

Mineral Resources Tasmania

Laboratory Report

LJN2017-126

Asbestos Analyses, Mornington corestore

An unpublished Mineral Resources Tasmania report for
Mineral Resources Tasmania

by R.S. Bottrill and R.N. Woolley

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SUMMARY

There was a faint trace amount of respirable fibre identified on the two air sample filters, used during handling of the asbestos-bearing Huskisson River drillcore. It may include some asbestos fibre but the concentration of all fibres was well below the recommended exposure limits of 0.1 fibres per mL. This level of exposure does not represent a significant health hazard. These samples demonstrate that current safety precautions are working at this level of activity.

INTRODUCTION

Two respirable filter samples were collected at the Mornington corestore during the handling of an asbestos-bearing drillcore TCA01, from the Huskisson River (Table 1), to determine the possible presence of asbestos.

TABLE 1: SAMPLE DETAILS.

Reg. No	Location	Description	Borehole No	Drill ID	User	Times	Flow rate
G407506	Mornington corestore	asbestos filter	TCG-A01	68438	Steve Newett	10:30-12:20am	2.0 l/min
G407507	Mornington corestore	asbestos filter	TCG-A01	68438	Steve Newett	11:20am-2:20pm and 1/2 break	2.0 l/min

SAMPLE PREPARATION

Samples were collected using a Buck “Libra” Air Sampler and the working conditions, sampler flow rates and times were recorded.

Samples were prepared using an acetone-triacetin mounting procedure outlined in the Guidance note on the membrane filter method for estimating airborne asbestos fibres (NOHSC, 2005).

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FIBRE EXAMINATION AND COUNTING

The two samples were prepared and examined using a combination of phase contrast and low to high power, plane and cross polarised light microscopy, in the MRT laboratories, Rosny Park, Tasmania. An area of the filter greater than 0.75 mm² was examined by fibre counting, using the methods recommended in NOHSC (2005). The sampling details, counting data and results are summarised in Appendix 1.

These examinations revealed that both filter papers contained only a faint trace of respirable fibre (<0.005 fibres/mL). This is well under Safe work Australia's exposure standards for Amphibole and other Asbestiform materials of 0.1 fibres/ml (Safe Work Australia, 2019). Some of this appeared to be asbestiform chrysotile although most of the fibre did not appear to be true asbestos, but could not be specifically identified.

CONCLUSIONS AND DISCUSSION

There was a faint trace of respirable fibre identified on both the sample filters. Some of this may have been amphibole asbestos but the concentration of all fibres was well below the recommended exposure limits of 0.1 fibres per mL. This level of exposure does not represent a significant health hazard.

These samples demonstrate that current safety precautions are working at this level of activity.

REFERENCES

Bottrill, R, & Coyte, T, (2020). *LJN2020-061 Mineralogical / Asbestos Analyses, Savage River Mine*. MRT Laboratory Report.

NOHSC (National Occupational Health and Safety Commission), 2005, *Guidance note on the membrane filter method for estimating airborne asbestos fibres 2nd edition [nohsc: 3003(2005)]*, Australian Government.

Safe Work Australia, 2019, *Workplace exposure standards for airborne contaminants*. Australian Government.

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Appendix 1: Microscopy Report

MRT Laboratory Report

Client: S Newett

Sample Location: Mornington corestore

Job Number: LJN2017/126

Analyses: Asbestos Fibre count

Methods: Polarised Light Microscopy

Microscopic Analysis

Reg. No	User	Use Times	Tot time (mins)	Flow rate L/min	Air volume (L)	Area fibre count	Count area (mm ²)	Total Fibres	Fibres/L	Fibres/mL
G407506	Steve Newett	10:30-12:20am	110	2	220	~10	10	491	2.2	0.002
G407507	Steve Newett	11:20am-2:20pm and 1/2 break	150	2	300	~10	10	491	2.2	0.002

Analyst: R. Bottrill

Date: 2 Jan 2018

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In Australia, the workplace exposure standard (WES) for **asbestos** exposure is 0.1 f/ml.

<https://www.safeworkaustralia.gov.au/system/files/documents/1705/workplace-exposure-standards-airborne-contaminants-v2.pdf>

Safework Australia. 2013 WORKPLACE EXPOSURE STANDARDS FOR AIRBORNE CONTAMINANTS

DATE OF EFFECT: 18 April 2013

A licenced removalist must stop **asbestos** removal work when the recorded **respirable asbestos** fibre level exceeds 0.02 fibres/ml.

The **permissible exposure limit (PEL or OSHA PEL)** is a [legal](#) limit in the [United States](#) for exposure of an employee to a [chemical substance](#) or physical agent such as loud noise. Permissible exposure limits are established by the [Occupational Safety and Health Administration](#) (OSHA).

A PEL is usually given as a **time-weighted average (TWA)**, although some are [short-term exposure limits](#) (STEL) or [ceiling limits](#). A TWA is the average exposure over a specified period, usually a nominal eight hours. This means that, for limited periods, a worker may be exposed to concentration excursions higher than the PEL, so long as the TWA is not exceeded and any applicable excursion limit is not exceeded. An excursion limit typically means that "...worker exposure levels may exceed 3 times the PEL-TWA for no more than a total of 30 minutes during a workday, and under no circumstances should they exceed 5 times the PEL-TWA, provided that the PEL-TWA is not exceeded."^[2] Excursion limits are enforced in some states (for example Oregon) and on the federal level for certain contaminants such as asbestos.