

May 10, 2012

Nichols Project No. 12-092-CFC

Via Email: dave.lapp@edmonton.ca
Original Will Follow

The City of Edmonton
Transportation Services
Streets Engineering
2nd Floor, 11404 - 60th Avenue
Edmonton, Alberta
T6H 1J5

ATTN: Mr. Dave Lapp
Environmental Scientist

RE: Hazardous Building Materials Assessment
Five Corners Site
10231 - 95th Street and 9440 Jasper Avenue
Edmonton, Alberta

Dear Mr. Lapp:

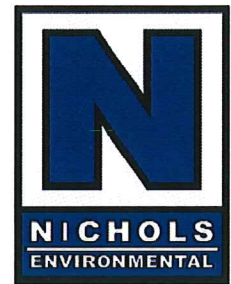
Nichols Environmental (Canada) Ltd. was retained by The City of Edmonton to conduct a Hazardous Building Materials Assessment at the above-referenced locations in Edmonton, Alberta (herein referred to as the 'Property').

It is understood that the 450 m² building formerly occupied by iHuman Youth Society (10231 - 95th Street) and the 200 m² building currently occupied by The Press Gallery (9440 Jasper Avenue) may be demolished as a part of a redevelopment plan for the Property. The City of Edmonton requested a Hazardous Building Materials Assessment to confirm the presence or absence of such materials so that all permits and notifications could be made in advance should the buildings be demolished.

BACKGROUND AND SITE DESCRIPTION

10231 - 95th Street

At the time of the inspection, the building which was previously occupied by iHuman Youth Society was vacant. This building had been most recently used for youth arts programming. The exterior of the building was of concrete cinder block construction on a concrete slab-on-grade foundation. The interior consisted of primarily wood framing and drywall, laminate flooring and steel roof girders. Lighting in the building was provided via ceiling-mounted fluorescent lamp ballasts. The west section of the building was composed of a large mess-hall/activity area with a cold food storage locker and washroom. The east section of the building was composed of several smaller rooms and another washroom. The main access to the building was on the



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PHASE I ESA
HISTORICAL REVIEW
DUE DILIGENCE

PHASE II ESA
SOIL & GROUNDWATER
ASSESSMENT
DELINEATION

REMEDIATION
ENGINEERING DESIGN
INSTALLATION
MANAGEMENT
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GEOMATICS
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DATA VISUALIZATION
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GEOSCIENCES
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FOUNDATIONS
SITE DEVELOPMENT
TOP-OF-BANK
SLOPE STABILITY
EARTHWORKS DESIGN
TENDERING
CONSTRUCTION
SUPERVISION



west side, with secondary access/fire exits located throughout the north side. This building was constructed in 1961.

9440 Jasper Avenue

The building occupied by The Press Gallery was located on the east portion of the Property and is currently occupied by a dry-cleaning service. The exterior of the building was constructed with concrete cinder blocks covered with stucco with brick side trim, and the building was on a slab-on-grade foundation. The interior of the building consisted of wood framing, drywall and laminate brick tile flooring. Lighting in the building was provided via ceiling-mounted fluorescent lamp ballasts. The north section of the building contained several types of steam, press and dry cleaning units within an open floor concept. The south section of the building was used for the customer reception area, washroom, dry storage and an office. Main access to the building was on the east side, with fire exits located on the north side of the building. This building was constructed in 1957.

SCOPE OF WORK

The following scope of work, as modified from the proposal presented to The City of Edmonton on March 27, 2012, was conducted on the Property:

- Prepare a site-specific health and safety plan and complete a hazard assessment;
- Mobilize to the Property and complete a visual inspection of the facility, focussing on areas identified to potentially contain hazardous building materials such as:
 - ▶ Ceiling tiles (asbestos);
 - ▶ Vinyl floor tiles (asbestos);
 - ▶ Drywall mud compound (asbestos);
 - ▶ Air duct tape, wrapping (asbestos);
 - ▶ Cinder block walls (asbestos);
 - ▶ Fluorescent lighting transformer ballasts (PCBs);
 - ▶ Thermostats (mercury);
 - ▶ Paint (lead); and
 - ▶ Water damage staining (mould);
- Collect and submit a minimum of 10 samples from various building materials for asbestos analyses;
- Collect and submit four paint samples for lead analyses from each paint type observed;
- Inspect lamp ballasts for serial number, make and model and compare to a data base of known PCB-containing ballasts;
- Inspect any thermostats for the presence of mercury;
- Inspect any areas showing water damage or staining for the presence of mould;



- If mould is identified while on-site, collect baseline air samples for the presence of mould spores within the building as well as a baseline sample of outdoor air; and
- Prepare a letter report documenting the assessment. Recommendations for further assessment and/or remediation would be included in this report.

Approval to conduct the Hazardous Building Materials Assessment was granted from The City of Edmonton on April 12, 2012.

ASSESSMENT RESULTS

Nichols Environmental mobilized to the Property on April 20, 2012 to conduct the Hazardous Building Materials Assessment. Photographs depicting the sample locations and materials sampled are attached.

Nichols Environmental completed a cursory inspection of the piping associated with the dry-cleaning equipment within The Press Gallery and did not identify any significant leaks or evidence of releases.

Polychlorinated Biphenyls (PCBs)

PCBs were historically used in cooling and insulating fluids for electrical equipment such as transformers, capacitors, hydraulics, voltage regulators, and lamp ballasts as they do not readily burn or conduct electricity. A number of health concerns were found to be associated with the chemicals. As a result of these findings, their use in electrical equipment was prohibited in the early 1980s. PCBs may still be found in equipment manufactured prior to this time.

Light Ballasts

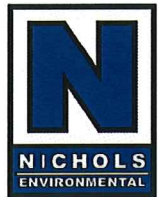
Four fluorescent lamp ballasts were inspected within the buildings. Two in the Press Gallery building were identified to not contain PCBs, and the light ballasts in the former iHuman building did not have any indicators that would properly identify if the ballasts contained PCBs.

Lead-Based Paint

Exposure to lead, a highly toxic substance, can lead to a wide range of adverse health effects in adults and most commonly in children.

Lead-Based Paint

Until 1976, lead was commonly used in industrial paints due to its ability to resist corrosion. Lead-based paints are considered a significant risk to humans, especially children, due to the possibility of ingestion of peeling or flaking lead-based paint. Lead-based paints may also be a risk to humans through inhalation if the paint becomes airborne via sanding or grinding.



The Hazardous Products Act limited the amount of lead in paint to 0.5 percent in 1976. The addition of lead in paint was eliminated in 1990 by the Canadian Paint and Coating Association. Lead-based paint may still be present beneath newer layers of paint in buildings constructed prior to 1990.

The exterior paint sampled from the former iHuman building (SB-01 blue and SB-02 red exterior) had elevated concentrations of lead ranging from 810 to 924 mg/kg, which is above the consumer limits of 600 mg/kg. Paint samples were also collected from ceiling vents (SA-03 and SA-04) within The Press Gallery building and walls, which did not identify any significant concentrations of lead.

Exova conducted the laboratory analyses, and a copy of the final signed analytical report is attached.

Mercury

Mercury is a metal that is a liquid at room temperature. Mercury is known to evaporate, or volatilize, easily. In the environment, mercury has the ability to migrate through all media, and is known to bio-accumulate. These characteristics of the element can lead to environmental and human health issues, including a number of adverse neurological health affects. Mercury is commonly found in thermostats, electrical switches, and fluorescent light bulbs in buildings.

Two mercury-containing thermostats were identified in the former iHuman building; on the north side near the cold storage freezer, and within the eastern portion of the structure. No other mercury thermostats were observed within the iHuman or The Press Gallery buildings at the time of the inspection.

ASBESTOS SURVEY

Asbestos is a naturally occurring fibrous mineral primarily used in building materials for its flame retardant and insulation properties. The material is often mixed with cement or woven into fabrics or mats. Asbestos fibres are most commonly found in boiler rooms and piping insulation, cement products, floor coverings, ceiling tiles and certain types of vermiculite insulation which are commonly found within the hollows of cinder block walls.

Asbestos-containing building materials (ACBMs) are made up of microscopic asbestos fibres that may become airborne when damaged. The inhalation of asbestos fibres has been known to cause significant health problems. Until the early 1980s asbestos-containing insulation was used in office buildings, public buildings, and schools.

Each building was inspected for potential ACBMs. Within The Press Gallery building, potential ACBMs that were identified due to the age of the building included the ceiling tiles, pipe insulation, drywall mud, grout, floor tile and stucco. A hole was also drilled within an exterior cinder block wall, but no vermiculite insulation was identified.

Within the former iHuman building, potential ACBMs identified included ceiling tile and vermiculite insulation, which was determined after drilling a hole in the exterior cinder block wall. This



building appeared to have undergone several renovations which likely previously removed many of the potential ACBM sources.

In total, ten samples were collected from various building materials within the buildings, including ceiling tile, pipe insulation, drywall mud, grout, floor tile, stucco and the vermiculite insulation identified within the cinder block wall of the former iHuman building. Of the ten samples submitted, none were found to contain asbestos, including the vermiculite insulation.

Analytical results are summarized in Table 1 below.

Table 1: Asbestos Analytical Results

Sample ID/ Location	Asbestos Type and Percentage
9440 Jasper Avenue (The Press Gallery)	
SA-01 (Ceiling Tile A)	None Detected
SA-02 (Ceiling Tile B)	None Detected
SA-05 (Grout)	None Detected
SA-06 (Drywall Mud)	None Detected
SA-07 (Pipe Wrap)	None Detected
SA-08 (Tile)	None Detected
SA-09 (Stucco)	None Detected
10231 - 95 th Street (former iHuman)	
SB-03 (Vermiculite)	None Detected
SB-04 (Drywall Mud)	None Detected
SB-05 (Ceiling Tile)	None Detected

Enviro-Works Inc. conducted the laboratory analyses, and a copy of the final signed analytical report is attached.

MOULD

During the inspection, evidence of mould was identified within The Press Gallery building on one of the ceiling tiles outside of the bathroom. The mould is believed to be the result of repeated exposure to condensation from a plastic vent pipe above the ceiling tiles. Water damage was also noted along the east-facing window sills in this building, also likely a result from condensation on the windows from high humidity in the building during the winter months.



Water damage was identified within the former iHuman building in the vicinity of a hot water tank which appeared to have ruptured at some point in time prior to the site inspection. Water was still present at this location and should be removed as the warmer temperatures will provide favourable conditions for mould growth. Water damage was also noted within portions of the washrooms in the former iHuman building.

Based on the observations within The Press Gallery, two air samples were collected from inside the building (Inside Window and Back Office), and a third outside to be utilized as a baseline (Baseline). All three samples were submitted for laboratory analysis of mould/fungi.

There are no formal guidelines for mould spores within residential or commercial dwellings in Canada. However, Health Canada dictates levels below 300 spore counts per cubic metre (Ct/m³) are deemed nonthreatening. Levels up to 500 Ct/m³ per spore type in the late summer months are acceptable, as long as *Cladosporium* is the more prevalent species. Background concentrations collected from outdoor ambient air are also taken into consideration when comparing to indoor sample concentrations.

The results of the total mould/fungi analyses are compared to the baseline concentrations in the background sample (Outside), which are presented in Table 2 below.

Table 2: Non-Viable Mould Air Sampling Results

Date Collected	Sample ID/ Location	Mould Identified (Genus)	Mould Concentration in Air (Ct/m ³)
April 20, 2012	Outside (Background) taken in parking lot to east of building	<i>Cladosporium</i> <i>Basidiospores</i> <i>Penicillium/Aspergillus</i> Total Spores	720 40 320 1,080
	Inside by Window near east work area	<i>Cladosporium</i> <i>Ascospores</i> <i>Penicillium/Aspergillus</i> <i>Smuts, myxomycetes</i> Total Spores	480 80 320 80 960
	Back Office	<i>Cladosporium</i> <i>Basidiospores</i> <i>Penicillium/Aspergillus</i> Total Spores	320 40 640 1,000

***Bold** denotes elevated concentrations relative to background (used with discretion due to time of year).

Based on the mould analysis, the total spore concentration found in the background sample (Outside) was similar to that found at the office and window sample locations inside The Press Gallery. However, an elevated *Penicillium/Aspergillus* spore count was reported from the Back Office sample (640 Ct/m³) when compared to the Background sample (320 Ct/m³). This is likely



from the mould present on the ceiling tile directly beneath the vent pipe. Removal of the affected ceiling tile will likely mitigate the elevated spore count in this area.

PRO-LAB® conducted the laboratory analyses, and a copy of the final signed analytical report is attached.

CONCLUSIONS

Based on the information collected to date, exterior paint on the west wall on the former iHuman building had elevated concentrations of lead ranging from 810 to 924 mg/kg, which is above the consumer limits of 600 mg/kg. Two mercury-containing thermostats were also identified within this building.

Evidence of mould growth on a ceiling tile was observed along with elevated *Penicillium/Aspergillus* concentrations near a small office within The Press Gallery when compared to outdoor ambient air. The ceiling tile should be removed and disposed of to mitigate this source of mould spores. Evidence of water damage was also noted beneath the windows at The Press Gallery, likely as a result of condensation. If the commercial unit is to be utilized in the future, consideration should be given to mitigating the vent pipe and windows to prevent water damage and favourable conditions for mould growth from condensation.

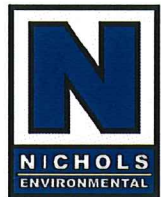
No further testing or abatement is recommended with respect to the hazardous building materials with the exception of being aware of the lead-based paint present on the exterior of the former iHuman building and following recommended handling and disposal procedures during any demolition or renovation works.

LIMITATIONS

In conducting the Hazardous Building Materials Assessment on the Property and in rendering our conclusions, Nichols Environmental gives the benefit of its best judgment based on its experience and in accordance with generally accepted professional standards for this type of investigation. Our conclusions are limited by the following:

- Nichols Environmental spent a limited amount of time on-site. Thus, any activities conducted on-site at times other than that of the sampling program that Nichols Environmental is not aware of may have an impact on the conclusions and recommendations presented;
- Nichols Environmental has assumed that the information provided in documents or statements is true and accurate; and
- The study area was limited to the areas described herein.

The City of Edmonton
Hazardous Building Materials Assessment
Five Corners Site: 10231 - 95th Street and 9440 Jasper Avenue
Edmonton, Alberta
Project No. 12-092-CFC
May 10, 2012
Page 8 of 8



This report is intended to provide information to reduce, but not necessarily eliminate, uncertainty regarding the potential for hazardous building materials on the Property. This report has been prepared for the exclusive use of The City of Edmonton. Any uses which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nichols Environmental (Canada) Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

CLOSURE

We trust this meets your requirements. Please contact the undersigned at (780) 484-3377 if you have any questions or concerns. Thank you for considering Nichols Environmental to aid you in this matter.

Yours truly,
NICHOLS ENVIRONMENTAL (CANADA) LTD.
APEGA PERMIT TO PRACTICE NO. P6730



Markus Hansen, E.I.T.

Civil/Environmental Engineer

Reviewed by:



Tawnya Anderson, B.Sc., EPT
Project Manager

MH/TA/RWD/sam

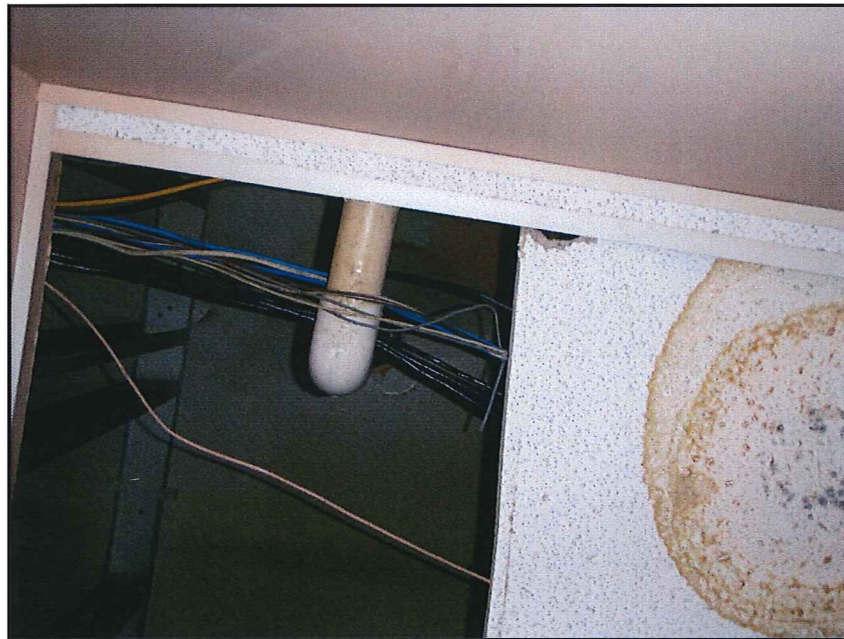
Attachments



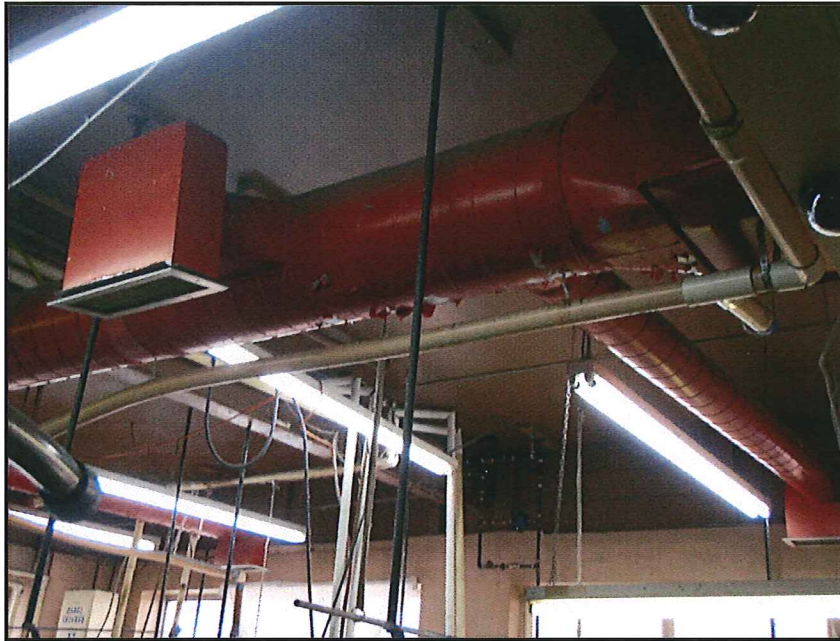
5/10/12
R.W. (Rob) Dickie, P.Geol., R.E.T., EP
President



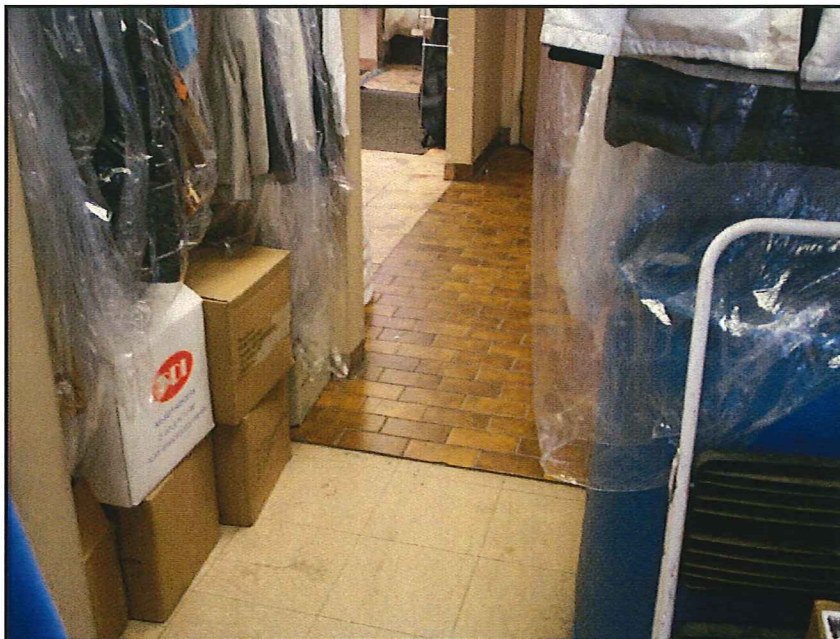
Photograph 1: Moisture damage beneath the east-facing windows within The Press Gallery building.



Photograph 2: Potential mould growth on the ceiling tile (right) likely due to repeated exposure to moisture due to condensation from the vent pipe, within The Press Gallery building.



Photograph 3: Peeling paint observed on the overhead ventilation system within The Press Gallery building. This paint did not contain significant concentrations of lead.



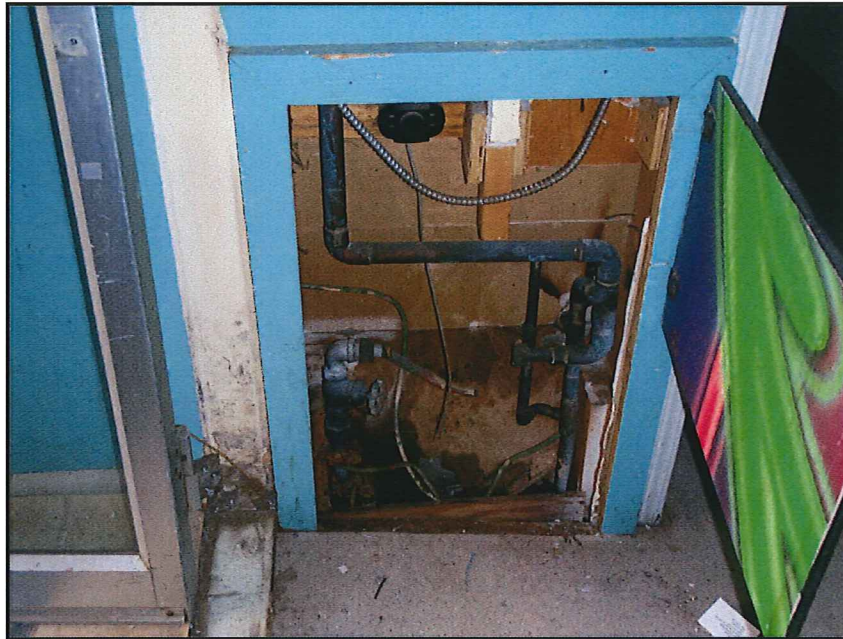
Photograph 4: Three different types of flooring found within The Press Gallery building, none of which was identified to contain asbestos.



Photograph 5: West exterior of the former iHuman building. Paint samples were identified to contain elevated levels of lead.



Photograph 6: Moisture/water damage within the former iHuman building, likely due to a ruptured water heater.



Photograph 7: Water damage likely due to leaking piping within the former iHuman building.



Photograph 8: Vermiculite insulation identified within the exterior cinder-block walls of the former iHuman building. Tested vermiculite insulation did not contain asbestos.

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Report Transmission Cover Page

Bill To: Nichols Environmental (Canada) Project:
Report To: Nichols Environmental (Canada) ID: 12-092 CFC
17331-107 Ave NE Name:
Edmonton, AB, Canada Location:
T5S 1E5 LSD:
Attn: Tawnya Anderson P.O.:
Sampled By: Acct code:
Company:

Lot ID: **867111**
Control Number:
Date Received: Apr 26, 2012
Date Reported: Apr 30, 2012
Report Number: 1732039

Contact & Affiliation	Address	Delivery Commitments
Tawnya Anderson Nichols Environmental (Canada) Ltd	17331-107 Ave NE Edmonton, Alberta T5S 1E5 Phone: (780) 484-3377 Fax: (780) 484-5093 Email: anderson@nicholsenvironmental.com	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kelly Goetz Nichols Environmental (Canada) Ltd	17331-107 Ave NE Edmonton, Alberta T5S 1E5 Phone: (403) 993-6636 Fax: (780) 484-5093 Email: goetz@nicholsenvironmental.com	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Merge Reports

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Sample Custody

Bill To: Nichols Environmental (Canada) Project:
Report To: Nichols Environmental (Canada) ID: 12-092 CFC
17331-107 Ave NE Name:
Edmonton, AB, Canada Location:
T5S 1E5 LSD:
Attn: Tawnya Anderson P.O.:
Sampled By: Acct code:
Company:

Lot ID: **867111**
Control Number:
Date Received: Apr 26, 2012
Date Reported: Apr 30, 2012
Report Number: 1732039

Sample Disposal Date: May 30, 2012

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the top of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for an additional 30 days	\$ 2.50 per sample
Storage for an additional 60 days	\$ 5.00 per sample
Storage for an additional 90 days	\$ 7.50 per sample

☐ Return Sample, collect, to the address below via:

☐ Greyhound

☐ DHL

☐ Purolator

☐ Other (specify) _____

Name _____

Company _____

Address _____

Phone _____

Fax _____

Signature _____

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Analytical Report

Bill To: Nichols Environmental (Canada) Project:
Report To: Nichols Environmental (Canada) ID: 12-092 CFC
17331-107 Ave NE Name:
Edmonton, AB, Canada Location:
T5S 1E5 LSD:
Attn: Tawnya Anderson P.O.:
Sampled By: Acct code:
Company:

Lot ID: **867111**
Control Number:
Date Received: Apr 26, 2012
Date Reported: Apr 30, 2012
Report Number: 1732039

		Reference Number	867111-1	867111-2	867111-3
		Sample Date			
		Sample Time			
		Sample Location			
		Sample Description	SB-01 Blue Exterior Paint	SB-02 Red Exterior Paint	SA-03 Paint On Vents
		Matrix	Waste - industrial	Waste - industrial	Waste - industrial
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion					
Lead	Strong Acid Extractable	mg/kg	924	810	12
					0.1

Analytical Report

Bill To: Nichols Environmental (Canada) Project:
Report To: Nichols Environmental (Canada) ID: 12-092 CFC
17331-107 Ave NE Name:
Edmonton, AB, Canada Location:
T5S 1E5 LSD:
Attn: Tawnya Anderson P.O.:
Sampled By: Acct code:
Company:

Lot ID: **867111**
Control Number:
Date Received: Apr 26, 2012
Date Reported: Apr 30, 2012
Report Number: 1732039

Reference Number 867111-4
Sample Date
Sample Time
Sample Location
Sample Description SA-04 Pink Paint
Under Sil
Matrix Waste - industrial

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion					
Lead	Strong Acid Extractable	mg/kg	6.9		0.1

Approved by:



Anthony Neumann, MSc
Laboratory Operations Manager

Methodology and Notes

Bill To:	Nichols Environmental (Canada)	Project:		Lot ID:	867111
Report To:	Nichols Environmental (Canada)	ID:	12-092 CFC	Control Number:	
	17331-107 Ave NE	Name:		Date Received:	Apr 26, 2012
	Edmonton, AB, Canada	Location:		Date Reported:	Apr 30, 2012
	T5S 1E5	LSD:		Report Number:	1732039
Attn:	Tawnya Anderson	P.O.:			
Sampled By:		Acct code:			
Company:					

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Metals ICP-MS (Hot Block) in soil	SW-846	* Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	27-Apr-12	Exova Edmonton
		<i>* Reference Method Modified</i>		

References

SW-846 Test Methods for Evaluating Solid Waste

Comments:

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

No Chain of Custody Available.

ENVIRO-WORKS INC.

2514 Cameron Ravine Landing NW
Edmonton, Alberta T6M 0L3

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Fax: (780) 473-0767
www.enviro-works.com

Bulk (ACM) Identification:
Methodology NIOSH 9002 Issue : 2

CLIENT: Nichols Environmental PROJECT: 12-092-CFC

Date Analyzed	EWL Log #	Sample #	Client Sample Information	Phases	Asbestos Type	%	Other Materials Detected
24-Apr-12	72185	1	CEILING TILE A	100% Beige compressed fibrous mat	ND		Cellulose, P, MW, NFM
24-Apr-12	72186	2	CEILING TILE B	100% Beige compressed fibrous mat	ND		Cellulose, P, MW, NFM
24-Apr-12	72182	3	VERMICULITE	100% Vermiculite & Mica	*ND		VM
24-Apr-12	72183	4	DRYWALL MUD	100% Grey chalky mix	ND		Cellulose, P, NFM
24-Apr-12	72184	5	CEILING TILE	100% Brown compressed fibrous mat	ND		Cellulose
24-Apr-12	72187	5	GROUT	100% Grey cementitious mass	ND		NFM
24-Apr-12	72188	6	DRYWALL MUD	100% White chalky mix	ND		P, NFM
24-Apr-12	72189	7	PIPE WRAP	100% Beige fibrous woven textile	ND		Cellulose, GF, NFM

NFM=Non Fibrous Material
V=Vermiculite Mica
ND=None Detected
GF=Glass Fibre
P=Perilla
MW=Mineral Wool
SF=Synthetic Fibre

Enviro-Works Inc. is a member of the AIHA BAPAT Quality Control Program

ENVIRO-WORKS INC.

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Fax: (780) 473-0767

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Bulk (ACM) Identification:
Methodology NIOSH 9002 Issue : 2

CLIENT: Nichols Environmental
PROJECT: 12-092-CFC

Date Analyzed	EWL Log #	Sample #	Client Sample Information	Phases	Asbestos Type	%	Other Materials Detected
24-Apr-12	72190	8	TILE	100% Brown tile	ND		NFM
24-Apr-12	72191	9	STUCCO	100% Beige cementitious mix	ND		NFM

*Please be aware that due to particular difficult sample binding matrix it is possible for low asbestos percentage samples to be alternatively sample prepped to detect the asbestos. Please refer to the methodology for further suggestive information for these types of samples. A result of none detected or < 1 % by PLM does not assure that the material is safe. TEM analysis is highly recommended for vermiculite & mica samples and a ND result is considered non-conclusive due to the detection limit of the method used as stated above. Transmission Electron Microscopy (TEM) represents the most sophisticated technology available for characterizing asbestos minerals and applies magnifications uncomparably greater. TEM can differentiate not only asbestos from non-asbestos fibres, but also can classify the asbestos minerals. The sample preparation and analysis process requires much longer time than PLM and is much more expensive. Please contact LabCor for TEM analysis directly at : 1-206-781-0155.

Samples will be stored in care of Enviro-Works Inc. for 30 days after the date of submission for analysis. Any storage arrangements after this time is the responsibility of the client. Any samples in care of Enviro-Works Inc. past the 30 days upon submission for analysis will be disposed of.

Cherie

Cherie Laplante, B.Sc.

Lab Analyst

Pg 1 of 1

NFM=Non Fibrous Material
V=Vermiculite Mica
ND=None Detected
GF=Glass Fibre
P=Perlite
MW=Mineral Wool
SF=Synthetic Fibre

Enviro-Works Inc. is a member of the AIHA BAPAT Quality Control Program

12-05-089:00 AMNichols Bulk 1-9.xls



40 Hanlan Road, Suite #45, Vaughan, ON, L4L 3P6 Canada (954) 384-4446

NICHOLS ENVIRONMENTAL
17331-107 AVE
EDMONTON, AB T5S 1E5

Certificate of Mold Analysis

Prepared for: NICHOLS ENVIRONMENTAL
Phone Number: (780) 484-3377
Fax Number:
Project Name: FIVER CORNERS
Test Location: 9440 JASPER AVENUE
EDMONTON, AB
Chain of Custody #: 574149
Received Date: April 23, 2012
Report Date: April 24, 2012

John D. Shane Ph.D., QA Manager

Currently there are no Provincial regulations for evaluating potential health effects of fungal contamination and remediation. This information is subject to change as more information regarding fungal contaminants becomes available. For more information visit: <http://www.hc-sc.gc.ca/ewh-semt/air/in/poll/mould-moisissure/index-eng.php> or http://www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/momo/momo_005.cfm. This document was designed to follow currently known industry guidelines for the interpretation of microbial sampling, analysis, and remediation. Since interpretation of mold analysis reports is a scientific work in progress, it may as such be changed at any time without notice. The client is solely responsible for the use or interpretation. PRO-LAB/SSPTM Inc. makes no express or implied warranties as to health of a property from only the samples sent to their laboratory for analysis. The Client is hereby notified that due to the subjective nature of fungal analysis and the mold growth process, laboratory samples can and do change over time relative to the originally sampled material. PRO-LAB/SSPTM Inc. reserves the right to properly dispose of all samples after the testing of such samples are sufficiently completed or after a 7 day period, whichever is greater. PRO-LAB/SSPTM Inc. participates in the AIHA EMPAT program (Lab # 184065)

For more information please contact PRO-LAB at (800) 429-0550 or email info@prolabinc.com

Prepared for : NICHOLS ENVIRONMENTAL

Test Address : FIVER CORNERS

9440 JASPER AVENUE

EDMONTON, AB

ANALYSIS METHOD	Spore trap analysis			Spore trap analysis			Spore trap analysis			INTENTIONALLY BLANK		
LOCATION	Outside			Inside By Window			Back Office					
COC / LINE #	574149-1			574149-2			574149-3					
SAMPLE TYPE & VOLUME	Z5 - 25L			Z5 - 25L			Z5 - 25L					
SERIAL NUMBER	Z574578			Z574576			Z509602					
COLLECTION DATE	Apr 20, 2012			Apr 20, 2012			Apr 20, 2012					
ANALYSIS DATE	Apr 24, 2012			Apr 24, 2012			Apr 24, 2012					
CONCLUSION	CONTROL			NOT ELEVATED			NOT ELEVATED					
IDENTIFICATION	Raw Count	Spores per m ³	Percent of Total	Raw Count	Spores per m ³	Percent of Total	Raw Count	Spores per m ³	Percent of Total	Raw Count	Spores per m ³	Percent of Total
Cladosporium	18	720	67	12	480	50	8	320	32			
Other Ascospores				2	80	8						
Other Basidiospores	1	40	4				1	40	4			
Penicillium/Aspergillus	8	320	30	8	320	33	16	640	64			
Smuts, myxomycetes				2	80	8						
TOTAL SPORES	27	1,080	100	24	960	100	25	1,000	100			
Minimum detection limit:	1	40		1	40		1	40				
BACKGROUND DEBRIS	Heavy			Heavy			Heavy					
OBSERVATIONS & COMMENTS												

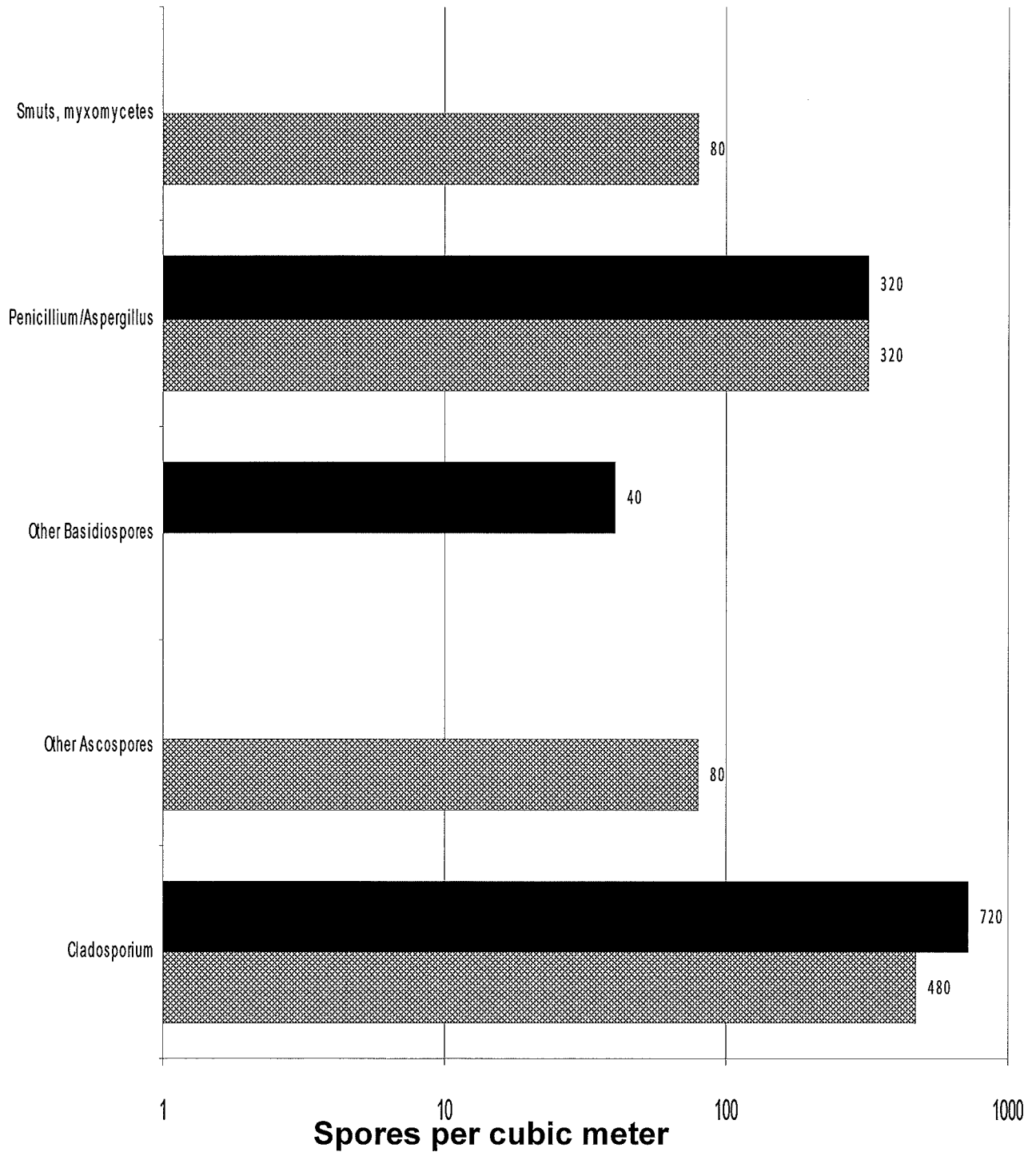
Background debris estimates the amount of particles that are not pollen or spores and directly affects the accuracy of the spore counts. The categories of Light, Moderate, Heavy and Too Heavy for Accurate Count, are used to indicate the amount of deposited debris. Increasing amounts of debris will obscure small spores and can prevent spores from impacting onto the slide. Spore counts that are included with Heavy or Too Heavy for Accurate Count are minimal counts and the actual numbers of spores are likely much higher. Total percent may not equal 100% due to rounding.



40 Hanlan Road, Suite #45, Vaughan, ON, L4L 3P6 Canada (954) 384-4446

Chain of Custody # 574149

Inside By Window
Outside

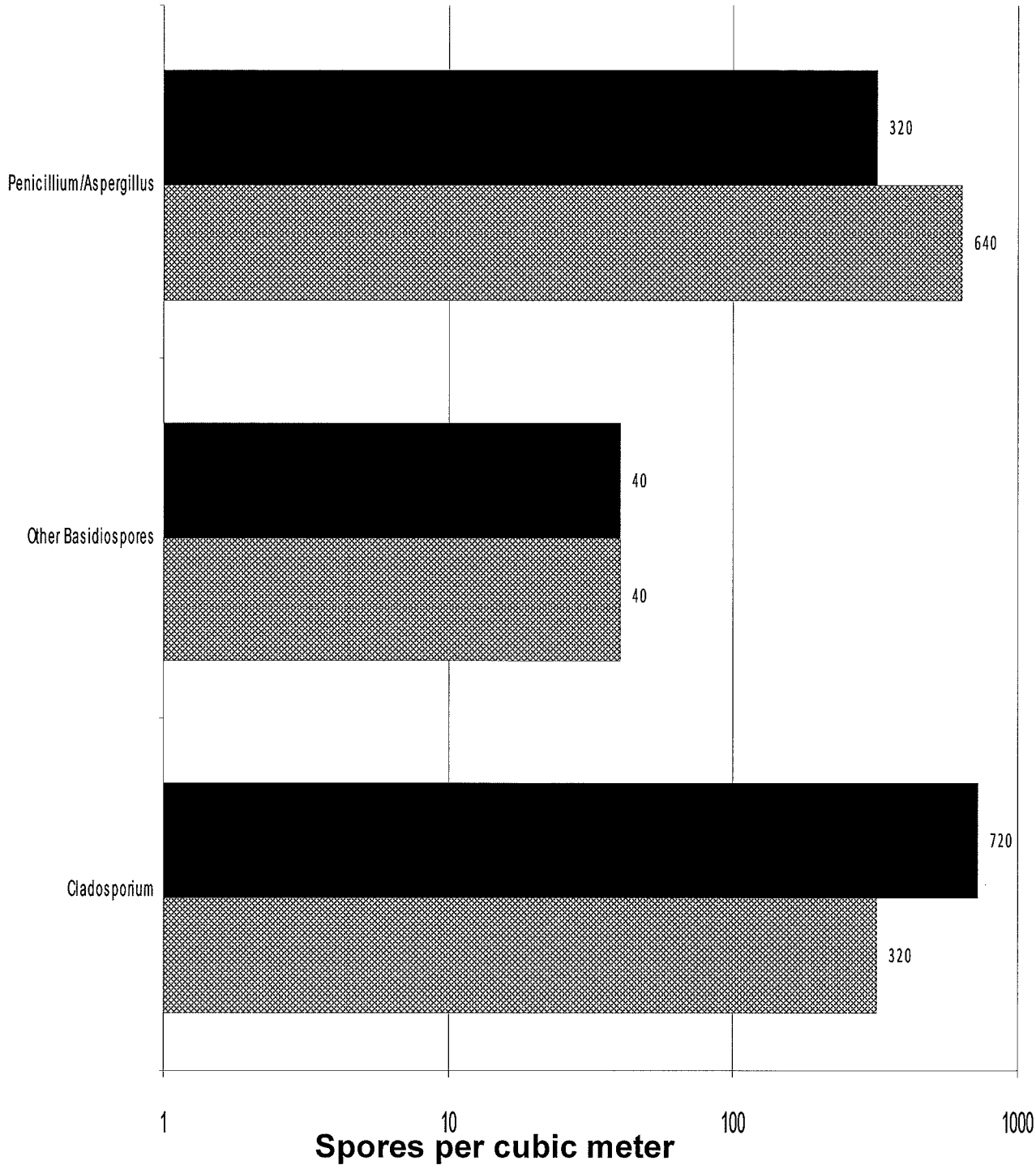




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Chain of Custody # 574149

Back Office
Outside



Identification	Outdoor Habitat	Indoor Habitat	Allergic Potential	Comments
Cladosporeum	The most common spore type reported in the air worldwide. Found on dead and dying plant litter, and soil. Common everywhere. Constitutes a large part of the airspora outside. Can reach very high numbers in the air outside during the spring and summer. Can increase in numbers during and after rainfalls.	Commonly found on wood and wallboard. Commonly grows on window sills, textiles and foods. Very few of this group grow inside. The notable exception is Chaetomium and Ascotricha.	Type I (hay fever and asthma), Type III (hypersensitivity pneumonitis) allergies.	A very common and important allergen source both outdoors and indoors.
Ascospores			Little known for most of this group of fungi. Dependent on the type (see Chaetomium and Ascotricha).	
Basidiospores	Commonly found everywhere, especially in the late summer and fall.	Not normally found growing indoors. Can grow on wet lumber, especially in crawlspaces.	Some allergenicity reported. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis).	Among this group are dry rot fungi Serpula and Poria that are particularly destructive to buildings.
Penicillium/Aspergillus	Common everywhere. Normally found in the air in small amounts in outdoor air. Grows on nearly everything.	Wetted wallboard, wood, food, leather, etc. Able to grow on many substrates indoors.	Type I (hay fever and asthma) allergies and Type III (hypersensitivity pneumonitis) allergies.	This is a combination group of Penicillium and Aspergillus and is used when only the spores are seen. The spores are so similar that they cannot be reliably separated into their respective genera.
Smuts, myxomycetes	Commonly found everywhere, especially on logs, grasses and weeds.	Smuts don't normally grow indoors, but can occasionally be found on things brought from outside and stored in the house. Myxomycetes can occasionally grow indoors, but need lots of water to be established.	Type I (hay fever and asthma) allergies.	Smuts and myxomycetes are a combined group of organisms because their spores look so similar and cannot be reliably distinguished from each other.

