

Appendix B

- Indoor Air Quality (IAQ) Testing and Reports
 - The H.L. Turner Group Inc.
Review of IAQ Reports
 - Desmarais Environmental Reports
 - The Scott Lawson Group Reports

TURNER
GROUP

TURNER BUILDING SCIENCE & DESIGN, LLC

P.O. BOX 1365, 75 SOUTH STREET, LYNDONVILLE, VERMONT 05851-1365 TEL. (802) 626-8233

www.hltturner.com

www.turnerbuildingscience.com

December 21, 2010

Town of Barrington
Selectmen Offices
41 Province Lane
Barrington, NH 03825

SUBJECT: Review of Microbial Test Results of Sampling Completed by Others
and Recommendations for Improvements of Existing Facility

Ladies and Gentlemen:

In accordance with your request, we are providing the following review of air quality reports completed by others, and our recommendations for improvement of the existing facility with respect to maintaining acceptable indoor air quality. Our recommendations are based on our visual observations made at the site and analysis of provided reports. We did not conduct interviews with occupants to ascertain occupant concerns, nor did we collect building operation or maintenance history.

The enclosed report is of a technical nature; therefore, the reader will need to have technical knowledge of the facility to properly evaluate the recommendations made herein.

Turner Building Science & Design, LLC (TBS) has enjoyed the opportunity to serve as professional consultants to the Selectmen of the Town of Barrington. Please contact me if you have any questions or need further clarification of any items within this report. You can reach me at our Vermont office at (802) 626-8233 or Mr. William Turner in our Harrison, Maine office at (207) 583-4571, ext 11.

Sincerely,

TURNER BUILDING SCIENCE & DESIGN, LLC



Frederick T. McKnight
Senior Vice President, P.E.



William A. Turner, P.E.
President/CEO

FTM/sai

Enclosures

MECHANICAL ENGINEERS • BUILDING SCIENTISTS • IAQ CONSULTANTS

REVIEW OF INDOOR AIR QUALITY REPORTS

Based on information collected while on-site and on air quality reports of microbial sampling work completed by others, we feel that the building can be occupied if a number of conditions are met. These conditions include improving the building water tightness by repairing window openings, roof leaks, piping leaks, and providing improved thermal barriers on walls to limit condensation, as well as replacement of windows to limit condensation.

We have reviewed reports from Desmarais Environmental and Scott Lawson Group that were made available to us concerning possible mold growth within this building. The reports and letters include, in chronological order:

April 9, 2010: IAQ Investigation from Desmarais Environmental
June 24, 2010: Draft Indoor Air Quality Survey from Scott Lawson Group
July 20, 2010: Indoor Air Quality Survey Follow-Up from Scott Lawson Group
September 16, 2010: Indoor Air Quality Survey from Scott Lawson Group
August 13, 2010: Letter from Desmarais Environmental

Our review of the provided reports indicates that both testing firms agree that the indoor air levels are low for mold spores.

They both found mold spores within the indoor air, but at levels that were lower than corresponding outdoor air samples that were collected at the time the indoor samples were collected. Generally, spore count totals found indoors that are lower counts than the number of spores found outdoors do not indicate amplified reservoirs within the indoor spaces. Additionally, lower indoor counts suggest that there are active pathways connecting some hidden source to the indoor air, at least during the time of sampling. Lower spore counts indoors are accepted as normal dispersion of spores from the outside to the inside through normal air movement through the building via openings in the building enclosures. These openings include doors, windows, and louvers. Mold may also be carried into the indoor space by people entering the space from the outdoors and the normal operation of a buildings ventilation system, as well as from infiltration air that is sucked into the building through unintended openings (i.e. cracks in the building enclosure). However, it should be made clear that the types of tests employed are susceptible to false negatives. Additionally, the air sampling findings in the consultant's reports apply only for the time period covered by the sampling.

1. Both Testing Firms Verify that Mold was Found in the Wall Cavities

It is normal to find mold spores within building wall cavities. The reported counts of mold spores found on the samplers from wall cavity sampling are also typical of what might be found in a wall cavity when there is no visible mold



growth within the occupied space. The unusual part about the reported wall cavity sampling is the report of *Stachybotrys* identified in the Desmarais Environmental report. The sample was collected from under a window in the Finance Office (actual location within the building is not known).

2. Desmarais Environmental Raises Concerns About Mycotoxins

Mycotoxins produced by *Stachybotrys* were raised as a concern; however, Mycotoxins would require a transport mechanism and pathway from the sample location, reportedly a CMU wall under a window. The sampling to date suggests that spores from known sources in wall cavities did not show-up in quantities greater than outdoor levels, indicating an absence of transport mechanisms. It is possible that the known sources could adversely affect the space if the weather conditions differ from those at the time of sampling. Some of the different weather conditions that may allow spores to migrate into the occupied space include cool outdoor temperatures and windy conditions. These conditions are more likely to exist from late fall through early spring.

3. Neither Testing Firm Reported Visible Mold

We observed mold on some window sashes in the lower level of the 1960's building. In the small office in the corner labeled as "Office 2" mold appeared on the painted wood finish of the window. The source of moisture was likely condensation that formed on the window glass and drained down to the sash. The observed mold was a small area. The office was empty of furnishings and was not inhabited at the time of our observation. Neither firm reported finding visible mold within the building. This observed mold may be more recent than the dates of the work completed by the consultants whose reports were provided to us.

The sampling and provided reports do not provide sufficient data or interpretation to suggest that the spaces may be harboring amplified mold reservoirs and that these reservoirs are feeding contaminants to the air spaces of the occupied spaces of this building. Mold at the levels reported will normally be found in the air of occupied spaces of buildings and will also normally be found in wall cavities. The species *Stachybotrys* is also commonly found on damp or wet building surfaces. It especially favors cellulose-based products (i.e. paper and wood to a degree). However, lignin is also present in wood and makes wood a less favorable food source for *Stachybotrys*.

4. Neither Testing Firm Explored Other Possible Locations

Other possible locations where mold may grow were not reported observed. These locations include spaces above the ceilings, especially near roof leaks, carpeting covering slab-on-grade floors, carpeting near sources of moisture such



as roof leaks, and other infrequent sources of water (spills, etc.). However, based on the current rounds of air sampling, none of these additional sources were emitting contaminants into the occupied air space at the time the air samples were collected.

RECOMMENDATIONS

Recommendation #1: Remediate Stachybotrys Reservoir

Based on the data presented in the reports from Desmarais Environmental and from Scott Lawson Group we recommend the reported Stachybotrys sampled site be located precisely, and a remediation protocol be devised and implemented as soon as possible. In addition, the mold observed on the window sash in Office 2 should be removed. The amount observed is small and therefore, according to ACGIH procedures outlined in their publication *Bioaerosols Assessment and Control* can be removed by cleaning staff using hot soapy water and a damp cloth.

Recommendation #2: Improve Control of Sources of Moisture

We observed a number of moisture sources that could at times adversely affect the indoor air quality by providing moisture inside the building that may promote the growth of mold periodically. The sources include roof leaks, possible water intrusion through window openings, possible flooding from surface runoff, water from condensation forming on cool ground contact, non-insulated walls, condensation from water vapor near cold window glass, possible piping leaks, and water entering the subgrade areas of the building through abandoned or unsealed penetrations through the foundations walls. In addition, we also observed works in progress that were intended to address the water intrusions from surface runoff by regrading the site around the parking lot side of the building.

In brief, these repairs to the building enclosures will require repairs to the roof, patching, and resealing seams. Window leak openings will need flashing repairs and new, more energy efficient windows will be required to limit condensation accumulations on the window glass, and subsequently onto the wooden window sashes and frame. Additional insulation will be required on the ground contact walls to limit condensation on these surfaces.



DESMARAIS ENVIRONMENTAL, INC.

62 Al Wood Drive Barrington, NH 03825
603/664/5500 603/664/5600 fax

April 9, 2010

Ms. Carol Reilly
Town of Barrington
41 Province Lane
Barrington, NH 03825

Re: IAQ Investigation - Barrington Town Hall

Dear Ms. Reilly,

As you are aware, we are currently conducting an Indoor Air Quality investigation at the Barrington Town Hall to determine the cause of building-related health complaints. We have some preliminary data as part of our investigation that we feel should be brought to your attention as soon as possible.

Due to the types of health complaints reported, the principal focus of our investigation has been to identify and locate moisture intrusion into the building envelope which could result in a mold or bacterial amplification. To date we have not visually located any biological amplification but these may be hidden in or around the windows or adjacent walls.

Water from the roof is collecting on the north side of the building and is trapped by the building's topography; this eventually seeps through the building foundation or enters through several doors and windows located at ground level. The services of a civil engineer should be engaged to properly design a drain system to channel moisture away from the building.

The second main source of moisture is around the window frames throughout the building. Elevated moisture levels were detected with moisture meters on interior surfaces of most windows tested. The aluminum trim of one window was lifted for inspection and an interior portion of the window was removed without causing any damage. This inspection was very limited in exposing the window substructure and results were inconclusive.

On April 2 we collected air samples from four locations within the building utilizing several methods of testing for biologicals. Two of three sampling methods were tests for viable (live) forms of fungus and bacteria; those results are still pending as they require a minimum of 10 days to incubate. The third type of sampling utilizes an Alergenco-D spore trap, which collects both live and dead fungal spores and identifies the type of fungus by morphology. Results from interior rooms tested indicate acceptable levels of spores when compared to outdoor levels. However, a sample that was collected from within the Concrete Masonry Unit (CMU) wall beneath the window in the finance area indicated that there is a significant amplification of fungus inside the wall cavity itself.

The predominant fungus identified inside the wall cavity is *Stachybotrys*. *Stachybotrys* produces several forms of mycotoxins which could cause the building-related health complaints experienced at the Town Hall Building. The spores themselves are often not found in room air samples; however, the resulting mycotoxins will disperse throughout the building. Typical investigations uncover it by wall cavity testing where the spores are concentrated or during a physical investigation of the building. In this case, the amplification inside masonry makes it difficult to find. The presence of *Stachybotrys* in the building is a sufficient indicator that mycotoxins are present.

At this point in time we have a single sample indicating a potential major building-related problem around the windows. The presence of moisture detected at most of the windows suggests a possible failure of the window system or building envelope. Given that complaints are reported throughout the building, it is reasonable to believe that the problem is building-wide at varying degrees depending on moisture intrusion into a particular window.

Until the full extent of the problem can be ascertained, it is our recommendation that occupants who are experiencing building-related complaints be moved or allowed to work temporarily from another location outside this building. Any children's activities should also be moved to another location until a full assessment of the risks can be determined or the problems remediated.

Exposure to the fungus and toxins is typically self-limiting in that once removed from the problem environment the symptoms abate. Continued exposure typically results in sensitization and increasing or more severe symptoms with increased exposure.

Recommended Action Plan

I understand that the drainage issue is currently being addressed and that track should continue and work be completed as soon as possible. Critical to the success of any mitigation is eliminating all sources of moisture intrusion into the building envelope.

We are investigating window failure as the most likely culprit. Other possible causes are faulty masonry wall design or deterioration of the exterior brick and mortar.

To that end we suggest the following actions:

- Interpret additional test results as they become available.
- Sample other CMU wall cavities beneath windows similar to what was done at the finance window to determine if we have similar conditions throughout the building with regard to possible window failures.
- Sample CMU wall cavities in areas that would not be influenced by possible window failures to ascertain if the CMU wall itself may be the source.
- If the additional wall cavity testing indicates that only window-influenced samples indicate biological amplifications, then the next step would be to remove a window down to the masonry for further investigation. This work should be accomplished by a trained mold remediation contractor.

4/13/10

I anticipate that the actions above will provide us with the data to move forward on a remediation plan for the entire building or indicate where we need additional discovery.

I would be happy to meet with building occupants and Selectmen to provide any background information or address concerns they may have.

Please feel free to call if you have any questions.

Sincerely,

Ray Desmarais, CIH, CSP

4/13/10



EMLab P&K

Report for:

Mr. Tim Hunt
Desmarais Environmental Inc.
62 Alwood Dr
Barrington, NH 03825

Regarding: Project: Barrington Town Hall; 41 Province Lane Barrington, NH
EML ID: 644068

Approved by:

Dates of Analysis:
Spore trap analysis: 04-07-2010



Lab Director
Eric Ciotti

Service SOPs: Spore trap analysis (I100000)

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. 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 corrections of results is not a standard practice. The results relate only to the items tested.

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Document Number: 200091 - Revision Number: 5

P&K Microbiology Services, Inc.

EMLab ID: 644068, Page 1 of 3

Client: Desmarais Environmental Inc.
C/O: Mr. Tim Hunt
Re: Barrington Town Hall; 41 Province Lane
Barrington, NH

Date of Sampling: 04-02-2010
Date of Receipt: 04-03-2010
Date of Report: 04-07-2010

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Lab ID-Version† Location	Air vol. (L)	Background Debris	Counts of Fungal Structures	Fungal Structures/m3	Presumptive Fungal ID (raw counts*)	Percentage
2852877-1 637132 Finance Office	75	2+	16 1	210 13 § Total: 230	Cladosporium (4) Smuts, Periconia, Myxomycetes (1)	94 6
Comments:						
2852878-1 637128 Tax Collector	75	1+	4 4	53 53 § Total: 110	Basidiospores (1) Cladosporium (1)	50 50
Comments:						
2852879-1 637133 Community Room	75	1+	4 3 1 2 1	53 40 13 27 § Total: 130 13	Basidiospores (1) Eurotium (3) Pithomyces (1) Smuts, Periconia, Myxomycetes (2) Hyphal fragments (1)	40 30 10 20 N/A
Comments:						
2852880-1 637126 Discovery Center	75	2+	8 1 1	110 13 13 § Total: 130	Cladosporium (2) Epicoccum (1) Smuts, Periconia, Myxomycetes (1)	80 10 10
Comments:						

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. The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m3) is the product of the Limit of Detection and 1000 divided by the sample volume.

*All AIHA accredited laboratories are required to provide raw counts of fungal structures in spore trap reports. These counts are defined by AIHA as "Actual count without extrapolation or calculation". The number in parentheses next to the fungal type represents the exact number (or raw count) of fungal structures observed.

† 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 has been rounded to two significant figures to reflect analytical precision.

Client: Desmarais Environmental Inc.
C/O: Mr. Tim Hunt
Re: Barrington Town Hall; 41 Province Lane
Barrington, NH

Date of Sampling: 04-02-2010
Date of Receipt: 04-03-2010
Date of Report: 04-07-2010

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Lab ID-Version† Location	Air vol. (L)	Background Debris	Counts of Fungal Structures	Fungal Structures/m3	Presumptive Fungal ID (raw counts*)	Percentage
2852881-1 637124 Outside	75	2+	1 8 280 1 52 1 2 4 46	13 110 3,700 13 690 13 27 § Total: 4,600 53 610	Alternaria (1) Ascospores (2) Basidiospores (70) Botrytis (1) Cladosporium (13) Epicoccum (1) Smuts, Periconia, Myxomycetes (2) Hyphal fragments (4) Pollen (46)	< 1 2 81 < 1 15 < 1 1 N/A N/A
Comments:						
2852882-1 637158 Finance Office - Wall Cavity Beneath Window	15	> 4+	1 1 10	67 67 670 § Total: 800	Aureobasidium (1) Smuts, Periconia, Myxomycetes (1) Stachybotrys (10)	8 8 83
Comments: Visibility was obscured by the presence of bubbles and debris in the grease itself. Counts should be regarded as minimums and may be higher than reported.						

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 sample volumes when evaluating dust levels. The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m³) is the product of the Limit of Detection and 1000 divided by the sample volume.

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

4/13/10



EMLab P&K

Report for:

Mr. Tim Hunt
Desmarais Environmental Inc.
62 Alwood Dr
Barrington, NH 03825

Regarding: Project: Barrington Town Hall; 41 Province Lane, Barrington NH
EML ID: 646530

Approved by:

Dates of Analysis:
Spore trap analysis: 04-12-2010

A handwritten signature in black ink, appearing to read 'Eric Clotti', written over a horizontal line.

Lab Director
Eric Clotti

Service SOPs: Spore trap analysis (1100000)

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Document Number: 200091 - Revision Number: 5

P&K Microbiology Services, Inc.

EMLab ID: 646530, Page 1 of 3

Client: Desmarais Environmental Inc.
C/O: Mr. Tim Hunt
Re: Barrington Town Hall; 41 Province Lane,
Barrington NH

Date of Sampling: 04-09-2010
Date of Receipt: 04-10-2010
Date of Report: 04-12-2010

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Lab ID-Version† Location	Air vol. (L)	Background Debris	Counts of Fungal Structures	Fungal Structures/m3	Presumptive Fungal ID (raw counts*)	Percentage
2864752-1 637138 Discovery Center Right - Wall Cavity	15	4+	48	3,200 § Total: 3,200	Penicillium/Aspergillus types (12)	100
Comments:						
2864753-1 609070 Building Department - Wall Cavity	15	4+	4 12	270 800 § Total: 1,100	Cladosporium (1) Penicillium/Aspergillus types (3)	25 75
Comments:						
2864754-1 637151 Discovery Center Left - Wall Cavity	15	4+	4 2	270 § Total: 270 130	Penicillium/Aspergillus types (1) Pollen (2)	100 N/A
Comments: Visibility was obscured by the presence of bubbles and debris in the grease itself. Counts should be regarded as minimums and may be higher than reported.						
2864755-1 637146 Community Room - Wall Cavity	15	3+	8 288 1	530 19,000 § Total: 20,000 67	Cladosporium (2) Penicillium/Aspergillus types (72) Hyphal fragments (1)	3 97 N/A
Comments:						
2864756-1 637130 Selectman's Office - Wall Cavity	15	3+	152 1 12	10,000 67 § Total: 10,000 800	Penicillium/Aspergillus types (38) Smuts, Periconia, Myxomycetes (1) Hyphal fragments (12)	99 1 N/A
Comments:						

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. The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m3) is the product of the Limit of Detection and 1000 divided by the sample volume.

*All AIHA accredited laboratories are required to provide raw counts of fungal structures in spore trap reports. These counts are defined by AIHA as "Actual count without extrapolation or calculation". The number in parentheses next to the fungal type represents the exact number (or raw count) of fungal structures observed.

† 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 has been rounded to two significant figures to reflect analytical precision.

Client: Desmarais Environmental Inc.
C/O: Mr. Tim Hunt
Re: Barrington Town Hall; 41 Province Lane,
Barrington NH

Date of Sampling: 04-09-2010
Date of Receipt: 04-10-2010
Date of Report: 04-12-2010

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Lab ID-Version† Location	Air vol. (L)	Background Debris	Counts of Fungal Structures	Fungal Structures/m3	Presumptive Fungal ID (raw counts*)	Percentage
2864757-1 637145 Finance Office (Window Wall) - Wall Cavity	15	3+	4 1 4 16	270 67 270 1,100 § Total: 1,700	Ascospores (1) Chaetomium (1) Cladosporium (1) Penicillium/Aspergillus types (4)	16 4 16 64
Comments:						
2864758-1 637142 Finance Office (Non Window Wall) - Wall Cavity	15	4+	32	2,100 § Total: 2,100	Penicillium/Aspergillus types (8)	100
Comments:						
2864759-1 637131 Tax Collector's Office - Wall Cavity	15	3+	8 20 1	530 1,300 § Total: 1,900 67	Cladosporium (2) Penicillium/Aspergillus types (5) Hyphal fragments (1)	29 71 N/A
Comments:						
2864760-1 637122 Student Service's - Wall Cavity	15	3+	24	1,600 § Total: 1,600	Penicillium/Aspergillus types (6)	100
Comments:						

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*All AIHA accredited laboratories are required to provide raw counts of fungal structures in spore trap reports. These counts are defined by AIHA as "Actual count without extrapolation or calculation". The number in parentheses next to the fungal type represents the exact number (or raw count) of fungal structures observed.

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

4/13/10



EMLab P&K

Report for:

Mr. Tim Hunt
Desmarais Environmental Inc.
62 Alwood Dr
Barrington, NH 03825

Regarding: Project: Barrington Town Hall; 41 Province Lane Barrington, NH
EML ID: 644067

Approved by:

Dates of Analysis:
Culturable air fungi full (Pen&Clad genus): 04-12-2010



Lab Director
Eric Ciotti

Service SOPs: Culturable air fungi full (Pen&Clad genus) (I100002)

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Document Number: 200091 - Revision Number: 5

P&K Microbiology Services, Inc.

EMLab ID: 644067, Page 1 of 2

Client: Desmarais Environmental Inc.
 C/O: Mr. Tim Hunt
 Re: Barrington Town Hall; 41 Province Lane
 Barrington, NH

Date of Sampling: 04-02-2010
 Date of Receipt: 04-03-2010
 Date of Report: 04-12-2010

CULTURABLE AIR FUNGI REPORT

Lab ID-Version‡ Location	Air vol. (L)	Medium	Dilution Factor	Fungal ID	Colony Counts	CFU/m3	%
2852870-1 M1 Finance Office	84.9	MEA	N/A	Aspergillus versicolor	1	12	4
				Basidiomycetes	4	47	15
				Cladosporium	17	200	65
				Penicillium	2	24	8
				yeasts	2	24	8
				§ Total: 310			
Comments:							
2852871-1 M2 Tax Collector	84.9	MEA	N/A	Aspergillus versicolor	1	12	9
				Basidiomycetes	5	59	45
				Cladosporium	4	47	36
				Penicillium	1	12	9
				§ Total: 130			
Comments:							
2852872-1 M3 Community Room	84.9	MEA	N/A	Aspergillus sydowii	1	12	5
				Aspergillus versicolor	2	24	9
				Basidiomycetes	5	59	23
				Cladosporium	8	94	36
				Penicillium	6	71	27
				§ Total: 260			
Comments:							
2852873-1 M4 Discovery Center	84.9	MEA	N/A	Aspergillus versicolor	2	24	13
				Basidiomycetes	8	94	50
				Cladosporium	5	59	31
				Penicillium	1	12	6
				§ Total: 190			
Comments:							
2852874-1 M5 Outside	84.9	MEA	N/A	Basidiomycetes	10	120	30
				Cladosporium	20	250	64
				Non-sporulating fungi	2	24	6
				§ Total: 390			
Comments:							

The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m3) is the product of the Limit of Detection and 1000 divided by the sample volume.

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

4/13/10



EMLab P&K

Report for:

Mr. Tim Hunt
Desmarais Environmental Inc.
62 Alwood Dr
Barrington, NH 03825

Regarding: Project: Barrington Town Hall; 41 Province Lane Barrington, NH
EML ID: 644066

Approved by:

Dates of Analysis:
Culturable air bact gram stain and counts: 04-12-2010

Lab Director
Eric Ciotti

Service SOPs: Culturable air bact gram stain and counts (I100015)

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. 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 corrections of results is not a standard practice. The results relate only to the items tested.

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.

Document Number: 200091 - Revision Number: 5

P&K Microbiology Services, Inc.

EMLab ID: 644066, Page 1 of 2

Client: Desmarais Environmental Inc.
C/O: Mr. Tim Hunt
Re: Barrington Town Hall; 41 Province Lane
Barrington, NH

Date of Sampling: 04-02-2010
Date of Receipt: 04-03-2010
Date of Report: 04-12-2010

CULTURABLE AIR BACTERIA REPORT

Location:	B1: Finance Office		B2: Tax Collector		B3: Community Room		B4: Discovery Center		B5: Outside	
Comments (see below)	None		None		None		None		None	
Lab ID-Version†:	2852860-1		2852861-1		2852862-1		2852863-1		2852864-1	
	raw ct.	cfu*/m3	raw ct.	cfu*/m3	raw ct.	cfu*/m3	raw ct.	cfu*/m3	raw ct.	cfu*/m3
Actinomycetes	ND	< 12	ND	< 12	ND	< 12	ND	< 12	ND	< 12
Bacillus	ND	< 12	1	12	2	24	2	24	ND	< 12
Gram negative rods	2	24	1	12	6	71	6	71	ND	< 12
Gram positive cocci	11	130	27	330	41	520	12	140	ND	< 12
Gram positive rods	ND	< 12	ND	< 12	ND	< 12	ND	< 12	ND	< 12
Positive Hole	342		342		342		342		342	
Sample volume (liters)	84.9		84.9		84.9		84.9		84.9	
§ TOTAL CFU*/M3		150		350		610		240		< 12

* cfu = colony forming units

Positive hole correction chart used for all calculations

Comments:

The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m3) is the product of the Limit of Detection and 1000 divided by the sample volume.

† 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 CFU/m3 has been rounded to two significant figures to reflect analytical precision.

P&K Microbiology Services, Inc.

EMLab ID: 644066, Page 2 of 2

Stachybotrys sp.

Mitosporic fungus. Hyphomycetes.

Distribution

Ubiquitous;
cosmopolitan.
Approx. 15 species.

Where Found

Soil, decaying plant
substrates,
decomposing cellulose
(hay, straw), leaf litter,
and seeds. Growth not
influenced by soil pH
or copper; growth
enhanced by
manure./span>

Spore Dispersal

Wet spore.
Insects, water splash.
Wind when dried out.

Allergenic

Not well studied.
Type I allergies reported.

**Pathogenic Opportunities
or Pathogen**

No reports of human
infection. (No species
grow well at 37°C.)

Pathogenic To the Food Animal

Macrocyclic trichothecenes:
verrucarin J, roridin E, satratoxin F,
G & H, sporidesmin G,
trichoverrol; cyclosporins,
stachybotryolactone.
Stachybotrys mycotoxicosis:
human toxicosis has been
described; may be characterized by
dermatitis, cough, rhinitis, itching
or burning sensation in mouth,
throat, nasal passages and eyes.
The best described toxicoses are
from domestic animals that have
eaten contaminated hay and straw
or inhaled infected material from
contaminated bedding.

Growth Indicators

Commonly found indoors on wet
materials containing cellulose,
such as wallboard, jute, wicker,
straw baskets, and other paper
materials. (See "Characteristics:
Growth/Culture").
Aw=0.94

Industrial Use

Not known.

Human Hazard

Many human reports of
Stachybotrys toxicosis are
anecdotal. Stachybotrys
mycotoxicosis is currently the
subject of toxin research.

**Characteristics
Growth/Culture**

**Notes on Some Trap
Recognition**

Notes on Identification

Grows well on general fungal media. *Stachybotrys* is slow growing as compared to *Penicillium* and other common mold genera, and may not compete well in the presence of other fungi. However, when water availability is high for prolonged periods on environmental material, *Stachybotrys* may gradually become the predominating mold, especially on cellulose containing materials.

Spores of the species *S. chartarum* are distinctive, and not easily confused with other genera. Carbon fragments which may be oval and of similar size may sometimes be confused with *S. chartarum*. *Memnoniella* and *Gliomastix* produce spores with similar gray black pigment. Note: Spore trap samples are more likely to demonstrate the presence of *Stachybotrys* than culturable samples (Andersen).

Distinctive, readily identifiable on tape lift samples. Direct microscopic observation of samples is often necessary as *Stachybotrys* may be missed if only culture methods are used.

Aspergillus sp.

Mitosporic fungus. Hyphomycetes. Teleomorphs (sexual state): Eurotium, Neosartorya, Emericella (Ascomycetes).

General Ecology

Ubiquitous; cosmopolitan. Approx. 200 species.

Usual Habitat

Soil, decaying plant debris, compost piles, stored grain.

Means of Dispersal

Dry spore. Wind.

Aspergillus

Common. Type I allergies (hay fever, asthma). Type III hypersensitivity pneumonitis: Humidifier lung, Malt worker's lung, Compost lung, Wood trimmer's disease, Straw hypersensitivity, Farmer's lung, Oat grain hypersensitivity, others. Other: A. fumigatus: allergic bronchopulmonary aspergillosis (ABPA), allergic fungal sinusitis.

Human Health Considerations

Respiratory, invasive, cutaneous, ear, and corneal disease. Severe, invasive disease is usually associated with immunosuppressed hosts. Many species grow at 37°C (body temperature). A. fumigatus: fungus ball and invasive disease. A. flavus: nasal sinus lesions, invasive disease. A. niger: "Swimmer's ear," and invasive disease.

Important Toxins Produced

Partial list: A. flavus: aflatoxin B1 & B2, cyclopiazonic acid, kojic acid. A. fumigatus: ergot alkaloids, fumigaclavines, gliotoxin, fumigatoxin, fumigillin, fumitremorgens, helvolic acid, tryptoquivaline tremorgens, verruculogen. A. niger: malformin C, oxalic acid. A. ustus: austocystins. A. versicolor: aspercolorin, averufin, cyclopiazonic acid, sterigmatocystin, versicolorin.

Food Spoilage

On a wide range of substrates. Water requirements range widely (dependent on species). Aw=0.71-0.94 (minimum for various species).

Industrial Uses

Many, including practical applications in food production. For example, A. oryzae is used to ferment soybeans to soy sauce. A. terreus produces mevinoлин which is able to reduce blood cholesterol; A. niger is used in the bread and beer making industries (enzyme production) and also is able to decompose plastic. A. niger and A. ochraceus are used in cortisone production.

Other Comments

Aspergillus is one of the most common fungal genera, worldwide, and Aspergillus fumigatus is one of the most common species found.

Characteristics of Growth Culture

Notes on Spore Trap Recognition

Notes on Laboratory Recognition

Aspergillus species grow well on general fungal media. Some xerophilic species prefer dryer conditions.

Free spores are indistinguishable from Penicillium, and other genera with small round to oval colorless spores. Penicillium/Aspergillus spores may have remnants of cell wall connections.

If sporulating structures are present, Aspergillus is readily identifiable on tape samples. Old growth or samples with very large numbers of spores may not contain structures necessary for identification and are reported as "spores typical of Penicillium/Aspergillus."



Penicillium sp.

Mitosporic fungus. Hyphomycetes. Teleomorphs (sexual state): Eupenicillium, Talaromyces (Ascomycetes).

General Description	Natural Habitat	Spore Characteristics
Ubiquitous; cosmopolitan. Approx. 200 species.	Soil, decaying plant debris, compost piles, fruit rot. <i>P. glabrum</i> has been isolated from diesel fuel./span>	Dry spore. Wind, insects (fungus serves as a food source for storage mites).
Allergens	Pathogenicity to Humans	Toxicity to Humans
Common. Type I allergies (hay fever, asthma). Type III hypersensitivity pneumonitis: Cheese washer's lung, Woodman's lung, Moldy wall hypersensitivity.	One species of <i>Penicillium</i> species, <i>P. marneffeii</i> , is a cause of human infection. It has not yet been found in the United States.	Various toxins by different species: penicillic acid, peptide nephrotoxin, viomellein, xanthomegin, xanthocillin X, mycophenolic acid, roquefortine C & D, citrinin, penicillin, cyclopiazonic acid, isofumigaclavine A, penitrem A, decumbin, patulin citreoviridin, griseofulvin, verruculogen, ochratoxin, chrysogine, and meleagrin.
Substrate Specificity	Industrial Uses	Other Applications
Widespread. Commonly found in house dust. Grows in water damaged buildings on wallpaper, wallpaper glue, decaying fabrics, moist chipboards, and behind paint. Also found in blue rot of apples, dried foodstuffs, cheeses, fresh herbs, spices, dry cereals, nuts, onions, and oranges. Aw=0.78-0.86 (minimum for various species).	Roquefort and camembert cheese, salami-sausages starter culture; anti-bacterial antimicrobial penicillin, and anti-fungal antimicrobial griseofulvin.	Penicillium is one of the most common fungal genera, worldwide. Microbial volatile organic compounds (MVOCs) produced: Penicillium commune produces 2-methyl-isoborneol, a heavy musty odor.
Cultivation/ Growth/ Media	Notes on Spore Train Recognition	Notes on Tape Lift Recognition
Grows readily on general fungal media. Colonies are	Free spores are indistinguishable from	Penicillium is readily identifiable on tape samples if sporulating

usually shades of blue,
green, and white.

Aspergillus and other
genera with small round to
oval colorless or slightly
pigmented spores.
Penicillium/Aspergillus
spores may have remnants
of cell wall connections.

structures are present. Old growth or
samples with high numbers of
spores may not exhibit sporulation.
structures necessary for
identification and are therefore
reported as "spores typical of
Penicillium/Aspergillus."

SELECTMEN' S MEETING
WEDNESDAY, APRIL 14, 2010
PUBLIC SAFETY BUILDING
Meeting Agenda

1. Opening remarks
2. Overview of Air Quality Issue
3. What does this mean for employees?
4. What's next?
5. Questions?

1. Opening remarks

Good Morning, we wish to thank you for attending this meeting with us. We would like to convey to you that your health and safety is of utmost concern to us.

2. Overview of Air Quality Issue

Several issues have transpired that have led us to question if the air quality at the town offices has deteriorated. We recognize that numerous employees have expressed concern over health issues they have experienced that may be building related. As such, the Board of Selectmen obtained the services of Desmarais Environmental to conduct several types of indoor air quality testing. These tests included mold spore collection, mold and bacteria cultures and wall cavity tests throughout the building. The results of this testing indicate that an amplification of mold is present within the building. Elevated levels of Aspergillus, Penicillium and Stachybotrys molds have been verified through an independent lab used by Desmarais Environmental.

3. What does this mean for employees?

Employees need to be aware that deterioration of the indoor air quality can make you feel ill and produce a number of symptoms including tiredness, more pronounced allergic or asthmatic responses, itchy, watery eyes, headaches, and muscle aches to name a few. Employees need to understand that there can be associated health risks as a result of this type of poor indoor air quality.

Employees need to communicate in writing to Carolyn Berryment or Carol Reilly any health issues or concerns you may have and if you wish to voluntarily be located to an alternate work

space. Every effort is being made to insure that every employee has a safe work environment in which to perform their jobs.

4. What's next?

The Board of Selectmen will be consulting with Ray Desmarais and our Property Liability Trust Company to determine the extent of remediation or corrections needed to improve the indoor air quality. This may mean that a temporary location will need to be provided for all occupants of Town Offices during the remediation or correction efforts. As information becomes available, it will be communicated to the employees. In the meantime, please do not hesitate to contact us or Carol with questions or comments.

5. Questions?

MEETING NOTES

2007

October 2007						
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November 2007						
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4/14/2010

Employee Meeting

Dave review - opening remarks

several issues have transpired
communicate in writing to Carolyn or Carol

temporary location

Peripro sampling duplicated

Henry - release to be in building
1991 documents relating to air quality
issues.

led - common in brick/block buildings? Ray - no
no vapor barrier, no weep holes

at the visual inspection by Ray

Paul - 2 yrs ago AC issue - Kim asked about
ceiling tiles.

Brick veneer acts as a weep to bring in water.

2008

January 2008						
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March 2008						
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April 2008						
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May 2008						
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June 2008						
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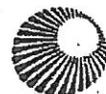
August 2008						
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September 2008						
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October 2008						
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November 2008						
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December 2008						
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30	31					



Public Service
of New Hampshire

DESMARAIS ENVIRONMENTAL, INC.

62 Al Wood Drive Barrington, NH 03825
(603) 664-5500

August 13, 2010

Town of Barrington Selectman
41 Province Lane
Barrington, NH 03825

Re: Scott Lawson Group Opinion Dated July 20, 2010

I received a copy of the Scott Lawson Group, Ltd. opinion dated July 20, 2010 and have the following concerns with regard to that opinion that the Selectman should consider prior to acting.

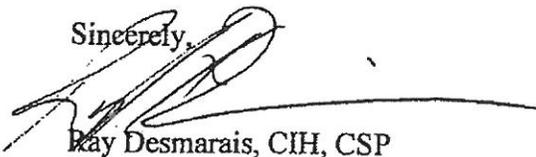
The opinion is very carefully worded to base their opinion on non-cavity air testing conducted by SLG and Desmarais Environmental. They concur that wall cavities are experiencing a microbial amplification and that remediation would be difficult and impossible to completely remediate due to inaccessibility.

If our opinion to vacate was based solely on air testing non-cavities we may have made the same conclusion but what the SGL opinion failed to consider is the following:

- Previous occupants of the Discovery Center were experiencing issues in the space following repeated cleaning similar to what SGL is recommending in order to occupy the space now.
- They failed to address the level of symptoms being experienced by building staff, visitors and customers within the building at the measured levels they state are safe.
- They did not address mycotoxins likely emanating from the wall with an ongoing amplification that cannot be remediated.
- If the walls cannot be completely remediated I cannot foresee a scenario where the building is safe for occupancy at this time.

I suggest the Selectman reconsider the decision to move offices to the Discovery area as I believe it would not be prudent at this time.

Sincerely,



Ray Desmarais, CIH, CSP

DRAFT

June 24, 2010

Mr. Paul Sanders
Town of Barrington
41 Province Lane
Barrington, New Hampshire 03825

Re: Indoor Air Quality Survey at the Barrington Town Hall
SLGL File Number 91270

Dear Mr. Sanders:

On June 8, 2010 *The Scott Lawson Group, Ltd. (SLGL)* conducted an Indoor Air Quality (IAQ) Survey at the Barrington Town Hall located at 41 Province Lane in Barrington, New Hampshire. The building is a two-story brick building. The objective of the Survey was to evaluate the current indoor environment and perform a follow-up assessment to an IAQ investigation performed by Desmarais Environmental, Inc. in April and May of 2010. The survey was accomplished by conducting limited interior visual observations of the affected area(s) in the building, collection of samples for airborne Fungi, Culturable Fungi and Bacteria, and the collection of data with a TSI Q-TRAK™.

During the survey, *SLGL* collected: ambient air samples with a BioTest™ Impaction Air Sampler for Fungus and Bacteria, for the evaluation of total colony forming units per cubic meter (CFU/m³). Air samples for Total Spore Counts with Predominant Species Identification was also conducted with a Buck BioAire™ Bioaerosol Sampling Pump. Samples were collected outside the building (for comparison purposes), along with analytical field blanks (for quality control purposes). In addition, direct readings for Carbon Monoxide, Carbon Dioxide, Temperature, and Relative Humidity were collected with the TSI Q-TRAK™. On the day of the survey, there were no visible signs of microbial growth on observed interior surfaces. However, it should be noted that *SLGL* did not perform any destructive investigations of wall cavities areas, other than the small holes drilled for sampling purposes.

DRAFT

All results were compared to one or more of the following: the Occupational Safety and Health Administration's Permissible Exposure Limits (OSHA PEL), the National Institute for Occupational Safety and Health's Recommended Exposure Limits (NIOSH REL), the American Conference of Governmental Industrial Hygienists' Threshold Limit Values (ACGIH TLV), the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), and/or the Environmental Protection Agency (EPA) guidelines or regulations, as applicable. Public health guidelines for exposure to contaminants such as those published by ASHRAE, EPA, and the World Health Organization (WHO), are typically one-tenth of occupational exposure limits, e.g., OSHA, ACGIH, and NIOSH. Public health guidelines or standards include protection for the old, young, pregnant women, and other sensitive population groups

Fungi are typically introduced into a building from the outdoor environment, through a number of sources, including windows, doors, building occupants, and air handling systems. Other events may include leaking roofs or basements, inclement weather, pipe leaks or flooding. Fungus spores are found in ambient air most times of the year, from spring through fall, with numbers declining in the winter months. Fluctuations can occur though, along the coastline or swampy areas, in different regions of the United States and can depend in a large part on the type of weather at the time of sample collection.

Air Samples - Total Spore Counts with Predominant Genus Identification:

SLGL collected Spore Trap samples, plus an outdoor air sample, and a requisite analytical blank for quality control purposes, for the evaluation of total airborne fungal spore concentrations (viable and non-viable, i.e., spores that have the ability to grow and those that do not). Each sample was collected by drawing air through an Air-O-Cell® sampling cassette at a flow rate of approximately fifteen liters per minute (15 lpm), for one (1) to five (5) minutes. Upon the completion of each sample, each cassette was sealed, issued a unique identification number, and its location documented. A summary of the analytical results (see Appendix A) are as follows:

Analysis of the Air-O-Cell cassettes (with count and identification by Predominant Genus) was used to determine total airborne viable and non-viable Fungi spores. All Fungi are considered to be potentially allergenic. (The term "genus" refers to the particular "family" of Fungi or Bacteria, and there are individual species within each genus.)

DRAFT

- Results for the four (4) samples collected indoors in general office areas measured ambient fungal spore concentrations from 107 spores per cubic meter of air (107 Ct/m³), to 3,787 Ct/m³, with the predominant genus of fungus identified as *Basidiospores and Cladosporium*. For comparison, the outdoor sample result had a total spore count of 6,827 Ct/m³, with the predominant genus *Basidiospores*.
- Nine (9) samples were also collected indoors in selected exterior wall cavities, with results ranging from < 267 Ct/m³, to 19,467 Ct/m³, with the predominant genus of fungus identified as *Basidiospores and Aspergillus/Penicillium*-like. It should be noted that only a relatively low concentration of *Aspergillus/Penicillium*-like was found outdoors on the day of the survey, and that high debris loading on these samples may indicate actual spore counts would be higher.

Note: There is no acceptable limit for fungus exposures in non-industrial settings. A general rule of thumb in this industry is to look at a factor of ten (10), i.e., when indoor concentrations are greater than those found outdoors by a factor of 10 or more, indoor amplification is likely. In addition, when one genus of Fungus becomes predominant indoors versus outdoors, amplification is likely. Source: ACGIH - Bioaerosols: Assessment, and Control.

Air Samples - Total fungi with Predominant Genus Identification:

Using a BioTest Impaction air sampler equipped with Rose Bengal Agar strips, four (4) air samples were collected inside the building, with analyses showing airborne Total fungi ranging from sixty-three (63) to two-hundred forty four (244) CFU/m³. The predominant species within the facility by this method of testing was *Cladosporium*. The outside sample had 413 CFU/m³ with *Cladosporium* again as the predominant genus.

Air Samples - Total bacteria with Predominant Genus Identification:

Bacteria commonly found during IAQ surveys may be human-shed (e.g., *Micrococcus* or *Staphylococcus*) or can commonly be associated with stagnant water found in drip pans associated with air handling equipment, or water-damaged building materials. Bacteria are classified by several means, including their reaction to a Gram stain. For the purposes of this report, Bacteria are discussed as "Gram Negative" or "Gram Positive". Gram Negative Bacteria are typically associated with water soaked or damaged building materials, or microbial build-up in locations such as condensate drip pans in air handling systems, sumps, water reservoirs of humidifiers, and other moist areas. Examples of Gram Negative Bacteria include *Pseudomonas* and *Legionella*. Gram-positive Bacteria on the other hand, are typically human-associated, such as *Staphylococcus* and *Streptococcus*; Gram Positive Bacteria are shed into the air with human skin scales and respiratory droplets.

DRAFT

Using a Biotest Impaction air sampler equipped with Tryptic Soy Agar (TSA) strips, four (4) air samples were collected inside the building. Analysis of the TSA strips with count and identification by Predominant Genus has determined that Total airborne Bacteria levels ranged from 31 to 538 CFU/m³. The concentration of airborne Bacteria found outside the facility was 38 CFU/m³. The levels of Bacteria found inside the building are not abnormal when considering the number of occupants. *Bacillus* was identified as predominant in two (2), and Gram Positive in two (2) of the indoor air samples. Gram Positive Bacteria are commonly human associated Bacteria and *Bacillus* are also commonly isolated in interior environments.

Relative humidity:

In an environment in which occupants are engaged in light, primarily sedentary activity (such as a home or office environment), ANSI/ASHRAE standard 55-1992 recommends that RH be controlled to a range of 30% to 60%. These are the upper and lower limits based on considerations of dry skin, eye irritation, respiratory health, microbial growth, and moisture-related phenomena. When RH levels are below 30%, the mucous membranes of the upper respiratory system begin to dry out, possibly rendering nasal passages and the throat, as well as the eyes, more susceptible to irritation and/or infection from indoor air pollutants. RH levels exceeding 60% may cause condensation problems, and as a result, fungal and Fungi infestations are common.

- RH readings indicated that level from within the building ranged from 28.6 to 46.1%, which was just below the recommended comfort guideline of 30%. Exterior humidity levels were observed to be 42.3%.

Temperature:

ANSI/ASHRAE standard 55-1992 recommends an optimum operative temperature of 71 degrees Fahrenheit (71°F) be maintained during the winter months, with a comfort range of 68°F to 75°F. An optimum summer temperature of 76°F is also recommended, with a comfort range of 73°F to 79°F.

Ambient temperature ranged from 68.3 to 75.6°F. Based on these readings, some of the rooms are below the recommended comfort range for this time of year.

DRAFT

Carbon dioxide:

Studies indicate that CO₂ is an excellent surrogate indicator of indoor air quality. Since CO₂ is given off by humans when exhaling, its levels in the air provide a good indication of the quality of air circulation and how effectively the ventilation system, if present, is diluting and removing pollutants from the air. It must be noted that it is (generally) not necessarily the concentration of CO₂ itself that is of concern in this type of setting, but rather it is the levels of CO₂ exceeding 1,000 parts per million (1,000 ppm), which are indicative of inadequate fresh/outdoor air introduction -- or under-ventilation.

Spot readings were collected throughout the building using a TSI Q-Trak IAQ monitor. The results ranged from approximately 397 parts per million (ppm) to 846 ppm. Spot readings indicate that CO₂ should not be of concern at this time.

Carbon monoxide:

CO is not a natural component of indoor air, and is considered an indoor air pollutant. Overexposure to CO can deprive the body of Oxygen-carrying hemoglobin, and cause immediate or chronic health effects to those individuals exposed to elevated levels.

The CO levels were 0 ppm. These levels are below the OSHA PEL of 50 ppm, as well as within the ACGIH TLV of 25 ppm, and the NIOSH REL of 35 ppm. WHO uses 9 ppm as a "concentration of concern" and notes that indoor concentrations of CO should not exceed those found outdoors by more than 3 ppm. CO does not appear to be of concern in regards to indoor air quality.

Discussion

Based on the sampling results summarized above, *SLGL* can confirm the finding from the Desmarais report that mold/fungal amplification is likely occurring inside at least some wall cavity areas of the building. However, since only one of the wall cavity samples had highly elevated levels, *SLGL* cannot confirm the assumed widespread extent of the fungal growth stated in the Desmarais report. In addition, the ambient air samples collected in the building (not in wall cavities) do not indicate a major concern to building occupants at the present time from the likely fungal growth in wall cavity areas. It should be noted this is based only on the single round of sampling performed by *SLGL* during this survey, ambient airborne fungal levels may be higher at other times or under other weather conditions.

DRAFT

Recommendations

1. As stated in the Desmarais report, feasible corrective actions should be taken as soon as possible to prevent additional water intrusion into the building, which would tend to increase fungal growth. Should future water intrusions/leaks occur, it is recommended that water leaks and moisture intrusions be cleaned and dried within 24 - 48 hours. Building materials such as drywall, wood and carpets that remain wet for periods beyond 48 hours are at an increased risk to develop fungal growth, and potentially impact the air quality.
2. *SLGL* recommends that further investigations be performed to determine the extent of the likely microbial growth within the wall cavity areas. These types of destructive or intrusive investigations should be done while the ~~the~~ while the selected area(s) are unoccupied, and if extensive fungal growth is encountered, work should stop until proper containment and remediation methods can be utilized, to prevent potential spread of fungal spores from the areas into the remainder of the building.
3. If further investigations identify fungal contaminated areas, a remediation plan should be developed that addresses cleaning of affected surfaces or disposal of damaged materials, as well as prevention of future growth. Unless extensive fungal contamination is identified, remediation may be able to be done in phases, that would allow for continued use of the facility.

Thank you for utilizing the services of *The Scott Lawson Group, Ltd.* We enjoyed working with you on this project and would welcome the opportunity to work with you on future projects. We trust that you will find everything in order; however, should you have any questions or comments, please contact or me at your earliest convenience.

Sincerely,

The Scott Lawson Group, Ltd.

Stephen L. Zabel, B.S.
Senior Safety & Health Professional

WARRANTY

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Mr. Paul Sanders, Town of Barrington
Re: Indoor Air Quality Survey on 6/8/2010, Page 6

APPENDIX A

ANALYTICAL RESULTS



The Scott Lawson Group, Ltd.

Environmental, Health & Safety Consultants

Post Office Box 3304, Concord, NH 03302-3304
 (603) 228-3610 / (800) 645-7674 / Fax (603) 228-3871

Client: Town of Barrington
 41 Province Lane
 Barrington, NH 03825

SLGL Job #: 91270
 Client Project: Town Hall
 Report Date: June 10, 2010
 Date Sampled: June 8, 2010
 Date Received: June 8, 2010
 Collected by: SLZ
 Analyzed by: NEP

Analytical Results

Lab Number:	282107	282108	282109
Sample Identification:	060810-91270-A22, Area, center of finance office	060810-91270-A23, Area, center of tax collector office	060810-91270-A24, Area, basement, center of community room
Analysis:	Bacteria Enumeration & Identification - Culturable	Bacteria Enumeration & Identification - Culturable	Bacteria Enumeration & Identification - Culturable
Methodology:	SLGL-3016	SLGL-3016	SLGL-3016
Sample Media:	Tryptic Soy Agar (TSA)	Tryptic Soy Agar (TSA)	Tryptic Soy Agar (TSA)
Air Volume (L):	160.0	160.0	160.0
Minutes:	4	4	4
Date Analyzed:	June 9, 2010	June 9, 2010	June 9, 2010

Bacteria Type	CFU	CFU/m ³	CFU	CFU/m ³	CFU	CFU/m ³
<i>Actinomyces</i>						
<i>Bacillus</i>			43	269	1	6
Gram Negative rods						
Gram Positive cocci	8	50	43	269	3	19
Gram Positive rods					1	6
Total CFU/m ³ :	8	50	86	538	5	31
Limit of Detection:	1	6	1	6	1	6
Comments:						

Lab Number:	282110	282111	282112
Sample Identification:	60810-91270-A25, Area, basement floor, at door between left and right rooms at discovery center	060810-91270-A26, Area, outside, in upper parking lot of Town Hall	060810-91270-A27, Analytical field blank
Analysis:	Bacteria Enumeration & Identification - Culturable	Bacteria Enumeration & Identification - Culturable	Bacteria Enumeration & Identification - Culturable
Methodology:	SLGL-3016	SLGL-3016	SLGL-3016
Sample Media:	Tryptic Soy Agar (TSA)	Tryptic Soy Agar (TSA)	Tryptic Soy Agar (TSA)
Air Volume (L):	160.0	160.0	0.0
Minutes:	4	4	0
Date Analyzed:	June 9, 2010	June 9, 2010	June 9, 2010

Bacteria Type	CFU	CFU/m ³	CFU	CFU/m ³	CFU	CFU/m ³
<i>Actinomyces</i>						
<i>Bacillus</i>	4	25				
Gram Negative rods						
Gram Positive cocci	1	6	2	13		
Gram Positive rods			4	25		
Total CFU/m ³ :	5	31	6	38	<1	
Limit of Detection:	1	6	1	6	1	
Comments:						

TNTC: Too numerous to count
 <: Less Than
 >: Greater Than

CFU: Colony Forming Unit
 CFU/m³: CFU per Meter Cubed

Reviewed by: M. Lewis L. Patterson

Approved By: Helen M. Enzer
 Norman Florio, Lab Manager



The Scott Lawson Group, Ltd.

Environmental, Health & Safety Consultants

July 20, 2010

Mr. Paul Sanders
Town of Barrington
41 Province Lane
Barrington, New Hampshire 03825

Re: Indoor Air Quality Survey at the Barrington Town Hall- Follow-up
SLGL File Number 91365

Dear Mr. Sanders:

On July 14, 2010, *The Scott Lawson Group, Ltd. (SLGL)* met with the Board of Selectman for Barrington to discuss the Indoor Air Quality (IAQ) issues at the Barrington Town Hall. The purpose of this letter is to address some questions that discussed during the meeting.

The primary area of concern regarding the IAQ at the Town Hall building is the recommendation by Desmarais Environmental, Inc. (Desmarais) that the building be vacated, based on their observations and sampling done in April and May of this year. *SLGL* has performed subsequent sampling similar to that performed by Desmarais, and the following recommendations and position on building occupancy is based on our sampling, and a review of the available results from the Desmarais testing. Note; the following recommendations assume that the Town has addressed the issue of water/moisture intrusion into the building to prevent future problems.

Discussion/Recommendations

1. *SLGL* does not feel that the results from the ambient (non-wall cavity) sampling conducted both by Desmarais and *SLGL*, warrant vacating the building at this time. The ambient results from both rounds of testing are, in general, not indicative of a major IAQ concern, and indicate that the microbial amplification occurring in the wall cavity areas has not greatly affected IAQ throughout the occupied areas of the building.

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2. During the meeting it was discussed if it were feasible to relocate some occupants to temporarily vacated areas of the building such as the Discovery Center area. Based on the sampling results, *SLGL* feels that this would be a viable option for the town, rather than vacating the building. Please see following recommendations concerning re-occupancy plan.
3. Prior to re-occupancy, the areas should be thoroughly cleaned and any water damaged materials replaced or removed (such as stained ceiling tiles noted in Discovery Room). In addition, all holes, wall penetrations etc. through the exterior walls should be sealed. Once the areas are cleaned and ready for re-occupancy, another limited round of air testing should be done to document ambient (non-wall cavity) levels of fungal spores at that time. This limited "background" testing should be repeated, after the areas has been occupied, every other week for at least two (2) additional rounds to document that the ambient levels remain at acceptable levels.
4. Long-term total remediation of the microbial growth in wall cavity areas may not be feasible due to building construction. However, limited remediation of the wall cavity spaces to reduce and inhibit future growth may be possible. As long as background sampling results remain at acceptable levels, immediate remediation of these area should not be necessary, and could be carried out in phases. In general, the recommended remediation should occur only in un-occupied areas, and would include sealing off the allotted work area, installing temporary vent holes in the bottom of the exterior walls to assist in drying of the areas, followed by a misting/fogging of the cavity space with an anti-microbial agent to help inhibit future growth. All holes generated during the remediation process would then be re-sealed.

SLGL feels that the above recommendations should allow the Town of Barrington to continue to occupy and utilize the town hall building. It should be noted that even at the relatively modest levels of airborne fungal spores in ambient areas identified by both Desmarais and *SLGL*, some sensitive individuals may continue to experience IAQ concerns associated with time spent in the building. Further, it is to be expected that similar levels would continue to be documented during the proposed additional background testing.

Thank you for utilizing the services of *The Scott Lawson Group, Ltd.* We trust that you will find everything in order; however, should you have any questions or comments, please feel free to contact or me at your earliest convenience.

Sincerely,

The Scott Lawson Group, Ltd.

A handwritten signature in black ink, appearing to read "Richard Lent", with a long horizontal flourish extending to the right.

Richard Lent, B.S.
Director of Technical Services

WARRANTY

The conclusions and recommendations contained in this report are based on information available to *SLGL* as of June 8, 2010. *SLGL* provides no warranties on information provided by third parties and contained herein. Data compiled were in accordance with *SLGL's* approved scope of services and should not be construed beyond their limitations. Any interpretations or use of this report other than those expressed herein are not warranted. The use, partial use, or duplication of this report without the expressed written consent of *The Scott Lawson Group, Ltd.* is strictly prohibited.



The Scott Lawson Group, Ltd.

Environmental, Health & Safety Consultants

September 16, 2010

Ms. Carol Reilly, Town Administrator
Town of Barrington
41 Province Lane
Barrington, New Hampshire 03825

Re: Indoor Air Quality Survey at the Barrington Town Hall - September 2, 2010
SLGL File Number 91487

Dear Ms. Reilly:

On September 2, 2010, *The Scott Lawson Group, Ltd. (SLGL)* conducted a limited Indoor Air Quality (IAQ) Survey at the Barrington Town Hall located at 41 Province Lane in Barrington, New Hampshire. The objective of the Survey was to evaluate the current indoor environment and perform a follow-up assessment to previous IAQ investigations in the building. The survey was accomplished by conducting limited interior visual observations of the affected area(s) in the building, collection of samples for airborne fungal spores and for Culturable Fungi.

During the survey, *SLGL* collected: ambient air samples with a BioTest™ Impaction Air Sampler for fungus, for the evaluation of total colony forming units per cubic meter (CFU/m³). Air samples for Total Spore Counts with Predominant Species Identification was also conducted with a Buck BioAire™ Bioaerosol Sampling Pump. Samples were collected inside the occupied areas of the building, in selected interior wall cavities, and outside the building (for comparison purposes). On the day of the survey, there were no visible signs of microbial growth on observed interior surfaces.

In general, sample results were similar to previous testing, in that airborne fungal levels were relatively low in occupied areas, but still elevated in wall cavity areas.

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www.slgl.com • scott@slgl.com



Air Samples - Total Spore Counts with Predominant Genus Identification:

SLGL collected Spore Trap samples, plus an outdoor air sample, and a requisite analytical blank for quality control purposes, for the evaluation of total airborne fungal spore concentrations (viable and non-viable, i.e., spores that have the ability to grow and those that do not). Each sample was collected by drawing air through an Air-O-Cell® sampling cassette at a flow rate of approximately fifteen liters per minute (15 lpm), for one (1) to five (5) minutes. Upon the completion of each sample, each cassette was sealed, issued a unique identification number, and its location documented. A summary of the analytical results (see Appendix A) are as follows:

Analysis of the Air-O-Cell cassettes (with count and identification by Predominant Genus) was used to determine total airborne viable and non-viable Fungi spores. All Fungi are considered to be potentially allergenic. (The term "genus" refers to the particular "family" of Fungi or Bacteria, and there are individual species within each genus.)

- Results for the six (6) samples collected indoors in general office areas measured ambient fungal spore concentrations from 53 spores per cubic meter of air (53 Ct/m³), to 587 Ct/m³, with the predominant genus of fungus identified as Basidiospores. For comparison, the outdoor sample result had a total spore count of 12,427 Ct/m³, with the predominant genus Basidiospores and *Cladosporium*.
- Two (2) samples were also collected indoors in selected exterior wall cavities in the town office areas on the ground floor, with results ranging from 22,400 Ct/m³, to 29,867 Ct/m³, with the predominant genus of fungus identified as *Aspergillus/Penicillium*- like.

Note: There is no acceptable limit for fungus exposures in non-industrial settings. A general rule of thumb in this industry is to look at a factor of ten (10), i.e., when indoor concentrations are greater than those found outdoors by a factor of 10 or more, indoor amplification is likely. In addition, when one genus of Fungus becomes predominant indoors versus outdoors, amplification is likely. Source: ACGIH - Bioaerosols: Assessment, and Control.

Air Samples - Total Culturable Fungi with Predominant Genus Identification:

Using a BioTest Impaction air sampler equipped with Rose Bengal Agar strips, two (2) air samples were collected inside the same building wall cavities as above, with analyses showing airborne total Fungi ranging from 275 to 375 CFU/m³. The predominant species within the wall cavity areas was *Aspergillus*. The outside sample had 219 CFU/m³ with *Cladosporium* and *Alternaria* as the predominant types.

Discussion

Based on the sampling results summarized above, conditions inside the building remain generally the same as during previous testing. Measured fungal spore levels in occupied areas of the building remain at relatively low levels. However, spore counts remain elevated in the wall cavity areas sampled. In addition, this round of testing has shown that the predominant viable fungal type in the wall cavity areas tested is *Aspergillus*.

Thank you for utilizing the services of *The Scott Lawson Group, Ltd.* We enjoyed working with you on this project and would welcome the opportunity to work with you on future projects. We trust that you will find everything in order; however, should you have any questions or comments, please feel free to contact or me at your earliest convenience.

Sincerely,

The Scott Lawson Group, Ltd.



Richard Lent, B.S.
Director of Technical Services

Enclosures

WARRANTY

The conclusions and recommendations contained in this report are based on information available to *SLGL* as of September 2, 2010. *SLGL* provides no warranties on information provided by third parties and contained herein. Data compiled were in accordance with *SLGL's* approved scope of services and should not be construed beyond their limitations. Any interpretations or use of this report other than those expressed herein are not warranted. The use, partial use, or duplication of this report without the expressed written consent of *The Scott Lawson Group, Ltd.* is strictly prohibited.

APPENDIX A

ANALYTICAL RESULTS



The Scott Lawson Group, Ltd.

Environmental, Health & Safety Consultants

20 Chenell Drive
Concord, New Hampshire 03301
Ph: (603) 228-3610, Fax: (603) 228-3871
www.slg.com email: Lab@slgl.com

Turnaround Time
(select one)

3 hours* 6-8 hours* 24 hours* 48 hours* 72 hours*
 5 days 10 days Weekend Other

(Not available for all tests. See rate card and website for details.)

Sample Matrix Type (select one)
 Air Bulk Soil
 Aqueous Oil Solid
 Agar (biostrip) Paint Swab
 Agar (plate) Sludge Tape Lift

All samples on this form should be of the NIOSH matrix type. Use additional forms as needed.

SEGL Unit	Sample Identification	Analysis	Date Sampled	Time	Media/Container	Preservative	4°C	Swab/Wipe Area Units	Air Volume (L)	Minutes
	090210-91487-A01	FUNGI COUNT & ID	9/2/10	N/A	A12.0 CELL	N/A	N/A	N/A	75.0	5
	A02	/	/	/	/	/	/	/	15.0	1
	A03	/	/	/	/	/	/	/	75.0	5
	A04	/	/	/	/	/	/	/	75.0	5
	A05	/	/	/	/	/	/	/	75.0	5
	A06	/	/	/	/	/	/	/	75.0	5
	A07	/	/	/	/	/	/	/	75.0	5
	A08	/	/	/	/	/	/	/	75.0	5
	A13	/	/	/	/	/	/	/	15.0	1
	A14	/	/	/	/	/	/	/	75.0	5

Sample Collection and Custody Information

Relinquished By:

Shore Zell

Samples Shipped Via:

FedEx UPS DHL US Mail Drop Box Other

Date/Time:

9-2-10/1430

Received By:

Tom S. De

Date/Time:

9/2/10 1435

Relinquished By:

Received By:

A Note to Customer: by signing and relinquishing your samples to the laboratory, you agree with the terms and conditions found on the back of this Chain of Custody Form.

The Scott Lawson Group, Ltd.
Analytical Services Agreement

These terms and conditions are only for analysis of the samples submitted with this chain of custody form. Accordingly, SLGL takes no responsibility for the accuracy of the sampling process and the analysis is based solely on the condition of the samples as received by us.

Laboratory Reports will contain only the analytical data for the samples submitted. No interpretations, consultations, or advice will be provided regarding the analytical results for these samples, as submitted. SLGL may, but is not required to, state in the Report that the analysis(es) indicates the presence of potentially hazardous concentration(s) of materials or the presence of hazardous substance(s) and that the report should be reviewed and dealt with promptly. Responding to the severity of the results provided is the sole responsibility of the customer and not SLGL. You are responsible for deciding how to use the information provided in the report and are solely responsible for dealing with the presence of any substance(s) identified in the report. SLGL can, under separate arrangements for professional consultation services, assist you with the interpretation of the report(s) and with how you should deal with the information provided. Contact the laboratory for further information.

The laboratory will retain the unanalyzed portion of the samples and the remains of the analyzed samples for six (6) weeks from the date the samples are received by us. After that six-week period, both will be disposed of in accordance with SLGL company programs and policies. Upon request, other arrangements can be made to retain the samples longer. Contact the laboratory for assistance.

The laboratory will retain the analytical reports for these samples, including data and calculations, for ten (10) years from the date SLGL prepares the reports. After that ten-year period, the reports, and included data and calculations, will be disposed of in accordance with SLGL programs and policies. Upon request, other arrangements can be made to retain the reports longer. Contact the laboratory for assistance.

All laboratory sample submittals must be paid for on a COD basis, cash, check, or credit card unless the customer has an approved account with *The Scott Lawson Group, Ltd.* Payment terms are NET 30-days from date of invoice. In the event of the customer's default in any of the terms of this Agreement, the customer will be responsible for all collection costs for *The Scott Lawson Group, Ltd.*, including all reasonable court costs and attorney's fees. Interest on late payments will be charged at two percent (2%) per month. This transaction being entered into the State of New Hampshire and New Hampshire law being applicable for its enforcement.



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Environmental, Health & Safety Consultants

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Concord, New Hampshire 03301
Ph: (603) 228-3610, Fax: (603) 228-3871
www.slg.com email: Lab@slg.com

Submitting Co.:

TOWN OF BERKHAMSTON

Address:

Client Project: TOWN HALL
TWO STAIRWELL

Client PO:

Turnaround Time
(select one)

3 hours* 6-8 hours* 24 hours* 48 hours* 72 hours*
 5 days 10 days Weekend Other

*Not available for all tests. Schedule with your local laboratory.

Sample Matrix Type
(select one)

Air
 Aqueous
 Agar (biostrip)
 Agar (plate)
 Bulk
 Oil
 Paint
 Sludge
 Soil
 Solid
 Swab
 Tape Lift

Phone:

email:

Sampled By: SLZ

Comments:

Water, drinking or waste.
 Wipe
 Wipe composite
 Other

Samples received in good condition? Yes No

All samples on this form should be of the SAME matrix type. Use additional forms as needed.

Sample Identification	Analyst	Date Sampled	Time	Media/ Container	Preservative	4°C	Swab/Wipe Area Units	Air Volume (L)	Minutes
02010-9107- A01	FUNGUS COUNT & ID	7/2/10	N/A	FUNGUS CELL	N/A	N/A	N/A	75.0	5
A02								15.0	1
A03								75.0	5
A04								75.0	5
A05								75.0	5
A06								75.0	5
A07								75.0	5
A08								75.0	5
A13								15.0	1
A14								75.0	5

Simple Collection and Custody Information

Samples Shipped Via: FedEx UPS DHL US Mail Drop Box Drop Off Other

Date/Time:

9-2-10/14:30

Received By:

Steve Zyl

Relinquished By:

Received By:

Date/Time:

7/2/10 14:35

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Environmental, Health & Safety Consultants

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Ph: (603) 228-3610, Fax: (603) 228-3871
www.slg.com email: Lab@slg.com

Turnaround Time: (select one)
 3 hours* 6-8 hours* 24 hours* 48 hours* 72 hours*
 5 days 10 days Weekend Other: _____

**Not available for all tests. Schedule with and workload prior to arrival.*

Sample Matrix Type (select one)
 Air Bulk Soil
 Aqueous Oil Solid
 Agar (biostrip) Paint Swab
 Agar (plate) Sludge Tape Lift

All samples on this form should be of the SAME matrix type. Use additional forms as needed.

Sample Identification	Analysis	Date Sampled	Time	Media/ Container	Preservative	4°C	Swab/Wipe Area Units	Air Volume (L)	Minutes
20210-31827-009	FUSEL ESTER + 100 (AQUACOUNT)	7/10	11A	1000	N/A	✓	N/A	40.0	1
A10		7/10	11A	1	1	✓	1	40.0	1
A11		7/10	11A	1	1	✓	1	160.0	4
A12		7/10	11A	1	1	✓	1		

Relinquished By: Steve Ball
 Date/Time: 9/21/14 14:30

Relinquished By: _____
 Date/Time: _____

Submitting Co.: **TOWN OF BURLINGTON**

Address: _____

Client Project: **TOWN HALL RENOVATION**

Client PO: _____

Sampled By: **SLZ**

Attention: _____

Phone: _____ Fax: _____

Comments: _____

SGI 809

Sample received in good condition? Yes No

Samples Shipped Via: FedEx UPS DHL US Mail Drop Box Drop Off Other

Received By: _____ Date/Time: 9/21/14 14:30

Received By: _____ Date/Time: 9/21/14 14:30

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The Scott Lawson Group, Ltd.
Analytical Services Agreement

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The laboratory will retain the unanalyzed portion of the samples and the remains of the analyzed samples for six (6) weeks from the date the samples are received by us. After that six-week period, both will be disposed of in accordance with SLGL company programs and policies. Upon request, other arrangements can be made to retain the samples longer. Contact the laboratory for assistance.

The laboratory will retain the analytical reports for these samples, including data and calculations, for ten (10) years from the date SLGL prepares the reports. After that ten-year period, the reports, and included data and calculations, will be disposed of in accordance with SLGL programs and policies. Upon request, other arrangements can be made to retain the reports longer. Contact the laboratory for assistance.

All laboratory sample submittals must be paid for on a COD basis, cash, check, or credit card unless the customer has an approved account with *The Scott Lawson Group, Ltd.* Payment terms are NET 30-days from date of invoice. In the event of the customer's default in any of the terms of this Agreement, the customer will be responsible for all collection costs for *The Scott Lawson Group, Ltd.*, including all reasonable court costs and attorney's fees. Interest on late payments will be charged at two percent (2%) per month. This transaction being entered into the State of New Hampshire and New Hampshire law being applicable for its enforcement.



The Scott Lawson Group, Ltd.

Environmental, Health & Safety Consultants

January 6, 2011

Ms. Carol Reilly, Town Administrator
Town of Barrington
41 Province Lane
Barrington, New Hampshire 03825

Re: Indoor Air Quality at the Barrington Town Hall

Dear Ms. Reilly:

As requested we are sending you this letter to review issues discussed at a meeting with town officials, Ray Desmarais of Desmarais Environmental, Inc. (Desmarais), and Richard Lent of *The Scott Lawson Group Ltd. (SLGL)*. The purpose of the meeting was to discuss and review sampling results, as well as opinions, recommendations and options relating to occupancy of the building. It was requested that *SLGL* and Desmarais develop a letter or Interim Report that stated areas of agreement and/or differences of opinion as expressed in the meeting.

First it was agreed after reviewing sampling results from the building by both companies, that the results generally indicated the same thing. Overall fungal spore levels in the occupied areas of the building were low or could be considered at relatively "normal" levels. However, testing in the wall cavities show elevated levels that indicate there is microbial contamination in these CMU wall cavities.

The rest of the discussions at the meeting involved opinions on the possible effect of the contamination in the wall, and options or recommendations for occupancy of the building. It is *SLGL's* opinion based on a limited review and understanding of the building construction, and a review of literature relating to microbial contamination, that the wall cavity contamination should not be causing widespread health effects in building occupants. However, as related by Desmarais and confirmed by town officials, there are still indoor air quality complaints or allergic-type health effects apparently related to building occupancy being reported. Based on this additional information, *SLGL* will agree that it is possible that building occupants are still being affected by the wall cavity contamination in some manner. This may include adverse reactions to exposure to fungal mycotoxins migrating in some fashion from the cavity areas.

Post Office Box 3304, Concord, NH 03302-3304
(603) 228-3610 • (800) 645-7674 • Fax (603) 228-3871
www.sgl.com • scott@sgl.com



The remainder of the meeting discussion revolved around possible remediation methods, and options the town has for moving forward. Remediation options are limited by the wall construction, may prove to be expensive, and would not likely remove all microbial contamination. It may also prove to be the case that any remediation would not prevent the same conditions from re-occurring in the future.

Options

Ray Desmarais reiterated his recommendation that the best long term solution for the town is to move the offices to another building or location. This is due to possible adverse health effects from the wall contamination, the difficulty/expense of remediation of the wall cavity area, and on-going potential liability of the town from building occupants. While *SLGL* agrees that the best or ideal solution to eliminate all building occupant complaints would be to move the offices, we are reluctant to say that this would be the only option. This is primarily due to the uncertainty of a proven mechanism for the contamination in the wall cavities to be causing all building occupant adverse symptoms.

In *SLGL's* opinion, it may prove that the continuing efforts to reduce water infiltration, improve drainage around the building, coupled with a feasible remediation plan will help reduce the effects, and help to improve building IAQ, which will reduce building occupant complaints, while still occupying the building. It must be noted however, that this option assumes that conditions will remain the same, and therefore that the town would still be faced with the continuing issue/liability of building occupant complaints.

In the interim, until a final decision can be made by the town on the occupancy issue, it was agreed that testing would continue to be performed on a monthly basis to start with, to document that conditions within the building are at least remaining the same, and not deteriorating. In addition, the town should continue with the practice of finding other work locations for those employees who are having adverse reactions to working in the building and who wish to work elsewhere.

As an added update, the monthly testing conducted through the end of November 2010, has continued to show the same results as previous rounds of testing. Fungal spore counts remain low in occupied areas of the building, while testing has continued to show elevated spore counts in the wall cavity areas.

Thank you for utilizing the services of *The Scott Lawson Group, Ltd.* We trust that you will find everything in order; however, should you have any questions or comments, please feel free to contact or me at your earliest convenience.

Sincerely,

The Scott Lawson Group, Ltd.

A handwritten signature in black ink, appearing to read "Richard Lent", with a horizontal line extending to the right from the end of the signature.

Richard Lent, B.S.
Director of Technical Services

Enclosures

WARRANTY

The conclusions and recommendations contained in this report are based on information available to *SLGL* as of September 2, 2010. *SLGL* provides no warranties on information provided by third parties and contained herein. Data compiled were in accordance with *SLGL's* approved scope of services and should not be construed beyond their limitations. Any interpretations or use of this report other than those expressed herein are not warranted. The use, partial use, or duplication of this report without the expressed written consent of *The Scott Lawson Group, Ltd.* is strictly prohibited.

