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**Newport City Council
Civic Amenity Site**

**Airborne Fibre Monitoring
Weighbridge Office**

March 2017

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Executive Summary

At the request of Mr Gwyn Jones of Newport City Council, airborne fibre monitoring has been carried out at the Weighbridge Office at the Civic Amenity Site, Docksway, Newport. The monitoring was carried out by Mr Kelvin Williams, Chartered Occupational Hygienist, and included a site visit on 8th and 10th February 2017.

We were informed that Newport City Council have established an "asbestos cell" at the Civic Amenity Site. The introduction of the asbestos cell has resulted in asbestos waste traffic passing through the weighbridge station. Staff attending the weighbridge office have expressed concern over airborne asbestos fibres migrating into the weighbridge office.

Further to discussion with Newport City Council, it was agreed that airborne fibre monitoring would be carried out at two static locations in the weighbridge office and also a personal sample collected from the member of staff attending the weighbridge office "hatch" where waste delivery drivers communicate with weighbridge office staff.

The monitoring results indicate that asbestos fibre levels were well below workplace exposure limits at the time of the sampling exercise. No asbestos fibres were detected in any of the samples collected during the survey period.

From the results and our observations we can see no reason to suggest that the passage of vehicles containing asbestos through the weighbridge area is likely to pose a significant health risk to staff due to asbestos exposure.

Newport City Council Civic Amenity Site

Airborne Fibre Monitoring Weighbridge Office

1. Introduction

- 1.1 At the request of Mr Gwyn Jones of Newport City Council, airborne fibre monitoring has been carried out at the Weighbridge Office at the Civic Amenity Site, Docksway, Newport.
- 1.2 The monitoring was carried out by Mr Kelvin Williams, Chartered Occupational Hygienist, and included a site visit on 8th and 10th February 2017.

2. Background

- 2.1 We were informed that Newport City Council have established an "asbestos cell" at the Civic Amenity Site. The introduction of the asbestos cell has resulted in asbestos waste traffic passing through the weighbridge station. Staff attending the weighbridge office have expressed concern over airborne asbestos fibres migrating into the weighbridge office.
- 2.2 Further to discussion with Newport City Council, it was agreed that airborne fibre monitoring would be carried out at two static locations in the weighbridge office and also a personal sample collected from the member of staff attending the weighbridge office "hatch" where waste delivery drivers communicate with weighbridge office staff.

3. Methodology

Sampling

- 3.1 Air samples were collected from the locations described in paragraph 2.2. Photographic illustrations of the sampling locations are provided in Appendix 1.
- 3.2 In brief, air was drawn at a known rate, and for a known period of time through 25mm polycarbonate filters mounted in cowl cassettes.
- 3.3 Air sampling was carried out over a period of several hours which included the passage of full skips of asbestos through the weighbridge.

Analysis

- 3.4 A portion of each filter was excised and mounted on a 13mm aluminium stub, coated with gold and examined by Scanning Electron Microscopy.
- 3.5 Each filter was searched systematically at 2000x magnification until an area of 1mm² had been examined or 50 whole fibres found. All respirable fibres (aspect ratio >3:1, length >5µm and diameter <3µm and including fibres in contact with particles >3µm diameter) detected were analysed by Electron Dispersive X-Ray Spectrometry and identified as

closely as possible, by comparing morphology and composition with standard reference materials.

- 3.6 The method used for analysis is based on Asbestos International Association, Recommended Technical Method No. 2 (RTM2, AIA 1984) and International Standards Organisation (2002), International Standard 14966.

Methodology References

Asbestos International Association. (1984). Method for the determination of airborne asbestos fibres and other inorganic fibres by Scanning Electron Microscopy. Recommended Technical Method No. 2 (RTM2)

AIA, London. International Standards Organisation (2002). International Standard 14966. Ambient Air: Determination of numerical concentration of inorganic fibrous particles- Scanning electron microscopy method.

General

- 3.7 Observations were made on weather conditions and activity prevailing at the time of sampling.

4. Results

- 4.1 The sampling schedule, together with description of weather conditions, is given in Table 1 below.

Table 1 – Sampling schedule

Date	Sample	Location	Sample Period		Weather / Comments
			Start	Finish	
8/2/17	1/67/16	Mr Bob Rosser Weighbridge Office: attending hatch	09.50	14.50	Dry Wind: North easterly 7 mph Temperature 7°C 1 full asbestos skip and 1 vehicle containing asbestos contaminated soils passed through weighbridge
	2/67/16	Static sample At hatch to the weighbridge office	09.54	14.54	
	3/67/16	Static sample Background sample in general weighbridge office	09.56	14.56	
10/2/17	4/67/16	Mr Bob Rosser Weighbridge Office: attending hatch	09.20	14.20	Dry Wind: North easterly 11mph Temperature 3°C 1 asbestos container containing bonded asbestos
	5/67/16	Static sample At hatch to the weighbridge office	09.21	14.21	
	6/67/16	Static sample Background sample in general weighbridge office	09.21	14.21	

4.2 The airborne fibre monitoring analysis results are described in Table 2 below.

Table 2 – Airborne Fibre Monitoring Analysis Results

Sample No.	Volume (l)	⁽¹⁾ No. of Resp. Fibres Found	⁽¹⁾ No. of Fields Searched	Total Fibre Conc ⁿ (fml ⁻¹)	AMX Fibre Conc ⁿ (fml ⁻¹)	CMX Fibre Conc ⁿ (fml ⁻¹)	MMMF Conc ⁿ (fml ⁻¹)	Organic Fibre Conc ⁿ (fml ⁻¹)
1/67/16	720	1	300	<0.0008*	ND<0.0008*	ND<0.0008*	ND<0.0008*	<0.0008*
2/67/16	720	1	300	<0.0008*	ND<0.0008*	ND<0.0008*	ND<0.0008*	<0.0008*
3/67/16	720	3	300	0.0008	ND<0.0008*	ND<0.0008*	ND<0.0008*	0.0008
4/67/16	720	2	300	<0.0008*	ND<0.0008*	ND<0.0008*	ND<0.0008*	<0.0008*
5/67/16	720	0.5	300	<0.0008*	ND<0.0008*	ND<0.0008*	ND<0.0008*	<0.0008*
6/67/16	720	2	300	<0.0008*	ND<0.0008*	ND<0.0008*	ND<0.0008*	<0.0008*

AMX – Amphibole Asbestos **CMX** – Chrysotile Asbestos **MMMF** – Machine Made Mineral Fibre **Organic Fibre** – Organic Fibre
ND – None Detected

When no fibres of a given type are detected, the fibre concentration can be reported as less than the concentration equivalent to three fibres (the one sided upper 95% confidence limit of the Poisson distribution). Therefore, when 0, 1 or 2 fibres are detected, 2.99 is used in the calculation of fibre concentrations. It expresses the 95% confidence detection limit for airborne fibre concentrations. When a volume of 720 litres is used the 95% confidence limit is 0.0008 fml⁻¹ for the number of fields searched.

5. Discussion and Conclusions

General

- 5.1 The weighbridge office is not served by a mechanical ventilation system. The office is naturally ventilated by opening windows or doors.
 - 5.2 The asbestos waste was said to be double bagged at all times and located in sealed skips / vehicle containers on passing through the weighbridge.
 - 5.3 It is understood that vehicles do not, at any time, drive over previously deposited asbestos waste. At present, vehicles drive over a gravel track to the asbestos deposit location. In due course, a “cap” (about 1m deep) will be placed over deposited waste before vehicles are allowed to access the asbestos waste cell.
 - 5.4 The number of vehicles containing asbestos waste that pass through the weighbridge varies from day to day. On some days, no asbestos waste may pass through the weighbridge whereas on other days several vehicles containing asbestos waste may pass through.
 - 5.5 As vehicles pass through the weighbridge station, the interaction between the weighbridge staff and the vehicle driver (at the hatch) was typically less than 1 - 2 minutes.
 - 5.6 The asbestos containers were sealed as they passed through the weighbridge station. Staff attending the weighbridge did not have direct contact with vehicles transporting asbestos.
- 8th February**
- 5.7 On the 8th February, one loaded asbestos skip (sealed) and one lorry loaded with asbestos contaminated soil passed through the weighbridge.
- 10th February**
- 5.8 On the 10th February, one container skip containing bonded asbestos passed through the weighbridge. Photograph 4 (Appendix 1) illustrates the interaction between the

weighbridge staff and the driver of the vehicle transporting the container skip after the asbestos had been deposited on site.

Compliance with Workplace Exposure Limits

- 5.9 A Control Limit is a maximum concentration of asbestos in the air that must not be exceeded. The Control of Asbestos at Work Regulations give a single control limit for all asbestos types which is

0.1 fibres / millilitre of air measured as a 4 hour time weighted average

0.6 fibres / millilitre of air measured as a 10 minute time weighted average.

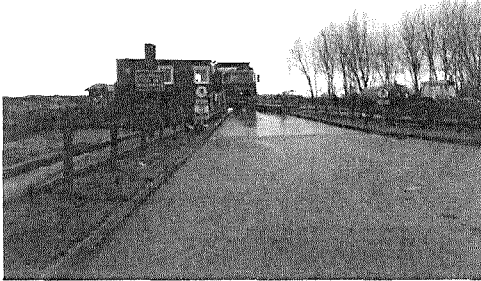
Important:

The Control Limits do not represent a “safe” level of exposure. You should always keep asbestos exposure as low as you can even if it is already below the control limits. Even at the level of the Control Limit you could breathe in a very high number of fibres in a working day

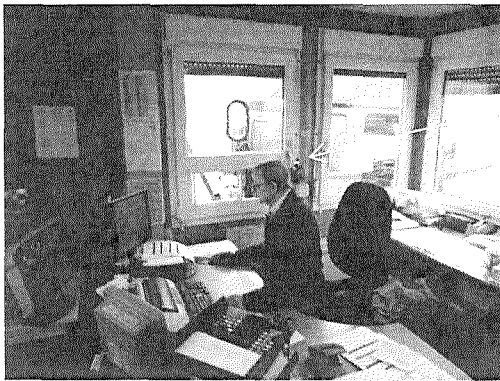
- 5.10 The Clearance Indicator, <0.010 f/ml, is defined as a transient indication of site cleanliness further to asbestos removal operations. Nevertheless it is commonly applied as a measure of whether an area is “safe” for normal occupation. Consider;
- 5.11 The monitoring results indicate that asbestos fibre levels were well below workplace exposure limits at the time of the sampling exercise. No asbestos fibres were detected in any of the samples collected during the survey period.
- 5.12 From the results and our observations we can see no reason to suggest that the passage of vehicles containing asbestos through the weighbridge area is likely to pose a significant health risk to staff due to asbestos exposure.
- 5.13 UKAS accreditation for this work is limited to results obtained directly from the analysis.

Appendix 1 – Photographic Illustrations

Photograph 1 – Illustrating weighbridge station

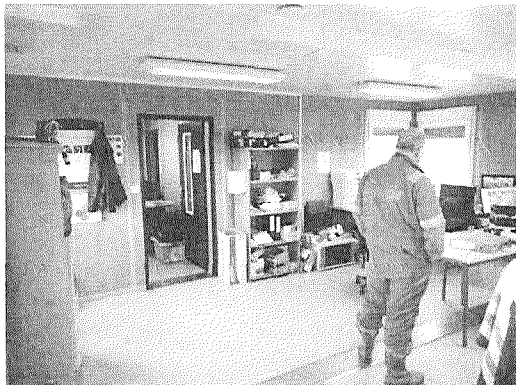


Photograph 2 – Illustration of hatch at weighbridge office



Hatch

Photograph 3 – Illustration of weighbridge office



Photograph 4 – Illustrating interaction between weighbridge staff and driver of vehicle that had just deposited a load of bonded asbestos on site (10th February). Note: asbestos container is sealed; staff do not leave weighbridge office or have contact with vehicle.

