.

3.4.2 Existing Environment

The soil recovery facility is located in a sparsely populated rural area with surrounding land uses comprising of sheep farming; peat extraction; GAA pitch; former Mushroom Farm and dispersed one-off housing developments and old farmsteads. The nearest densely populated area close to the site is Belmullet some 2 ½ km to the south. The site is far removed from the public road.

Site Monitoring of Meteorological Data is not required under the currently licensed conditions for W0256-01 and is not required in the application for the Review of the Waste Licence W0256-01. Met Eireann have an official 'Weather Station' in Belmullet, within close proximity to the proposed facility. Any Meteorological Data that is required for reporting purposes can be attained from this Met Eireann Weather Station.

A baseline dust monitoring study took place to assess the existing dust levels associated with the operation of the soil recovery facility at Tallagh and how this might have an impact on air quality.

3.4.2.1 Dust Monitoring Results

3.4.2.1.1 Scope of Dust Survey

Baseline dust monitoring took place between 08 December 2008 and 07 January 2009 (30 Days), at the three locations illustrated on **Figure 3.4.2.1.1**.

The purpose of the baseline dust study is to assess the existing dust levels associated with the operation of the soil recovery facility at Tallagh and how this might have an impact on air quality.



3.4.2.1.2 Survey Approach

Total dust deposition was measured at the site using Bergerhoff gauges specified in the German Standard VDI 2119 (1972) document entitled "Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)".

The three dust gauges were set up such that the glass containers were approximately 2m above the ground surface. – see **Photo 3.4.2.1.2**



Photo 3.4.2.1.2: Bergerhoff Dust Monitoring Gauges.

3.4.2.1.2 Dust Survey Results

The glass jars containing the dust were submitted to Complete Laboratory Solutions, Ros Muc, Co. Galway. The Dust Survey levels are presented in the following table:

Monitoring Station	Deposition (mg/m ² /day)
1	657
2	130
3	194

(Source: Complete Laboratory Solutions, Ros Muc, Co. Galway)

Certificates of results are maintained on-site as part of the environmental management program and are included as **Appendix 3.4.**



3.4.3 Assessment of Impacts from Dust

3.4.3.1 Potential Impacts

The only emissions existing/expected to atmosphere at the site are:

1. Typical exhaust emissions from Hitachi 200 excavator and from the haulage trucks delivering material to the site for recovery/reclamation.
2. Dust from the unloading of material from the haulage trucks, and the subsequent movement/spreading of the inert material over the area of the deposition site.

It is estimated that up to a maximum of approximately 90 truckloads of inert material will be accepted at the facility per week. This low level of traffic movement to/from the site will mean very low emissions from haulage truck exhausts to the atmosphere.

The plant on site, Hitachi 200 excavator, is used intermittently on daily/weekly basis, thus does produce high levels of emissions to the atmosphere.

There are a number of features relating to the site that have the potential to generate dust and the potential to affect the air quality in the vicinity of the site. These are:

- Unloading of material by haulage trucks;
- Storage of stockpiles of material, prior to spreading over deposition area
- Site roads
- Traffic entering and leaving the site

The potential impacts from the proposal to increase the annual tonnage from 24,900 tonnes to 90,000 tonnes poses no change in the scope of the activity, the nature of the activity or potential emissions from the activity (as presently licensed).

- The development sequence will still be to fill the site progressively (as presently licensed).
- The lands are presently marginal agricultural land and will be restored using imported soil and stones to more productive agricultural land thereby having a consequential benefit to agriculture (as presently licensed).
- The exact same proposed activity will occur as licensed i.e. a total of 265,000 tonnes of soil and stones but over a shorter time span (i.e. ca. 2.5 – 3 years). The activity will just take a shorter time span to complete and fully restore to beneficial agricultural use.
- The site survey drawings submitted with the Waste Licence Review remain unaltered as there will be no change whatsoever in the proposed topographical levels based on the reclamation of the site occurring over a shorter time period. Therefore there is no change to finished site survey drawings.



- Therefore the licence review creates no proposed change to the content, nature, composition or volume of materials intended for recovery by deposition at the site, and the overall tonnage of 265,000 tonnes for which the existing license was issued remains unaffected.

3.4.3.2 Environmental Assessment of Dust Monitoring

Currently in Ireland, there are no statutory limits for dust deposition. The following thresholds for point and fugitive emission respectively are suggested by ICF, EPA and the DoEHLG for dust arising from quarrying operations:

- **Point Emissions:**

The concentration of particulate matter in emissions to air should not exceed 100mg/m² (in effect meaning that there should be no visible dust plume).

- **Fugitive Emissions:**

The amount of dust deposited anywhere outside the plant boundary, when averaged over a 30-day period, should not exceed:

- 130mg/m² per day when measured according to the BS method which takes account of insoluble components only, or
- 350mg/m² per day when measured according to TA Luft, which includes both soluble and insoluble matter. (EPA compliance monitoring is based on the TA Luft method)

The measurements from D2 & D3 are below the 350 mg/m²/day threshold.

The measurement taken at D1 is above the 350 mg/m²/day threshold. This is probably due to the proximity of the monitoring location to a small roadway along the western boundary of the site. No deposition of material has taken place in this area to date, so it is not expected that these dust levels are in any way related to the existing site. Therefore, there are no significant direct or indirect impacts created by the ongoing operation of the soil recovery facility upon air quality.

3.4.4 Mitigation Measures

Lennon Quarries Ltd. is a member of the Irish Concrete Federation (ICF) and complies with the parameters contained within their Environmental Code of Practice with regards to Dust Control and Dust Monitoring.

In relation to exhaust emissions from the site plant, Hitachi 200 excavator, this machine is serviced regularly to ensure exhaust emissions are kept to a minimum. The engine is turned off when not in use.

The operators take all reasonable steps as far as is practical to minimise dust emissions from material handling operations and use reasonable techniques for minimising the release of dust into the atmosphere.



There are certain measures that are adhered to in effectively minimising dust emissions from the proposed operations. Air emission abatement measures are achieved through the following on site measures:

- Provision of paved internal roadways, where appropriate.
- Provision of on-site speed limits to prevent unnecessary generation of Fugitive dust emissions.
- Mobile water bowsers deployed around the site and/or mobile road sweeper deployed around the site and site entrance.
- Reduction in the volume of the stockpiles
- All stockpiles are conditioned with water to minimise dust during dry weather.
- Minimising drop heights of material.
- All completed areas of land reclamation will be spread with topsoil and grass seeded to eliminate any wind blown dust.
- Dust monitoring will be carried out biannually, per licensed requirements.
- Water spraying stockpiles and access roads during prolonged dry periods;

If the level of dust is found to exceed 350mg/m²/day in the vicinity of the site, further mitigation measures will be incorporated into the operation of the facility. It is expected that some dust generation can arise as a result of continuing material recovery/reclamation activities on the site. However, it is likely that dust generation will remain below the accepted EPA emission limit, with proper site management. With the above mitigation measures in place, no likely significant effects on air quality are envisaged.

With regards to potential impacts relating to dust, the proposed proposals in the licence review to increase the annual tonnage from 24,900 to 90,000 tonnes provides **an environmental gain**.

The phasing and restoration of the site will occur over a much shorter time period thereby speeding up the process by which the lands are seeded; stabilised and put back into productive agriculture. This obviously minimises the potential for dust emissions (not withstanding the control measures already in place) and it provides even greater compliance with Condition 6.11.3: *Developed areas shall be seeded as soon as practicable after placement of cover soils, in a manner appropriate to the surrounding area and in any event in accordance with condition 10.2.2.*

These above measures ensure that dust from the operation of the soil recovery facility at Tallagh does not have any significant environmental impacts upon air quality.

Lennons Quarries Ltd. have the support of the local community with regards to the proposed review to their existing Waste Licence W0256-01.

This is in the form of letters of support for the proposed review from all the nearest residential dwellings (which would be considered the nearest potential noise and dust sensitive receptors). See **Figures 1.13.2** (letters) and associated map **Figure 1.13.1** and **Figure**



3.4.2.1.1 in this EIS. Furthermore, there is the full support of the local GAA Club (see **Figure 1.13.3**), an adjoining land-use and a major part of the local rural community.

Therefore the licensee has demonstrated to the Agency that the licence review is supported by the local community as being a positive and pro-active step with environmental gains and benefits.

The site has been up and running for the past ca. 2 years without any complaints or enforcement issues relating to dust or dust nuisance as proven by Agency records. Furthermore, the compliance monitoring is all up to date and is all compliant with the license requirements. All in all it is considered that Lennon Quarries Ltd. operate an extremely well run and well-monitored licensed soil recovery facility

3.4.5 Monitoring

Monitoring of Dust Levels at site boundary locations will continue at the site as part of the Environmental Management Monitoring Programme. There is already an existing Dust Monitoring Programme in place as demonstrated by the existing monitoring results presented in the EIS. Certificates of dust results will be maintained on-site as part of the on-going Environmental Management Program.

Biannual dust deposition monitoring took place in 2012 as part of the current licence requirements and monitoring results from 2012 will be submitted per the reporting requirements of the licence.

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Appendix 3.4: Dust Monitoring Laboratory Results



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Client :	Emma Sweeney Tobin Consulting Engineers Market Square Castlebar Co. Mayo	Report No. :	86546
		Date of Receipt :	07/01/2009
		Start Date of Analysis :	08/01/2009
		Date of Report :	09/01/2009
		Order Number :	
		Sample taken by :	Client

CERTIFICATE OF ANALYSIS

Results				
Lab No	Sample Description	Test	Result	Units
195412	DS 1. 7/12/07 @ 11am	Settleable Dust (Bergerhoff Method)	657 Very dusty	mg/sq.M/Day
195413	DS 2. 7/12/07 @ 11am	Settleable Dust (Bergerhoff Method)	130	mg/sq.M/Day
195414	DS 3. 7/12/07 @ 11am	Settleable Dust (Bergerhoff Method)	194	mg/sq.M/Day

Authorised by:

Barbara Lee
Environmental Scientist

See reverse for Test Specifications
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