



September 27, 2022

Fleming College

Frost Campus
200 Albert St
Lindsay, Ontario

ATTN: Mr. Rick Teasdale
Facility Manager

RE: Mould Assessment and Surface Sampling – THEM Project # 18176
Fleming College – Frost Campus
Mould Inspection and Testing

1.0 INTRODUCTION AND BACKGROUND

T. Harris Environmental Management Inc. (THEM) personnel were on-site to provide mould inspection and surface sampling services within Classroom 413 in the Natural Resources Law Building at the Frost Campus in Lindsay, Ontario. The mould inspection and testing was performed as part of Fleming College's due diligence in response to occupant concerns.

2.0 REMEDIATION METHODOLOGY

2.1 Visual Inspections

Visual inspections were performed in all accessible areas around the windows in Classroom 413 in the Natural Resources Law Building. The focus of the visual inspection was to assess for obvious visible signs of mould growth and/or staining and determine the need for mould remediation, if any. A selection of photographs taken during our site inspections are included in Appendix II.

2.2 Mould Tape Lift Sampling

In order to assess for the presence of mould growth on the surfaces affected, tape lift sampling was performed. The tape lift sample was taken, using the sticky side of a small piece of clear plastic tape. The tape was pressed against the surface to be tested and applied to a glass slide or wax paper. The samples were then sent to an independent laboratory for direct exam. Direct examination involves observing the sample first by macroscopic and then by direct microscopic exam. Microscopically, fungal cells are observed either as mould (hyphae wit



conidia or spores) or as yeast. Mould is then identified to their family or genus level based on distinct colonial colour or texture. Relative concentrations of each mould identified are subjectively graded by the analyst and reported according to a descriptor provided by the analytical laboratory. No culture analysis for a quantitative assessment of the extent of microbial growth can be performed using this method.

No data is currently available that establish a clear dose-response relationship for saprophytic fungal spore exposure (i.e., those deriving nutrition from non-living materials in the environment). Interpretation of sampling results should be based on taxonomic data (genus and species identification) by comparing indoor and outdoor biodiversity. Therefore, in order for proper interpretation of the results, air samples were collected within the areas of concern as well as in an interior reference area and outside the building for comparison. Additionally, guidelines were referenced for the interpretation of the results. References for can be found at the end of this report.

3.0 SUMMARY OF INSPECTIONS

3.1 September 23rd 2022

The following observations were made during the visual inspection within Classroom 413 of the Natural Sciences Law Building at the Fleming College Frost Campus in Lindsay, ON. Visual inspection also noted small amounts of mould growth on the window frame. This mould growth is quantified to affect less than 1 sf of building materials around the window frame. THEM collected a surface sample to verify mould contamination.

THEM performed mould tape lift sampling subsequent to the visual inspection.

TABLE I
Summary of Tape Lift Sampling Result
Fleming College Frost Campus
Natural Science Law Building

Sample Number/ Location	Fungal Elements Identified	Microscopic Results	
		Overall Concentration	Indication of Fungal Growth?
T1 Window Ledge / Wall In Classroom 413	<i>Cladosporium</i>	Sparse	Yes



4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the visual inspections and surface sampling results, minor amounts of mould growth was detected at the time of this assessment. Therefore, THEM recommends that all non-porous materials should be cleaned following proper remedial techniques. Cleaning and disinfection procedures should follow the “Environmental Abatement Council of Canada’s” (EACC) Mould Abatement Guidelines Edition 2015 Level 1 Procedures” and the “Institute of Inspection, Cleaning and, Restoration Certification (IICRC) S520 – Source Containment”. All remedial procedures should be: conducted in a manner that controls spreading of possible contamination. Remediation can be performed by trained maintenance staff and/or qualified personnel who have proper training on cleanup methods, protection, potential hazards, and should not suffer from any respiratory problems (including asthma), allergies, or immune suppressive disorders. Post cleaning activities, a disinfectant (that has at minimum a Health Canada DIN number) should be applied in the remedial work area. All respirators worn by personnel within the remedial work area, should meet the requirements of CSA standard Z94.4-18 Selection, Use and Care of Respirators.

5.0 LIMITATIONS

In this statement of limitations, the “Client” refers to the persons or entities to whom this report is addressed. “THEM” refers to T. Harris Environmental Management Inc. The “Contract” refers to any general, or project-specific written agreement, including project-specific scope of work documents, executed between THEM and the Client pertaining to the subject matter of this report.

This report is subject to the limitations set out below and any other limitations set out in the body of this report or in the Contract between THEM and the Client.

The investigation and assessment described in this report were conducted in accordance with the Contract agreed upon by the Client in a manner consistent with a reasonable level of care and skill normally exercised by members of the occupational hygiene consulting profession currently practising under similar conditions in the Province of Ontario and observing the code of ethics of the Canadian Registration Board of Occupational Hygienists (CRBOH) and the American Board of Industrial Hygiene (ABIH).

In preparing this report, THEM has relied on information provided by others, including without limitation, information concerning the history and operation of the site, and test results and analyses of other consultants, independent laboratories, or testing services. Except as expressly stated in this report, THEM has not made any independent verification of such information. Findings cannot be extended to portions of the site, which were unavailable for direct observation.



The assessment in this report has been made in the context of regulations which were in force and effect at the time of the assessment and which are specified in this report. The assessment did not take into account any regulations, which were not in effect at the date of the assessments, or any guideline or standard not specified in this report. Regulatory standards do not exist for all materials of a potentially hazardous nature.

The collection of any samples at the site (including the location of samples and the analytical parameters applied to the samples) was undertaken in accordance with the Contract agreed upon by the Client, based upon the information provided to THEM by the Client concerning existing site conditions. Conditions between sample locations (if any) may differ from those indicated in this report.

This report is intended solely for the use or uses specified in this report and/or the Contract. Use of this report for purposes other than those set out in this report and/or the Contract will be at the sole risk of the Client.

Copying of this report except as may be reasonably required for internal use by the Client and any distribution of this report to persons other than the Client in whole or in part, is not permitted without the express written permission of THEM.

This report is for the sole use of the Client. THEM makes no representation or warranty, either expressed or implied, to any third party with regard to this report and the work referred to in this report and expressly disclaims any, and accepts no duty of care to any third party or any responsibility or liability whatsoever to any third party for any loss, expenses, damages (direct, consequential or contingent), fines, penalties, or other harm that may be suffered or incurred by any third party as a result of any use of, any reliance placed upon, or any decision made or actions taken based upon this report or the work referred to herein.

In no event shall THEM be liable for any indirect, incidental, special or consequential damages, or damages from loss of profits, revenue, or use, whether in an action in tort or contract, even if THEM has been advised of the possibility of such damages. If new information concerning the subject matter of this report arises, THEM should be contacted to re-evaluate the conclusions of this report and to provide amendments as required.

Sincerely,

T. HARRIS ENVIRONMENTAL MANAGEMENT INC.



Mould Inspection & Tape Lift Sampling
Fleming College (Frost Campus)
Classroom 413 in Natural Science Law Building

THEM# 18176

Ahmed Sherman
OH&S Technician

Raj Singh, P.Eng. MBA
Project Manager

Attachments: References
Laboratory Results




References:

1. American Industrial Hygiene Association. Recognition, Evaluation, and Control of Indoor Mould. Edited by Bradely Prezant, Donald M. Weekens, J. David Miller, 2008
2. Institute of Inspection, Cleaning and Restoration Certification, IICRC Standard for Professional Mould Remediation S520, 1st Edition, 2008
3. NYC DOH, Guidelines on Assessment and Remediation of Fungi in Indoor Environment, April 2008
4. Institute of Inspection, Cleaning and Restoration Certification, IICRC Standard and Reference Guide for Professional Water Damage Restoration S500, 3rd Ed., 2006
5. American Industrial Hygiene Association, Field Guide for the Determination of Biological Contaminants in Environmental Samples, AIHA Biosafety Committee, 2005
6. Public Works and Government Services Canada, Fungal Contamination Guidelines: Interpreting the Analysis, June 2000, Revised April 2005.
7. Environmental Abatement Council of Ontario (EACO) – Mould Abatement Guidelines Third Edition, 2015
8. Canadian Construction Association – Mould Guidelines for the Canadian Construction Industry, 2004
9. Environmental Microbiology Laboratory Inc. – Characteristics of Some Commonly Encountered Fungal Genera. Compiled By Janet Gallup and Miriam Valesco Dr. P.H., 2002-2003
10. Microorganisms In Home and Indoor Work Environments. Diversity, Health Impacts, Investigation and Control. Edited by Brian Flannigan, Robert A. Samson, J.David Miller., 2001
11. US EPA, Mold Remediation in Schools and Commercial Buildings, March 2001
12. American Conference of Governmental Industrial Hygienists, Bioaerosols Assessment and Control, 1999
13. Health Canada, Fungal Contamination in Public Buildings: A Guide to Recognition and Management, June 1995

Laboratory Analysis Report

To: **Ahmed Sherman**
T. Harris Environmental
93 Skyway Avenue, Suite 101
Toronto, Ontario
M9W 6N6

EMC LAB REPORT NUMBER: 86805
Job/Project Name: Fleming College
Job/Project No: 18176 **No. of Samples:** 1
Sample Type: Tape Lift **Date Received:** Sep 23/22
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Sep 26/22 **Date Reported:** Sep 26/22
Analyst: Fajun Chen, Ph.D., *Principal Mycologist*



Client's Sample ID	Lab Sample No.	Date Sampled	Description/Location	Mould Identified, in Rank Order	Mould Growth (overall)
1.1	369405	Sep 23/22	Window ledge, wall, classroom	<i>Cladosporium</i>	Sparse

Note:

- Mould growth is assessed as coverage on sample surface examined under microscope: sparse (S) (<5%), moderate (M) (5-25%) and abundant (A) (>25%).
- The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
- The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.
- The results are only related to the samples analyzed.