

14/09/2016

Michael Boland
Executive Scientist
Water and Environmental Services
Wicklow Country Council
County Buildings
Wicklow Town
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RE: Section 55 Monitoring Data, Ballinclare Quarry – Air Monitoring and Dust Monitoring Update

Dear Mr. Boland,

As required by the recent section 55 notice (dated 3rd June 2016), issued to Kilsaran International, I am writing to you to provide an update on the air and dust monitoring at Ballinclare Quarry.

1. Overview of air monitoring programme to date

In accordance with the previously outlined monitoring programme from the letter dated 20th June 2016, air sampling was undertaken again on Friday 2nd September 2016 by AWN Consulting at the six identified perimeter locations (SA1 – SA6) around the quarry (see *Figure 1 – Monitoring locations*).

The methodology for the monitoring of asbestos followed *The Health and Safety Executive (HSE) Guidance Asbestos: The Analysts Guide for Sampling, Analysis and Clearance Procedures*, which recommends that sampling and analysis of materials for the presence of asbestos is undertaken to comply with CAWR 2002 ACOPs L27 and L28 when sampling airborne fibres.

The HSE procedure recommends using a known flow rate (ranging from 1-16 L/min) through a filter for a set period of time until 480 litres of air have been sampled. To satisfy the requirement for comparison to the minimum detection limit of 0.01 f/ml, each measurement must be completed on a minimum sample of 480 litres in volume. The fibres can then be enumerated by a UKAS accredited laboratory, in this case, the Institute of Occupational Medicine (IOM).



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Table 1 provides a comprehensive overview of the sampling results from Friday 2nd September 2016 and also includes an assessment of the fibre concentrations in relation to the HSA Binding Occupational Exposure Limit. Please note that no result is available for monitoring location SA3 as the pump at that location failed due to a flow error early in the sampling.

As with all previous sampling to date the results were again in compliance with the Health and Safety Authority (HSA) Code of Practice (COP) 2011 value of 0.1 f/ml.

2. Dust sampling status

In accordance with the programme outlined in the letter dated 20th June 2016, dust monitoring was again undertaken continuously from Friday 12th August until Thursday 18th August 2016. The results are presented in Table 2.

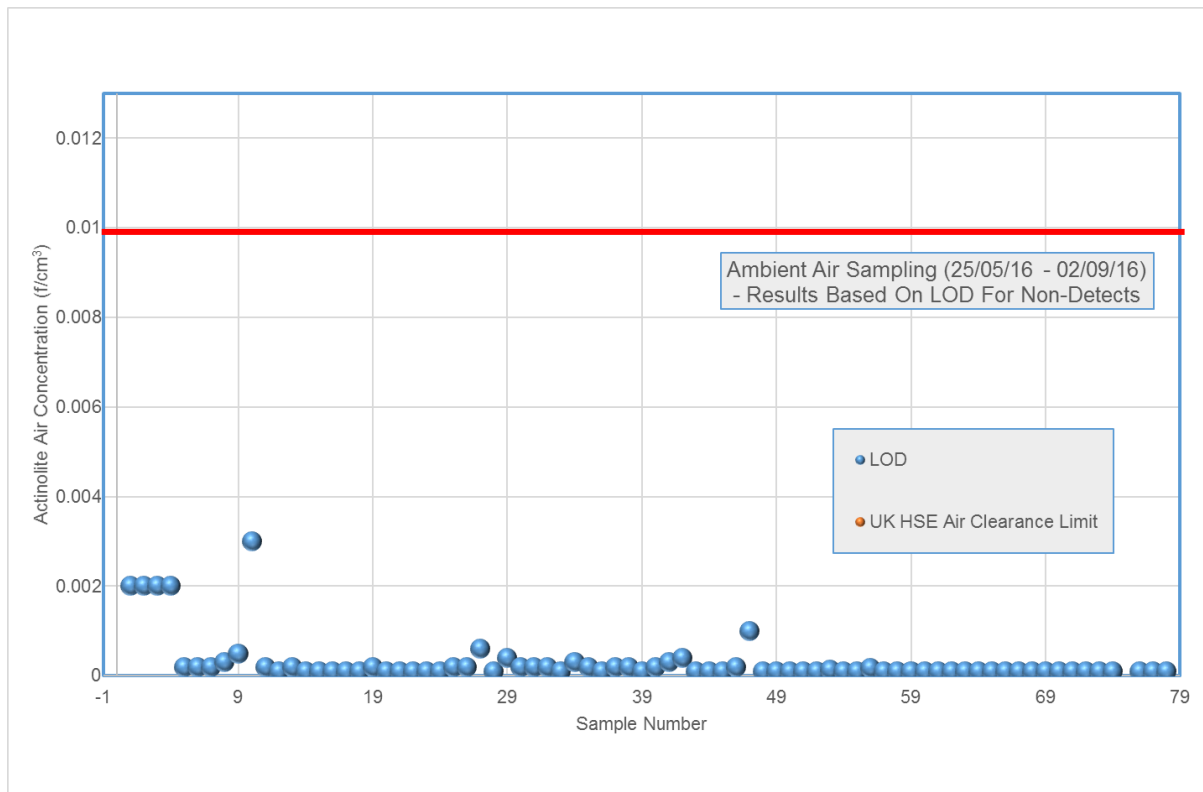
Monitoring for PM₁₀ is undertaken at one location (SD1) (see *Figure 1 – Monitoring locations*) using a R&P Partisol®-Plus Sequential Air Sampler (Model 2025). The sampler is a manual air sampling platform which has been designed to meet US EPA Reference Designation (RFPS-1298-127). Approximately 24 m³ of air is sampled daily through a particle size separator, which is contained within the PM₁₀ sampling head. The impactor removes particles with a diameter >10 µg and the remaining particles are collected on pre-weighed 47mm diameter filters. The Partisol® sampler is programmed to automatically replace each sampled filter by a new pre-weighed filter at midnight. This ensures that each filter represents a sampling period of exactly 24 hours. Gravimetric determination is carried out pre- and post-sampling by a UKAS accredited laboratory using a calibrated scientific balance.

As with the previous results, all samples were in compliance with the CAFE Directive 2008/50/EC limit value for PM₁₀ which is 40 µg/ m³ per calendar year or 50 µg/m³ in any 24-hour period (not to be exceeded more than 35 times in a calendar year) (see <http://www.epa.ie/air/quality/standards/>). The monthly average for all samples to date is reported in Table 3.

3. Status of Existing Monitoring and Proposed Ongoing Monitoring Plan

A total of 78 samples have been taken at the quarry by AWN Consulting and analysed by IOM over the period 25/05/2016 to 02/09/2016. The method is based on Asbestos International Association, Recommended Technical Method No. 2 (RTM2, AIA 1984) and International Standards Organisation (2002), International Standard 14966, and involves Fibre Counting using Scanning Electron Microscopy (SEM) with fibre identification by Energy Dispersive X-ray Spectroscopy (EDXS).

The values presented in the figure below are the concentrations monitored or, where no asbestos fibres were detected, the limit of detection for that sample. None of the 78 samples taken in the quarry between 25/05/2016 and 02/09/2016 detected a concentration in excess of the HAS COP 2011 value of 0.1 f/ml or the *UK HSE (2013) Managing And Working With Asbestos - Control of Asbestos Regulations 2012* clearance air limit value of 0.01 fibres equivalents / cm³_{air}. As the UK HSE limit is the more conservative value it is shown as the bench marck in the figure below.



The above monitoring was undertaken during the period of time in which potentially contaminated aggregate, which had been produced during the time period when material could have had low concentrations of actinolite present, was returned to the quarry in accordance with the Section 55 notice. This work has now been completed and the site is currently closed with access restricted to personnel with suitable PPE.

In light of this, and with reference to the above results, it is proposed that weekly air monitoring be placed on hold until further studies have been undertaken and a mitigation programme has been designed for the quarry and agreed with the EPA. During this time no work involving disturbance to ground will be undertaken and any extended dry period when dust could be generated is unlikely.

It is also proposed that the weekly dust monitoring at location SD1 continue to provide a reference point for dust movement at the site. Please note that to date all dust samples have been in compliance with the the CAFE Directive 2008/50/EC limit value. It is proposed that dust monitoring continue until the end of October when the wettest season commences.

Yours sincerely,

Teri Hayes

Director Awn Consulting

cc. *Michael Geaney, A/Director of Services, Water and Environmental Services, Wicklow Co. Council*

David McKeown, Director, Kilsaran International

Jim Fanning, Health and Safety Authority

encl. Table 1 – Air Quality Monitoring Programme Results, Ballinclare Quarry, 02 September 2016
Table 2 - Dust Monitoring Programme Results, Ballinclare Quarry, 12 - 18 August 2016
Table 3 - Dust Monitoring Averages, 17 June – 18 August 2016
Figure 1 - Monitoring Locations

Table 1: Air Quality Monitoring Programme Results, Ballinclare Quarry, 02 September 2016

Sample no.	Date	AWN Consultant	Location Description	Total Fibre Concentration (f/ml)	Total Asbestos Fibre Concentration (f/ml)	Analysed by:	HSA Limit Value	Compliant with HSA Binding Occupational Exposure Limit?
AF1	02/09/2016	AC	Section 55 Monitoring SA1 Location	0.00019	<0.00009	IOM	0.1 f/ml	Yes
AF2	02/09/2016	AC	Section 55 Monitoring SA2 Location	<0.00009	<0.00009	IOM	0.1 f/ml	Yes
AF3	02/09/2016	AC	Section 55 Monitoring SA3 Location	N/A	N/A	IOM	0.1 f/ml	N/A
AF4	02/09/2016	AC	Section 55 Monitoring SA4 Location	<0.00009	ND<0.00009	IOM	0.1 f/ml	Yes
AF5	02/09/2016	AC	Section 55 Monitoring SA5 Location	<0.00009	ND<0.00009	IOM	0.1 f/ml	Yes
AF6	02/09/2016	AC	Section 55 Monitoring SA6 Location	<0.00009	ND<0.00009	IOM	0.1 f/ml	Yes

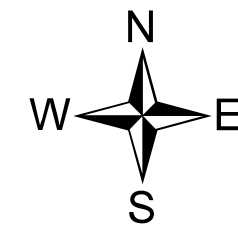
ND – None Detected

Table 2: Dust Monitoring Programme Results, Ballinclare Quarry, 12 - 18 August 2016

Filter Paper ID	Date	PM10 Concentration ($\mu\text{g}/\text{m}^3$)
05474-25	12/08/2016	6
05474-26	13/08/2016	7
05474-27	14/08/2016	7
05474-28	15/08/2016	14
05543/01	16/08/2016	12
05543/02	17/08/2016	19
05543/03	18/08/2016	15

Table 3: Dust Monitoring Averages, 17 June – 18 August 2016

1-month Average	9.5 $\mu\text{g}/\text{m}^3$
No. Days >50	0
90.4th %ile	16
No. Days Sampling	56



Legend

Sampling locations/ Type:

■ SA1 - SA6
- Asbestos Sampling Point

■ SD1
- Dust Sampling Point



Do not scale; Indicative Only (NTS)
 0 50 100 Metres

AWN licence no. EN 0007513
 Note: Drawing is for illustrative purposes only
 Source: Kilsaran, flown 28/05/2016

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CLIENT: Kilsaran Ballinclare, Co. Wicklow	PROJECT: Proposed Section 55 Air Monitoring	DRAWN: P.G.	CHECKED: T.H.	APPROVED: T.H.	DATE: 05/07/2016
		Figure 1			1
DRAWING TITLE: Monitoring Locations	Project Ref: TH/16/9020SR01	REVISION DESCRIPTION Drawing 05-07-2016		SHEET 1	REV 0