NSJ EnviroSciences Pty Ltd t/a MouldLab

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ANALYTICAL REPORT

CLIENT: Mitey Fresh Australia Pty Ltd
P.O. Box 431
Terrey Hills NSW 2084

PROPERTY: [redacted]
Manly NSW 2095
Your ref: Skilton/Manly

PURPOSE OF THIS REPORT: To detect mould present by Polymerase Chain Reaction (PCR) analysis of fungal DNA and determine relative mould species in the sample taken from within the premises pre-remediation.

Provide an **Environmental Relative Mouldiness Index (ERMI)** calculated on the basis of the mould species detected and evaluate the ERMI as an index of the severity of the mould present within the premises where sampling was conducted.

DATE OF SAMPLING: 10 April 2017

SAMPLED BY: Carol Parr

DATE SAMPLE/S RECEIVED: 12 April 2017

DATE OF REPORT: 18 April 2017

PREPARED BY: Jill Lark (CD)

REPORTED AND RELEASED BY: David Lark
Mycologist

OUR REFERENCE: 170991 - ERMI

AIHA Environmental Microbiology Proficient
EMPAT Proficient Lab. No: 208121

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ANALYTICAL REPORT

1 INSTRUCTIONS

1.1 The sample collected at the property was submitted by Mitey Fresh Australia Pty Ltd.

1.2 The purpose of the sample submitted for analysis was to detect and report on mould present using PCR detection methods as set out in the attached report and interpret these findings pre-remediation.

2 COMMENTARY

2.1 The sample collected was referred under chain of custody to our laboratory for analysis and reporting.

2.2 The sample received was labelled and in an intact condition.

2.3 This is an Analytical Report only and may not be in a format acceptable for litigation purposes because different Jurisdictions have differing requirements. Please contact MouldLab for further assistance.

2.4 Unless MouldLab has either performed the assessment from which this sample emanates or has been provided with the requisite certification from the sampler as per Reference 8, the results contained in this report should not be relied upon as the sole criteria for granting "clearance" or post remediation verification by any party.

2.5 In accordance with our Terms & Conditions this document and its contents are intended for the Addressee only and contains opinions held by the Author who prepared this report based on material available at the time of preparation and expressed for the purposes of consideration by the Addressee and is not for general publication without written consent.

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3 RESULTS

3.1 PCR MOULD ANALYSIS

The result of the mould detected in the vacuum sample collected from the property was tabulated as shown in the following table, together with the interpretation of the data.

Group 1; Water Damage Moulds

	SE	SE/mg	Logs 10
Aspergillus flavus	ND	ND	
Aspergillus fumigatus	3	1	
Aspergillus niger	19	4	0.6
Aspergillus ochraceus	1,267	259	2.4
Aspergillus penicillioides	67,410	13,757	4.1
Aspergillus restrictus	3,578	730	2.9
Aspergillus sclerotiorum	3	1	
Aspergillus sydowii	41	8	0.9
Aspergillus unguis	8	1	
Aspergillus versicolor	101	21	1.3
Aureobasidium pullulans	8,626	1,760	3.2
Chaetomium globosum	389	79	1.9
Cladosporium sphaerospermum	453	92	2.0
Eurotium amstelodami	29,695	6,060	3.8
Paecilomyces variotii	3	1	
Penicillium brevicompactum	309	63	1.8
Penicillium corylophilum	ND	ND	
Penicillium crustosum	ND	ND	
Penicillium purpurogenum	6	1	
Penicliium spinulosum	128	26	1.4
Penicillium variabile	22	4	0.7
Scopulariopsis brevicaulis/fusca	1	1	
Scopulariopsis chartarum	34	7	0.8
Stachybotrys chartarum	ND	ND	
Trichoderma viride	9	1	
Wallemia sebi	152,115	31,044	4.5
Sum of Logs		**32.3**	

Group 2; Common Indoor Moulds

	SE	SE/mg	Logs 10
Acremonium strictum	7	1	0.0
Alternaria alternata	152	31	1.5
Aspergillus ustus	ND	ND	
Cladosporium cladosporioides 1	1,028	210	2.3
Cladosporium cladosporioides 2	27	6	0.7
Cladosporium herbarum	109	22	1.3
Epicoccum nigrum	2,160	441	2.6
Mucor amphibiorum	12	2	0.4
Penicillium chrysogenum	18	4	0.6
Rhizopus stolonifer	5	1	0.0
Sum of Logs		**9.5**	

Sample I.D	170991-1
Sample weight (mg)	4.9
ERMI Results= (G1-G2)	**22.8**

SE* =Spore Equivalents
ND= Non Detected

4 CONCLUSIONS

4.1 The ERMI was found to be:-

Sample No:	Sample Location	Environmental Relative Mouldiness Index (ERMI)	Interpretation
170991-1	Main bedroom and office	22.8	**Q4**

4.2 Interpretation was made with reference to the following table:-

Level	ERMI Value	Interpretation	Comment
Q1	Less than -4	Low Relative Mouldiness	Further investigation is not needed to determine the sources of the mould.
Q2	-4 to 0	Low- Medium Relative Mouldiness	Further investigation may be needed to determine the sources of the mould if occupants have been reactive, sensitised, genetically predisposed or otherwise immuno-compromised
Q3	0 to 5	Medium- High Relative Mouldiness	
Q4	>5 to 20	High Relative Mouldiness	Source and cause of mould should be determined and remediation undertaken, reducing the ERMI to levels below Q2
	>20	Very High Relative Mouldiness	

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4.3 According to Vesper[9] ERMI Scores have a SD of +/-3 and should be assessed with this in mind.

4.4 Further assessment was performed by calculating the HERTSMI-2 score from this data, it was found to be:-

Site Address: [redacted] Manly NSW 2095 Our ref: 170991	Sample Location: Main bedroom / office	
Fungal ID \ Sample ID:	170991-1	
Sample type: vacuum	Spore E./mg	Weighting
Aspergillus penicillioides	13757	10
Aspergillus versicolor	21	4
Chaetomium globosum	79	6
Stachybotrys chartarum	0	0
Wallemia sebi	31044	10
HERTSMI-2 SCORE		**30**

4.5 HERTSMI-2 scores of >15 have been associated with re-occurance of CIRS-WDB symptoms on more than 99% of occasions as shown in Reference 10.

4.6 A spore equivalent may reflect the presence of any other fungal structures (i.e. mycelia) containing the same number of target genes as a spore.

4.7 Genetically closed-related species may be detected in the indicator assay:

As reported	Includes
Eurotium (Asp.) amstelodami	*E. chevalieri, E. herbariorum, E. rubrum and E. repens;*
Penicillium spinulosum	*P. glabrum, P. lividum, P. pupurescens, and P. thomii*
Trichoderma viride	*T. koningii and T. atroviride.*
Aspergillus restrictus	*A. caesillus and A. conicus.*
Mucor amphibiorum	*M. circinelloides, M. hiemalis, M. indicus, M. mucedo, M. racemosus, M. ramosissimus*
Rhizopus zygosporus	*R. homothalicus, R. microsporus, R. oligosporus, R. oryzae*
Penicillium crustosum	*P. camembertii, P. commune, P. echinulatum, P. solitum*

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For and on behalf of
NSJ EnviroSciences Pty Ltd
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DAVID LARK
Mycologist

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