

Room	Dates/Observations
Production Room	<p>9/17/19: Initial assessment. 4 water stained ceiling tiles. Other ceiling tiles have already been removed in two areas of the room, exposing dry wood framing above. Dry moisture readings.</p> <p>9/18/19: Microbial air sampling performed in this room. Results did not indicate elevated fungal spore levels.</p> <p>10/10/19: No musty odor. Approximately 10 SF ceiling tiles removed from NW section and 12 SF ceiling tiles removed from south central section. Approximately 3 SF of drywall removed from upper central portion of south wall, dry moisture readings on exposed wood framing and drywall below removal. Dry moisture readings, no visible fungal growth, no water staining. Microbial air sampling was performed in this room. The results indicated elevated <i>Penicillium/Aspergillus</i> levels (1,100 Count/m<sup>3</sup>). Additional drywall removal and re-cleaning recommended.</p> <p>10/14/19: No musty odor. No additional ceiling tile removal. Drywall above removed ceiling tiles was also removed. Ceiling cavity in south section of room is open to second ceiling cavity above in the vicinity of the HVAC unit. Ceiling cavity in NW section also open to second ceiling cavity above. No visible fungal growth or water staining and no musty odor. Microbial air sampling conducted in this room. Results did not indicate elevated fungal spore levels.</p> <p>No asbestos containing materials removed in this room.</p>

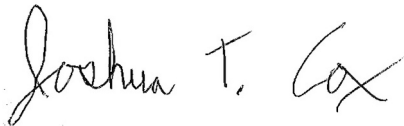
Report for:

**Ms. Victoria Shepersky**  
**TRC Solutions, Inc.**  
4105 SE International Way, Suite 505  
Milwaukie, OR 97222

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Regarding: Project: 362890 West Tualatin ES  
EML ID: 2256569

Approved by:



Operations Manager  
Joshua Cox

Dates of Analysis:

Spore trap analysis: 09-19-2019

Service SOPs: Spore trap analysis (EM-MY-S-1038)  
AIHA-LAP, LLC accredited service, Lab ID #102297

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received. Sample air volume is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890 West Tualatin ES

Date of Sampling: 09-18-2019  
 Date of Receipt: 09-19-2019  
 Date of Report: 09-19-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956406: Outside Air N @ Gym & Main Bldg				28956442: Principal's Office				28956403: Gym South Portion				28956463: Gym North Portion			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729973-1				10729974-1				10729975-1				10729976-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	1+				3+				4+				4+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments					1	13	13	n/a	2	27	13	n/a	7	93	13	n/a
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	109	5,400	n/a	100	2	27	n/a	100	18	240	n/a	100	28	370	n/a	100
Alternaria																
Ascospores	34	450	13	8					3	40	13	17				
Basidiospores	42	4,500	110	83					3	40	13	17	4	53	13	14
Botrytis	1	13	13	< 1												
Cercospora																
Chaetomium																
Cladosporium	25	330	13	6	1	13	13	50	6	80	13	33	12	160	13	43
Epicoccum																
Other brown													1	13	13	4
Penicillium/Aspergillus types	5	67	13	1	1	13	13	50	5	67	13	28	9	120	13	32
Smuts, Periconia, Myxomycetes	2	27	13	< 1					1	13	13	6	2	27	13	7
Stachybotrys																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

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Date of Sampling: 09-18-2019  
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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956428: Stage				28956426: A100				28956429: A102				28956421: Main Corridor N @ A102			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729977-1				10729978-1				10729979-1				10729980-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	4+				4+				4+				4+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	3	40	13	n/a	10	130	13	n/a	13	170	13	n/a	10	130	13	n/a
Pollen									1	13	13	n/a				
<b>§ TOTAL FUNGAL SPORES</b>	<b>36</b>	<b>480</b>	<b>n/a</b>	<b>100</b>	<b>50</b>	<b>670</b>	<b>n/a</b>	<b>100</b>	<b>93</b>	<b>1,200</b>	<b>n/a</b>	<b>100</b>	<b>66</b>	<b>880</b>	<b>n/a</b>	<b>100</b>
Alternaria					3	40	13	6								
Ascospores	2	27	13	6					1	13	13	1	3	40	13	5
Basidiospores	8	110	13	22	6	80	13	12	3	40	13	3	5	67	13	8
Botrytis																
Chaetomium																
Cladosporium	13	170	13	36	21	280	13	42	53	710	13	57	36	480	13	55
Epicoccum	1	13	13	3												
Other brown									3	40	13	3				
Penicillium/Aspergillus types	12	160	13	33	17	230	13	34	28	370	13	30	17	230	13	26
Pithomyces					1	13	13	2	1	13	13	1				
Rusts									1	13	13	1				
Smuts, Periconia, Myxomycetes					2	27	13	4	3	40	13	3	5	67	13	8
Stachybotrys																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956420: A104				28956469: A106				28956468: A108				28956720: Main Corridor Center @ Library			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729981-1				10729982-1				10729983-1				10729984-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	3+				4+				3+				4+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	3	40	13	n/a	8	110	13	n/a	2	27	13	n/a	6	80	13	n/a
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	19	250	n/a	100	43	570	n/a	100	19	250	n/a	100	51	680	n/a	100
Alternaria																
Ascospores					2	27	13	5	1	13	13	5				
Basidiospores	2	27	13	11	2	27	13	5	2	27	13	11	5	67	13	10
Botrytis	1	13	13	5												
Cercospora																
Chaetomium																
Cladosporium	8	110	13	42	14	190	13	33	8	110	13	42	27	360	13	53
Epicoccum																
Other brown	1	13	13	5	1	13	13	2					1	13	13	2
Penicillium/Aspergillus types	7	93	13	37	23	310	13	53	8	110	13	42	17	230	13	33
Smuts, Periconia, Myxomycetes					1	13	13	2					1	13	13	2
Stachybotrys																

**Comments:**

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956443: A110				28956404: A112				28956402: A114				28956444: Main Corridor S @ A116			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729985-1				10729986-1				10729987-1				10729988-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	4+				3+				4+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	12	160	13	n/a	2	27	13	n/a	9	120	13	n/a	2	27	13	n/a
Pollen	1	13	13	n/a												
<b>§ TOTAL FUNGAL SPORES</b>	<b>41</b>	<b>550</b>	<b>n/a</b>	<b>100</b>	<b>31</b>	<b>410</b>	<b>n/a</b>	<b>100</b>	<b>72</b>	<b>960</b>	<b>n/a</b>	<b>100</b>	<b>45</b>	<b>600</b>	<b>n/a</b>	<b>100</b>
Alternaria																
Ascospores					3	40	13	10	1	13	13	1	8	110	13	18
Basidiospores	2	27	13	5	6	80	13	19	10	130	13	14	23	310	13	51
Botrytis																
Cercospora																
Chaetomium																
Cladosporium	25	330	13	61	13	170	13	42	33	440	13	46	7	93	13	16
Epicoccum																
Other brown					1	13	13	3	1	13	13	1	1	13	13	2
Penicillium/Aspergillus types	13	170	13	32	7	93	13	23	23	310	13	32	6	80	13	13
Pithomyces																
Smuts, Periconia, Myxomycetes	1	13	13	2	1	13	13	3	4	53	13	6				
Stachybotrys																

**Comments:**

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956447: A116				28956396: A Hall @ A118				28956439: A118				28862359: A120			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729989-1				10729990-1				10729991-1				10729992-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	2+				2+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	4	53	13	n/a	1	13	13	n/a	3	40	13	n/a	1	13	13	n/a
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	<b>88</b>	<b>1,200</b>	<b>n/a</b>	<b>100</b>	<b>94</b>	<b>1,300</b>	<b>n/a</b>	<b>100</b>	<b>45</b>	<b>600</b>	<b>n/a</b>	<b>100</b>	<b>171</b>	<b>2,300</b>	<b>n/a</b>	<b>100</b>
Alternaria					1	13	13	1								
Ascospores	14	190	13	16	16	210	13	17	7	93	13	16	31	410	13	18
Basidiospores	52	690	13	59	49	650	13	52	13	170	13	29	112	1,500	13	65
Botrytis																
Cercospora																
Chaetomium																
Cladosporium	11	150	13	13	11	150	13	12	4	53	13	9	6	80	13	4
Epicoccum																
Other brown																
Penicillium/Aspergillus types	6	80	13	7	17	230	13	18	20	270	13	44	17	230	13	10
Pithomyces	1	13	13	1									1	13	13	1
Smuts, Periconia, Myxomycetes	4	53	13	5					1	13	13	2	4	53	13	2
Stachybotrys																

**Comments:**

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956348: A122				28956453: LL10 Music				28956408: Production Rm Off Library				28956709: Tech Rm Off Library			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10729993-1				10729994-1				10729995-1				10729996-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	2+				2+				2+				1+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	3	40	13	n/a	2	27	13	n/a								
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	58	770	n/a	100	26	350	n/a	100	9	120	n/a	100	9	120	n/a	100
Alternaria																
Ascospores	11	150	13	19	3	40	13	12	1	13	13	11				
Basidiospores	33	440	13	57	10	130	13	38	5	67	13	56	7	93	13	78
Botrytis																
Cercospora																
Chaetomium																
Cladosporium	7	93	13	12	1	13	13	4					1	13	13	11
Epicoccum																
Other brown																
Penicillium/Aspergillus types	6	80	13	10	12	160	13	46	3	40	13	33	1	13	13	11
Pithomyces	1	13	13	2												
Rusts																
Stachybotrys																

**Comments:**

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956414: Library North Portion				28956417: Library South Portion				28956451: Resource Rm Off Library			
Comments (see below)	None				None				None			
Lab ID-Version‡:	10729997-1				10729998-1				10729999-1			
Analysis Date:	09/19/2019				09/19/2019				09/19/2019			
Sample volume (liters)	75				75				75			
Background debris (1-4+)††	2+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments									1	13	13	n/a
Pollen												
<b>§ TOTAL FUNGAL SPORES</b>	11	150	n/a	100	8	110	n/a	100	31	410	n/a	100
Alternaria												
Ascospores	2	27	13	18					1	13	13	3
Basidiospores	4	53	13	36	2	27	13	25	16	210	13	52
Botrytis												
Cercospora												
Chaetomium												
Cladosporium	2	27	13	18	1	13	13	13	2	27	13	6
Epicoccum												
Other brown					2	27	13	25				
Penicillium/Aspergillus types	3	40	13	27	3	40	13	38	12	160	13	39
Pithomyces												
Rusts												
Stachybotrys												

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**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	28956728: Speech Rm				28956690: Outside Air S @ A114 & A112			
Comments (see below)	None				None			
Lab ID-Version‡:	10730000-1				10730001-1			
Analysis Date:	09/19/2019				09/19/2019			
Sample volume (liters)	75				75			
Background debris (1-4+)††	2+				1+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	1	13	13	n/a				
Pollen					7	93	13	n/a
<b>§ TOTAL FUNGAL SPORES</b>	19	250	n/a	100	243	26,000	n/a	100
Alternaria								
Ascospores	1	13	13	5	73	970	13	4
Basidiospores	9	120	13	47	136	24,000	180	94
Botrytis								
Cercospora					1	13	13	< 1
Chaetomium								
Cladosporium	7	93	13	37	22	290	13	1
Epicoccum					2	27	13	< 1
Other brown								
Penicillium/Aspergillus types					9	120	13	< 1
Pithomyces								
Smuts, Periconia, Myxomycetes	2	27	13	11				
Stachybotrys								

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.


Report for:

**Ms. Victoria Shepersky**  
**TRC Solutions, Inc.**  
4105 SE International Way, Suite 505  
Milwaukie, OR 97222

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Regarding: Project: 362890, West Tualatin View ES  
EML ID: 2273798

Approved by:



Technical Manager  
Justin Ford

Dates of Analysis:  
Spore trap analysis: 10-11-2019

Service SOPs: Spore trap analysis (EM-MY-S-1038)  
AIHA-LAP, LLC accredited service, Lab ID #178599

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received. Sample air volume is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890, West Tualatin View ES

Date of Sampling: 10-10-2019  
 Date of Receipt: 10-11-2019  
 Date of Report: 10-11-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	29149522: Outside Air North				29149953: A104				29149543: <b>Production Room</b>				29149946: Technology Room (South)			
Comments (see below)	A				A				A				A			
Lab ID-Version‡:	10811500-1				10811501-1				10811502-1				10811503-1			
Analysis Date:	10/11/2019				10/11/2019				10/11/2019				10/11/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	2+				2+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hypthal fragments	1	13	13	n/a												
Pollen	1	13	13	n/a												
<b>§ TOTAL FUNGAL SPORES</b>	154	2,100	n/a	100	21	280	n/a	100	95	1,300	n/a	100	252	3,400	n/a	100
Alternaria																
Ascospores	28	370	13	18												
Basidiospores	102	1,400	13	66	12	160	13	57					9	120	13	4
Botrytis																
Chaetomium																
Cladosporium	9	120	13	6	2	27	13	10	15	200	13	16	3	40	13	1
Other brown	1	13	13	1												
Penicillium/Aspergillus types	11	150	13	7	7	93	13	33	80	<b>1,100</b>	13	84	240	3,200	13	95
Rusts																
Smuts, Periconia, Myxomycetes	3	40	13	2												
Stachybotrys																
Torula																
Ulocladium																

**Comments:** A) Analysis of replicate sample is delayed.

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890, West Tualatin View ES

Date of Sampling: 10-10-2019  
 Date of Receipt: 10-11-2019  
 Date of Report: 10-11-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	29149944: A110				29149951: A112				29149958: A114				29149968: A116			
Comments (see below)	A				A				A				A			
Lab ID-Version‡:	10811504-1				10811505-1				10811506-1				10811507-1			
Analysis Date:	10/11/2019				10/11/2019				10/11/2019				10/11/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	1+				1+				2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments									1	13	13	n/a				
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	14	190	n/a	100	12	160	n/a	100	74	990	n/a	100	38	510	n/a	100
Alternaria																
Ascospores	3	40	13	21	1	13	13	8	13	170	13	18	4	53	13	11
Basidiospores	6	80	13	43	6	80	13	50	22	290	13	30	18	240	13	47
Botrytis																
Chaetomium																
Cladosporium	1	13	13	7	2	27	13	17					1	13	13	3
Other brown																
Penicillium/Aspergillus types	3	40	13	21	3	40	13	25	38	510	13	51	14	190	13	37
Rusts													1	13	13	3
Smuts, Periconia, Myxomycetes	1	13	13	7					1	13	13	1				
Stachybotrys																
Torula																
Ulocladium																

**Comments:** A) Analysis of replicate sample is delayed.

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890, West Tualatin View ES

Date of Sampling: 10-10-2019  
 Date of Receipt: 10-11-2019  
 Date of Report: 10-11-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	29149941: A122				29149950: Outside Air South			
Comments (see below)	A				A			
Lab ID-Version‡:	10811508-1				10811509-1			
Analysis Date:	10/11/2019				10/11/2019			
Sample volume (liters)	75				75			
Background debris (1-4+)††	2+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	1	13	13	n/a	2	27	13	n/a
Pollen								
<b>§ TOTAL FUNGAL SPORES</b>	200	2,700	n/a	100	151	2,000	n/a	100
Alternaria					1	13	13	1
Ascospores	22	290	13	11	30	400	13	20
Basidiospores	35	470	13	18	69	920	13	46
Botrytis					1	13	13	1
Chaetomium								
Cladosporium	27	360	13	14	27	360	13	18
Other brown								
Penicillium/Aspergillus types	116	1,500	13	58	12	160	13	8
Rusts								
Smuts, Periconia, Myxomycetes					11	150	13	7
Stachybotrys								
Torula								
Ulocladium								

**Comments:** A) Analysis of replicate sample is delayed.

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

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§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

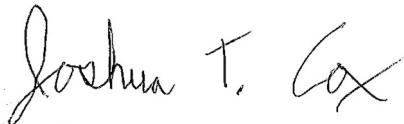
Report for:

**Ms. Victoria Shepersky**  
**TRC Solutions, Inc.**  
4105 SE International Way, Suite 505  
Milwaukie, OR 97222

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Regarding: Project: 362890; West Tualatin View Elementary  
EML ID: 2276023

Approved by:



Operations Manager  
Joshua Cox

Dates of Analysis:

Spore trap analysis: 10-15-2019

Service SOPs: Spore trap analysis (EM-MY-S-1038)  
AIHA-LAP, LLC accredited service, Lab ID #102297

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received. Sample air volume is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
 Date of Report: 10-15-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	2914 9710: Outdoor 1 Near Cafeteria				2914 9812: Main Office				2914 9693: Principals Office				2914 9264: Mail Room			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10821181-1				10821182-1				10821183-1				10821184-1			
Analysis Date:	10/15/2019				10/15/2019				10/15/2019				10/15/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	3+				3+				3+				4+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments													1	13	13	n/a
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	65	5,500	n/a	100	4	53	n/a	100	22	290	n/a	100	17	230	n/a	100
Alternaria					1	13	13	25								
Ascospores	13	170	13	3									1	13	13	6
Basidiospores	39	5,200	130	94					10	130	13	45	6	80	13	35
Chaetomium																
Cladosporium	10	130	13	2	2	27	13	50	4	53	13	18	4	53	13	24
Other brown																
Penicillium/Aspergillus types	2	27	13	< 1					8	110	13	36	6	80	13	35
Smuts, Periconia, Myxomycetes	1	13	13	< 1	1	13	13	25								
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Zygomycetes																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.



Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
 Date of Report: 10-15-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	2915 1532: Health Room				2914 9692: Book Room				2914 9685: Stairwell				2914 9885: A118			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10821185-1				10821186-1				10821188-1				10821189-1			
Analysis Date:	10/15/2019				10/15/2019				10/15/2019				10/15/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	3+				3+				3+				2+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments																
Pollen					2	27	13	n/a								
<b>§ TOTAL FUNGAL SPORES</b>	12	160	n/a	100	4	53	n/a	100	42	560	n/a	100	43	570	n/a	100
Alternaria																
Ascospores																
Basidiospores	7	93	13	58	1	13	13	25	1	13	13	2	15	200	13	35
Chaetomium																
Cladosporium	2	27	13	17	1	13	13	25	4	53	13	10	4	53	13	9
Other brown																
Penicillium/Aspergillus types	3	40	13	25	2	27	13	50	37	490	13	88	24	320	13	56
Smuts, Periconia, Myxomycetes																
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Zygomycetes																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
 Date of Report: 10-15-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	2914 9899: Library				2914 9881: Rec Room				2914 9900: Staff Room				2914 9731: A120			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10821190-1				10821191-1				10821192-1				10821193-1			
Analysis Date:	10/15/2019				10/15/2019				10/15/2019				10/15/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	3+				3+				3+				3+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments					1	13	13	n/a								
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	14	190	n/a	100	11	150	n/a	100	26	350	n/a	100	31	410	n/a	100
Alternaria																
Ascospores	1	13	13	7					2	27	13	8				
Basidiospores	8	110	13	57	7	93	13	64	16	210	13	62	12	160	13	39
Chaetomium																
Cladosporium	2	27	13	14	2	27	13	18	2	27	13	8	5	67	13	16
Other brown									1	13	13	4				
Penicillium/Aspergillus types	3	40	13	21	2	27	13	18	5	67	13	19	14	190	13	45
Smuts, Periconia, Myxomycetes																
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Zygomycetes																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

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††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
 Date of Report: 10-15-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	2914 9893: A122				2914 9013: A114				2914 9269: Girls RR				2914 9889: Production Room			
Comments (see below)	None				None				None				None			
Lab ID-Version‡:	10821194-1				10821195-1				10821196-1				10821197-1			
Analysis Date:	10/15/2019				10/15/2019				10/15/2019				10/15/2019			
Sample volume (liters)	75				75				75				75			
Background debris (1-4+)††	3+				3+				3+				3+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments	1	13	13	n/a												
Pollen																
<b>§ TOTAL FUNGAL SPORES</b>	21	280	n/a	100	11	150	n/a	100	13	170	n/a	100	7	93	n/a	100
Alternaria	1	13	13	5												
Ascospores	2	27	13	10	1	13	13	9	1	13	13	8				
Basidiospores	11	150	13	52	2	27	13	18	2	27	13	15	2	27	13	29
Chaetomium																
Cladosporium	1	13	13	5	4	53	13	36								
Other brown																
Penicillium/Aspergillus types	5	67	13	24	4	53	13	36	9	120	13	69	5	67	13	71
Smuts, Periconia, Myxomycetes	1	13	13	5												
Stachybotrys									1	13	13	8				
Stemphylium																
Torula																
Ulocladium																
Zygomycetes																

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

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††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

Client: TRC Solutions, Inc.  
 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
 Date of Report: 10-15-2019

**SPORE TRAP REPORT: NON-VIABLE METHODOLOGY**

Location:	2914 9686: Cafeteria 1C				2915 2548: Outdoor 2 Front			
Comments (see below)	None				None			
Lab ID-Version‡:	10821198-1				10821199-1			
Analysis Date:	10/15/2019				10/15/2019			
Sample volume (liters)	75				75			
Background debris (1-4+)††	3+				1+			
	raw ct.	Count/m3	DL/m3*	%	raw ct.	Count/m3	DL/m3*	%
Hyphal fragments								
Pollen					1	13	13	n/a
<b>§ TOTAL FUNGAL SPORES</b>	<b>7</b>	<b>93</b>	<b>n/a</b>	<b>100</b>	<b>124</b>	<b>1,700</b>	<b>n/a</b>	<b>100</b>
Alternaria								
Ascospores					14	190	13	11
Basidiospores	1	13	13	14	101	1,300	13	81
Chaetomium								
Cladosporium	2	27	13	29	1	13	13	1
Other brown								
Penicillium/Aspergillus types	3	40	13	43	8	110	13	6
Smuts, Periconia, Myxomycetes	1	13	13	14				
Stachybotrys								
Stemphylium								
Torula								
Ulocladium								
Zygomycetes								

**Comments:**

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

The analytical sensitivity/limit of detection is the Count/m<sup>3</sup> divided by the raw count, expressed in Count/m<sup>3</sup>.

\*The detection limit/limit of detection (DL) per cubic meter (m<sup>3</sup>) has been rounded to two significant figures to reflect analytical precision.

††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Fungal Spores has been rounded to two significant figures to reflect analytical precision.

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 C/O: Ms. Victoria Shepersky  
 Re: 362890; West Tualatin View Elementary

Date of Sampling: 10-14-2019  
 Date of Receipt: 10-15-2019  
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**MoldRANGE™, Local Climate; Extended Outdoor Comparison**  
**Outdoor Location: 2914 9710, Outdoor 1 Near Cafeteria**

Fungi Identified	Outdoor data	Typical Outdoor Data for: October in Oregon† EMLab Local Climate code¹						Typical Outdoor Data for: The entire year in Oregon† EMLab Local Climate code¹					
		A Annual Temp, B Elev., B Rain, B Temp. Range (n‡=171)						A Annual Temp, B Elev., B Rain, B Temp. Range (n‡=2055)					
Project zip code 97225	spores/m3	very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
<b>Generally able to grow indoors*</b>													
Alternaria	-	13	13	19	53	80	30	13	13	13	53	67	19
Bipolaris/Drechslera group	-	-	-	-	-	-	4	10	13	13	27	50	2
Chaetomium	-	-	-	-	-	-	5	12	13	13	13	31	5
Cladosporium	130	320	480	1,400	3,300	5,600	99	53	110	430	1,600	3,100	87
Curvularia	-	-	-	-	-	-	2	13	13	13	13	13	1
Nigrospora	-	-	-	-	-	-	3	7	13	13	27	53	2
Other brown	-	13	13	27	53	91	38	13	13	13	53	67	25
Penicillium/Aspergillus types	27	160	290	560	1,800	2,400	98	53	110	320	800	1,500	90
Stachybotrys	-	-	-	-	-	-	1	7	13	13	110	1,000	< 1
Torula	-	-	-	-	-	-	5	13	13	13	40	60	6
<b>Seldom found growing indoors**</b>													
Ascospores	170	110	320	1,300	3,700	6,400	98	80	160	530	1,900	3,500	93
Basidiospores	5,200	650	1,700	5,800	13,000	18,000	> 99	200	370	1,400	4,700	8,500	98
Rusts	-	13	13	13	40	67	36	13	13	20	53	93	22
Smuts, Periconia, Myxomycetes	13	13	13	53	130	260	67	13	13	40	110	220	52
<b>§ TOTAL SPORES/m3</b>	<b>5,500</b>												

¹EMLab Local Climate codes are a climate classification scheme for statewide geographic areas. The MoldRANGE™ Local Climate report uses the sampling location zip code to identify the EMLab Local Climate code in that area. Using information available from the NOAA weather database, the EMLab Local Climate code sharpens the precision of the MoldRANGE™ reporting system, providing more reliable estimates of the range and average concentrations of the different airborne fungal spore types for each region. Additional information on the EMLab Local Climate code system can be found on the last page of this report.

†The Typical Outdoor Data represents the typical outdoor spore levels across the state for the time period and EMLab Local Climate code indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically and if not enough data is available to make a statistically meaningful assessment, it is indicated with a dash.

‡ n is the sample size used to calculate the MoldRANGE™ Local Climate data summarized in the table.

\* The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

\*\* These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

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**MoldRANGE™, Local Climate; Extended Outdoor Comparison**  
**Outdoor Location: 2915 2548, Outdoor 2 Front**

Fungi Identified	Outdoor data	Typical Outdoor Data for: October in Oregon† EMLab Local Climate code¹						Typical Outdoor Data for: The entire year in Oregon† EMLab Local Climate code¹					
		A Annual Temp, B Elev., B Rain, B Temp. Range (n‡=171)						A Annual Temp, B Elev., B Rain, B Temp. Range (n‡=2055)					
Project zip code 97225	spores/m3	very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
<b>Generally able to grow indoors*</b>													
Alternaria	-	13	13	19	53	80	30	13	13	13	53	67	19
Bipolaris/Drechslera group	-	-	-	-	-	-	4	10	13	13	27	50	2
Chaetomium	-	-	-	-	-	-	5	12	13	13	13	31	5
Cladosporium	13	320	480	1,400	3,300	5,600	99	53	110	430	1,600	3,100	87
Curvularia	-	-	-	-	-	-	2	13	13	13	13	13	1
Nigrospora	-	-	-	-	-	-	3	7	13	13	27	53	2
Other brown	-	13	13	27	53	91	38	13	13	13	53	67	25
Penicillium/Aspergillus types	110	160	290	560	1,800	2,400	98	53	110	320	800	1,500	90
Stachybotrys	-	-	-	-	-	-	1	7	13	13	110	1,000	< 1
Torula	-	-	-	-	-	-	5	13	13	13	40	60	6
<b>Seldom found growing indoors**</b>													
Ascospores	190	110	320	1,300	3,700	6,400	98	80	160	530	1,900	3,500	93
Basidiospores	1,300	650	1,700	5,800	13,000	18,000	> 99	200	370	1,400	4,700	8,500	98
Rusts	-	13	13	13	40	67	36	13	13	20	53	93	22
Smuts, Periconia, Myxomycetes	-	13	13	53	130	260	67	13	13	40	110	220	52
<b>§ TOTAL SPORES/m3</b>	<b>1,700</b>												

¹EMLab Local Climate codes are a climate classification scheme for statewide geographic areas. The MoldRANGE™ Local Climate report uses the sampling location zip code to identify the EMLab Local Climate code in that area. Using information available from the NOAA weather database, the EMLab Local Climate code sharpens the precision of the MoldRANGE™ reporting system, providing more reliable estimates of the range and average concentrations of the different airborne fungal spore types for each region. Additional information on the EMLab Local Climate code system can be found on the last page of this report.

†The Typical Outdoor Data represents the typical outdoor spore levels across the state for the time period and EMLab Local Climate code indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically and if not enough data is available to make a statistically meaningful assessment, it is indicated with a dash.

‡ n is the sample size used to calculate the MoldRANGE™ Local Climate data summarized in the table.

\* The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

\*\* These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

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### **Understanding EMLab Local Climate Codes**

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Outdoor airborne spore concentrations are strongly influenced by climate and weather patterns, often resulting in pronounced seasonal and diurnal cycles (Burge 1995). The seasonal climatic changes directly affect the growth cycle of plants, thereby influencing fungal growth, spore maturation, and release cycles. By evaluating outdoor spore concentrations across similar climatic zones rather than for the state as a whole, it is possible to provide a more representative estimate of typical outdoor spore levels and frequency of occurrence for different airborne fungal spore types in a given area.

The EMLab Local Climate code system is a novel and patent pending classification system that uses data from the NOAA - National Oceanic and Atmospheric Administration database to define unique climate regions by state. The following local climate variables, for each statewide zip code, are obtained from NOAA and assigned a letter code of A (above the statewide average for that variable) or B (below the statewide average for that variable):

1. Annual High Temperature
2. Elevation
3. Rainfall/Precipitation
4. Monthly Temperature Range

The result is a 4-character code assigned to each statewide zip code, referred to as the Local Climate Code. Below are some examples of decoded Local Climate Codes:

**AAAA** = Above avg. Annual High Temperature, Above avg. Elevation, Above avg. Rainfall/Precipitation, Above avg. Monthly Temperature Range  
**AABB** = Above avg. Annual High Temperature, Above avg. Elevation, Below avg. Rainfall/Precipitation, Below avg. Monthly Temperature Range  
**BBA A** = Below avg. Annual High Temperature, Below avg. Elevation, Above avg. Rainfall/Precipitation, Above avg. Monthly Temperature Range

The actual outdoor air sample data from matching local climate codes in each state are then compiled in a manner relating typical spore concentrations and frequency of occurrence.

The NOAA local climate variables were selected by mapping data points from a subset of approximately 145,000 weather and geographic database entries to over 80,000 outdoor spore trap samples with known zip codes and assessing them using orthogonal array experimental design techniques. The results were then compared to the typical ranges of spore types found when grouping zip codes using the Koppen-Geiger climatic classification system; a commonly used climatic system that provides an objective numerical definition in terms of climatic elements such as temperature, rainfall, and other seasonal characteristics. The EMLab Local Climate codes showed improved granularity and refinement of the zip code groupings, implying a better representation of the expected range of spore types to be found within an individual zip code.

The values on this report were calculated by obtaining the four variables listed above from the over 585 million data points of weather and geographic information available in the NOAA database, and determining the frequencies and percentile values of spore types by utilizing over 180,000 Eurofins EMLab P&K outdoor spore trap samples with known zip codes.

This report groups statewide zip codes in relation to these EMLab Local Climate codes and summarizes MoldRANGE™ data by month and year within each EMLab Local Climate code.

#### **References:**

Burge, Harriet, A. Bioaerosols: Boca Raton: Lewis Publishers, pp. 163-171, 1995.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by Eurofins EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, Eurofins EMLab P&K may not have received and tested a representative number of samples for every region or time period. Eurofins EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

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**Mold/Fungal Growth Rating Details**

Growth Rating	Quantities of molds indicating growth are listed in the MOLD/FUNGAL GROWTH section. Judgement is used in determining the amount of growth present in the sample. For example, if only one portion of the sample has evidence of heavy growth, then it will receive a rating of heavy growth even though, strictly speaking, on a percentage basis of the entire sample, the amount of growth is low.	
	Swab/Tape/Dust/Wipe sample	Bulk Sample
< 1+ (Very Light Growth)	Evidence of very light growth observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in less than 10% of the microscopic fields examined.	Areas of very light growth detected by the presence of spores of one type seen with underlying mycelial and/or with their sporulating structures in the bulk sample.
1+ (Light Growth)	Evidence of light growth observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in 10 to 25% of the microscopic fields examined.	Areas of light growth detected by the presence of spores of one type seen with underlying mycelial and/or with their sporulating structures in the bulk sample.
2+ (Moderate Growth)	Evidence of moderate growth observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in 26 to 50% of the microscopic fields examined.	Areas of moderate growth detected by the presence of spores of one type seen with underlying mycelial and/or with their sporulating structures in the bulk sample.
3+ (Heavy Growth)	Evidence of heavy growth observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in 51 to 75% of the microscopic fields examined.	Areas of heavy growth detected by the presence of spores of one type seen with underlying mycelial and/or with their sporulating structures in the bulk sample.
4+ (Very Heavy Growth)	Evidence of very heavy growth observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found to be nearly confluent in the majority of the microscopic fields examined.	Areas of very heavy growth detected by the presence of spores of one type seen with underlying mycelial and/or with their sporulating structures in the bulk sample.

**Miscellaneous Spores**

Slides/specimens are examined for the presence of mold spores and pollen, noting the quantities and distribution of spore types found. A designation of 'normal trapping' is made when a mix of spore types is present with the same general distribution as is usually found outdoors. In other words, the biological component of the sample surface is like that found everywhere. Types of spores present would include basidiospores (mushroom spores), myxomycetes (slime molds), plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Many of these spore types would not be found growing indoors on building materials since many plant pathogens require living plants for growth, and mushrooms require compost, leaf duff of various types, or associations with roots of certain trees, etc. Due to these factors, when a mix of spores seen include these types as well as pollen, the rational source is the outside air, rather than indoor mold growth. The numbers of miscellaneous spores seen are graded and described as shown below as none, very few, few, variety, and wide variety.

None	Very Few	Few	Variety	Wide Variety
No spores detected	Very few spores detected	A few spores detected	Many spores containing a variety of different genera detected	Many spores containing a wide variety of different genera detected