

24 November 2015

Rebecca Taylor
C3 Ltd
58 Cross Rd
Tauranga

Dear Rebecca

Thank you for your help with this study. It is very much appreciated.

The table below shows the results from the personal air samples we took in the Tauranga log-yard on 5 and 6 November 2015. The work-exposure limits averaged over an 8-hour working day (8h-TWA) are listed on the left of your results. All exposure limits were taken from '*Workplace Exposure Standards and Biological Exposure Indices (2013)*' published by WorkSafe New Zealand.

Samples 1 - 6 were taken on 5 November 2015 and samples 4a - 7 on 6 November 2015. Samples labelled with an 'a' are repeat samples from the same staff member taken on the following day.

On 5 November 2015 the log stacks were fumigated during the sampling time. On 6 November 2015 we tried to include the time when the tarpaulin was removed into the sampling period. However, there was a delay and by the time the tarpaulin was removed the sampling period had already finished.

The values from the personal samples were lower than all the 8h-TWA limits, and for most chemicals only traces were found.

The sampling results shown in the table only provide a snapshot of personal exposure levels, because these depend on many factors such as pattern of personal movement and weather conditions.

Please let me know if you have any questions.

Kind regards



Ruth Hinz
Research Officer/ PhD Candidate
Centre for Public Health Research, Massey University, Wellington Campus
r.hinz@massey.ac.nz
0800 624325 or 04-9793108

Table: Results of personal air samples taken on 5 and 6 November 2015

Chemical compound	Exposure limit 8h-TWA (ppb ¹)	Personal Samples (ppb)									
		1	2	3	4	5	6	4a	5a	6a	7
	Exposure limit										
1,2-dibromoethane	500	11.5	9.8	2.7	8.9	6.6	4.0	6.6	4.1	2.4	4.8
1,2-dichloroethane	5000	2.2	*	3.5	14.9	6.1	2.9	10.3	0.4	4.0	3.1
C2-alkylbenzenes	50000-100000	3.7	4.9	4.3	3.4	4.7	3.0	1.8	2.5	2.1	0.8
acetaldehyde	20000	*	16.4	*	173.2	207.8	*	117.1	*	15.5	*
ammonia	25000	*	*	*	*	*	*	*	*	*	*
benzene	1000	*	*	*	1.0	*	*	*	*	*	*
chloropicrin	100	*	*	1.8	1.3	0.6	0.6	*	1.1	*	0.0
ethylene oxide	1000	13.2	5.0	54.8	*	*	*	*	*	*	40.1
formaldehyde	500	*	*	*	*	*	*	*	*	*	*
hydrogen cyanide	Ceiling ² : 10000	5.9	0.4	2.1	10.3	5.1	6.0	10.3	3.8	4.3	0.2
hydrogen phosphide	300	10.3	11.3	3.7	4.5	12.6	*	2.1	8.2	1.7	13.9
methanol	200000	*	*	*	196.1	136.4	*	*	*	86.2	*
methyl bromide	5000	3.6	7.1	*	2.0	3.3	*	1.5	0.9	*	*
styrene	50000	1.1	*	0.5	0.6	*	0.9	*	0.2	0.6	1.3
toluene	50000	0.5	3.5	5.4	7.7	7.6	4.9	4.2	8.8	4.6	2.4

¹ ppb: parts per billion

² hydrogen cyanide does not have an averaged 8-hour work exposure limit, but a ceiling limit, which should not be exceeded for any time during any part of the working day.

* non-detectable