



INDOOR AIR QUALITY LABORATORY

Indoor Air Quality Analysis Report

Residential mold inspection · air & surface sampling

SAMPLE REPORT · ILLUSTRATIVE DATA

REPORT INFORMATION

REPORT ID

DA-2026-0142

SAMPLING DATE

April 14, 2026

CLIENT

Jean Tremblay

REPORT DATE

April 16, 2026

PROPERTY

1245 Rue des Érables, Laval, QC

ANALYST

B. Petit, B.Sc. (Biochemistry)



DÉTECTAIR AIR QUALITY INDEX

Your air at a glance

The DéetectAir Air Quality Index (DAQI) turns the full MycoScan™ analysis — mold spores, water-damage species, active-growth markers, airborne debris and pollen — into a single 0–100 score for each area sampled. Higher is healthier.

OVERALL RESULT

SEVERE

Action recommended

Living-room air is clean, but the basement shows a significant mold problem that warrants prompt corrective action.

TABLE 1 Air quality by area

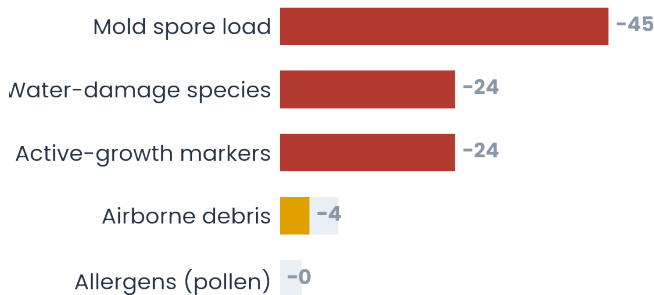
Area	Index	Rating	What it means
Living room	90 _{/100}	EXCELLENT	Clean and consistent with a healthy home. No action needed here.
Basement	10 _{/100}	SEVERE	Airborne mold well above the site threshold, with water-damage species and active growth.

FIGURE 1 Where each area falls on the index



The DAQI is an illustrative screening score developed by DéetectAir to make results easy to understand. It reflects what was airborne at the moment of sampling — not a medical diagnosis or a regulatory standard.

FIGURE 2 Score drivers — basement



Points deducted from 100. Longer bars = bigger impact on air quality.

Key findings

Basement airborne spores reached 6 090/m³ — about 1.5× the site threshold and 3× the outdoor control.

Stachybotrys and Chaetomium — classic water-damage molds — appear in basement air and on the basement wall.

Seven spore chains and abundant hyphal fragments point to active growth nearby, not just drifting spores.

Basement humidity was 67%, above the healthy 30–60% range.

Living-room air was conforming and the exterior control was normal.

WHAT WE DID & WHAT WE FOUND

Inspection summary

A mold inspection was performed on April 14, 2026 by B. Petit at 1245 Rue des Érables, Laval, QC. Three air samples and four surface samples were collected. Air was sampled at the exterior control, the living room and the basement; surface samples were taken from the basement wall, the bathroom window, the living-room carpet and the attic framing.

The inspector noted a musty odour in the basement and traces of water damage on the lower drywall of the north basement wall. The property has an attic (yes) and a crawl space (no). Air quality was **conforming** in the living room and **non-conforming** in the basement. Surface samples showed elevated mold in two locations. CO was adequate throughout; relative humidity was elevated in the basement (67%).

TABLE 2 Environmental readings

CO (INDOOR / OUTDOOR)	RELATIVE HUMIDITY	TEMPERATURE	VAPOUR-PRESSURE DEFICIT
690 / 430 ppm Adequate	44% living · 67% basement	21 °C Normal	1.2 kPa Healthy

About this inspection

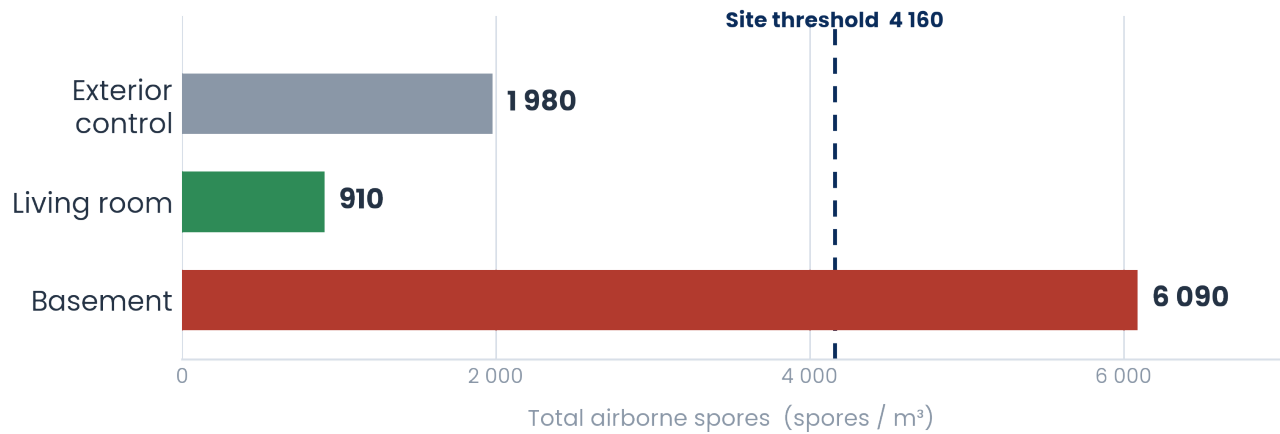
This is a basic mold screening combining a spore-trap air analysis with surface sampling, read by MycoScan™ AI and reviewed by an analyst. A spore trap is a point-in-time snapshot of what is airborne during sampling; it identifies and counts particles by morphology and does not test for specific health effects. Where growth is suspected behind finishes, a deeper investigation may be warranted.

AIR SAMPLE ANALYSIS

Results — airborne spores

Concentrations are reported in spores per cubic metre of air (spores/m³). The chart compares the total airborne load in each area against the site-specific threshold.

FIGURE 3 Total airborne spores by area



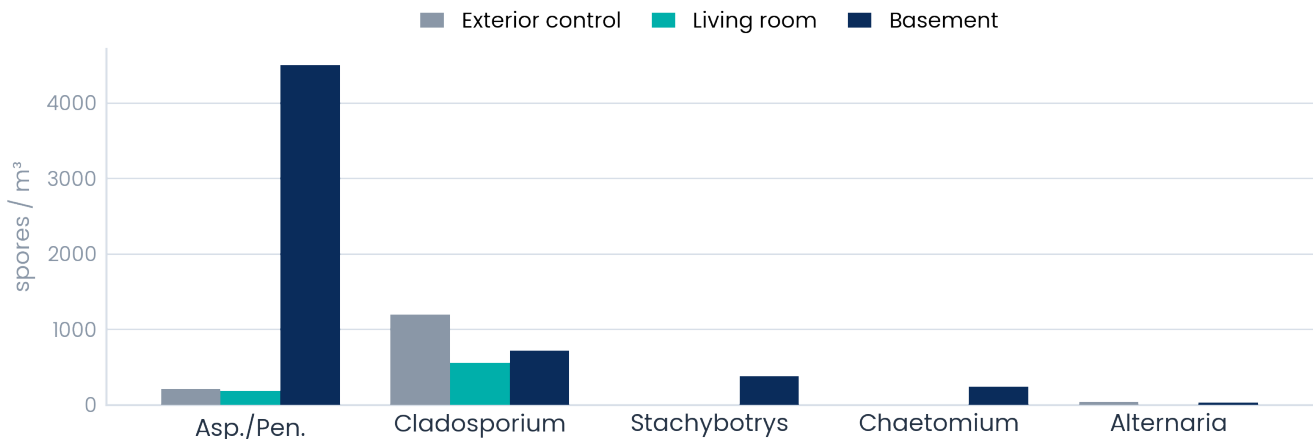
LIVING ROOM · CONFORMING

BASEMENT · NON-CONFORMING

How the threshold is set (Alberta Health Services guideline)

Indoor spore concentration should not exceed twice the outdoor level plus 200 spores/m³ — here, $2 \times 1\,980 + 200 = 4\,160$ spores/m³. The basement (6 090) greatly exceeds this, and the presence of spore chains and abundant hyphal fragments points to active fungal growth nearby.

FIGURE 4 Airborne spores by species



The basement *Aspergillus*/*Penicillium* spike, together with *Stachybotrys* and *Chaetomium* found only in the basement, is the signature of a localized water-damage problem.

TABLE 3 Full laboratory breakdown — air samples

Concentrations in spores/m³. Water-damage indicator species are highlighted; a dash (—) means not detected. * Smuts / Myxomycetes groups similar spores: smuts, rusts, periconia and myxomycetes.

Species / structure	Exterior control	Living room	Basement
EUROTIALES			
Aspergillus / Penicillium	210	180	4 500
Paecilomyces	—	—	—
CAPNODIALES			
Cladosporium	1 200	560	720
Aureobasidium	—	—	—
Cercospora	—	—	—
Polythrincium	—	—	—
TUBEUFIALES			
Helicomyces	—	—	—
HYPOCREALES			
Stachybotrys	—	—	380
Trichoderma	—	—	—
Fusarium	—	—	—
SORDARIOMYCETES			
Chaetomium	—	—	240
Diatrypaceae	—	—	—
Xylaria	—	—	—
Nigrospora	—	—	—
FRAGMENTS			
Insect fragments	Low	Low	Low
Melanized fungal fragments	—	—	Mod.
Hyphal fragments	Low	Low	High
MICROASCALES			
Scopulariopsis	—	—	—
PLEOSPORALES			
Alternaria	40	—	30
Ulocladium	—	—	—
Epicoccum	60	20	—
Pithomyces	—	—	—
Bipolaris / Drechslera	—	—	—
Stemphylium	—	—	—
Curvularia	—	—	—
LEOTIOMYCETES			
Botrytis	—	—	—
Oidium	—	—	—
ASCOSPORES			
Ascospores (various)	120	40	60
BASIDIOSPORES			
Basidiospores (various)	260	80	120
OTHER			
Smuts / Myxomycetes*	90	30	40
Pollens	Present	Trace	—
Volume sampled (L)	150	75	75
TOTAL	1980	910	6 090
Spore chains (1–10)	1	1	7
Debris level	Low	Low	Moderate

SURFACE SAMPLE ANALYSIS

Results — surface samples

Surface samples confirm whether visible or suspected growth is present on materials, and which species are involved.

TABLE 4 Surface sample results

Location	Type	Level	Types found	Notes
Basement wall	Swab	High	Stachybotrys, Chaetomium, Asp./Pen.	Visible staining; bacteria present
Bathroom window	Swab	Medium	Cladosporium, melanized hyphae	Varied pollens
Living-room carpet	Bio-Tape	Low	Aspergillus / Penicillium	Cat hair, carpet-beetle larval hairs, insect fragments
Attic framing	Bio-Tape	None	—	Wood fragments only

Reading the surface results

The basement wall returned a high level of Stachybotrys, Chaetomium and Aspergillus/Penicillium with visible staining — direct evidence of established growth. The bathroom window showed a medium level typical of condensation. The living-room carpet was low and unremarkable, and the attic framing was clean. Photo documentation of each location is included in the full client report.

THE SCIENCE BEHIND YOUR RESULTS

Understanding mold

The mold life cycle

Fungal growth is not instantaneous. Several conditions must coincide: sufficient moisture, an adequate nutrient source, and a spore landing on that medium. Spores behave like microscopic plant seeds — but because they are so small, a single droplet of condensation can be enough to germinate one, and an almost-invisible dust particle is an entire planet of nutrients.

Once a spore germinates it produces hyphae — microscopic tubes that branch in all directions to form an interconnected network called mycelium. This network secretes digestive enzymes and absorbs nutrients. When the colony is established and becomes stressed, it produces reproductive structures (often microscopic conidiophores) that release new spores.

Succession — the three waves of colonization

Primary colonizers (e.g. *Aspergillus*, *Penicillium*) need the least moisture and appear first.

Secondary colonizers (e.g. *Cladosporium*, *Alternaria*) need more moisture and benefit from enzymes released by the primaries.

Tertiary colonizers (e.g. *Chaetomium*, *Stachybotrys*, *Trichoderma*) need the most moisture, grow slowest, and signal long-standing water damage.

These categories form a spectrum — some species span more than one. Finding tertiary colonizers like those in your basement is a strong indicator of prolonged moisture, not a brief spill.

Why spore chains and hyphal fragments matter

Aspergillus, *Penicillium* and *Cladosporium* form spores in chains that can be seen under the microscope; finding them airborne suggests active growth close to the sample. Hyphal fragments are pieces of the mold 'body' — like finding root fragments in the air rather than just seeds — and are where mycotoxins are typically produced. A high level of hyphal fragments can indicate a serious problem even when few whole spores are present.

HOW YOUR NUMBERS COMPARE

Standards & guidelines

TABLE 5 Guidelines vs this inspection

Metric	Guideline	This inspection
Airborne fungal spores	No universally accepted national standard. The Alberta Health Services guideline compares indoor to outdoor: indoor should not exceed $2 \times \text{outdoor} + 200$ spores/ m^3 .	Basement 6 090 vs 4 160 threshold — exceeded.
Relative humidity	Health Canada recommends indoor RH of 30–60% (30–40% in winter to limit condensation).	Basement 67% — above range. Living 44% — OK.
Carbon dioxide (CO)	Indoor CO should not exceed outdoor by more than 700 ppm — a practical marker of adequate ventilation.	690 vs 430 (+260 ppm) — adequate.
Temperature	A comfortable indoor range is 15–25 °C.	21 °C — normal.
Vapour-pressure deficit (VPD)	No official standard; a healthy indoor range is 1.0–1.5 kPa. VPD reflects how strongly the air can dry out a room.	1.2 kPa — healthy.

A note on 'safe' spore levels — professional opinion

There is no official healthy/unhealthy airborne spore level, and sources vary. In our professional experience, levels below 1 500 spores/ m^3 are generally acceptable (barring abundant spore chains or hyphal fragments); above 3 000 becomes concerning; and 5 000–10 000+ indicates an obvious mold problem regardless of outdoor levels. Some species — notably *Stachybotrys* and *Chaetomium* — are found almost only indoors after long-standing water damage, so any airborne presence is treated seriously.

WHAT WAS FOUND & WHY IT MATTERS

Species identified in this sample

Aspergillus / Penicillium

Widespread · possible mycotoxins

A grouped category — on a spore trap these spores are optically indistinguishable. Mostly small spherical spores that form chains. Includes benign species (e.g. *Penicillium camemberti* in cheese) and others that produce mycotoxins (e.g. *Aspergillus flavus* aflatoxins). The heavy basement count with chains points to active growth.

Cladosporium

Allergen · mostly outdoor

Predominantly an outdoor mold and the most widespread of all — the “king of molds.” Some species grow indoors on condensation-prone window sills or chronically damp materials. Not a notable mycotoxin producer, but a well-known allergen.

Stachybotrys

Water-damage marker · toxic

Spores are typically “sticky,” so they rarely become airborne — their presence in air must be taken seriously and indicates significant contamination. The notorious media “black mold,” a tertiary colonizer signalling long-standing, serious water damage.

Chaetomium

Water-damage marker · hidden

Forms spores inside a shell-like, hair-covered structure (perithecium) and needs very high humidity, often hidden behind water-damaged surfaces. Can produce mycotoxins; a tertiary colonizer indicating long-standing water damage. Frequently appears in air during remediation as hidden structures are disturbed.

Alternaria

Allergen · medium-duration damp

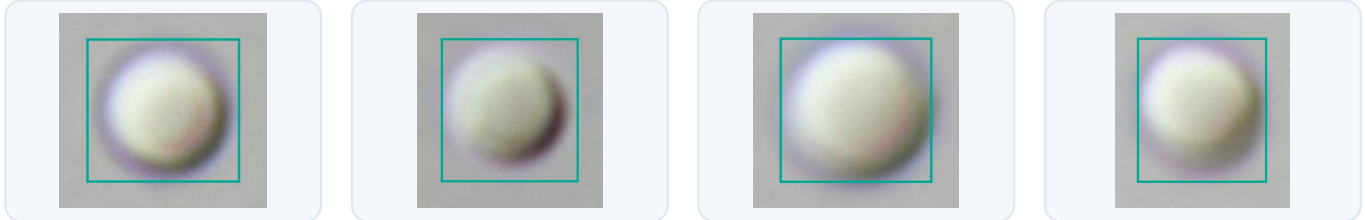
Has unusually large spores that are rarely airborne (and often desiccated when they are). A recognized allergen with mycotoxin potential; a secondary colonizer indicating medium-duration dampness.

CAPTURED & ANNOTATED BY MYCOSCAN™

Evidence of the top structures found

For the five most significant structures detected, MycoScan™ provides several example micrographs — visual proof of their presence in the sample.

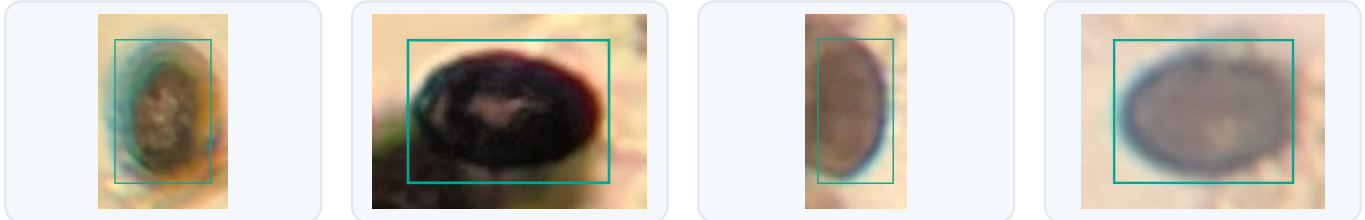
Aspergillus / Penicillium

Basement air · 4 500 spores/m³ · chains present


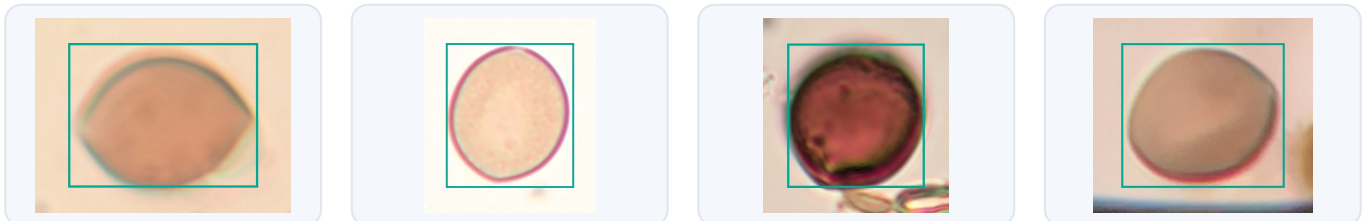
Cladosporium

All areas · up to 1 200 spores/m³


Stachybotrys

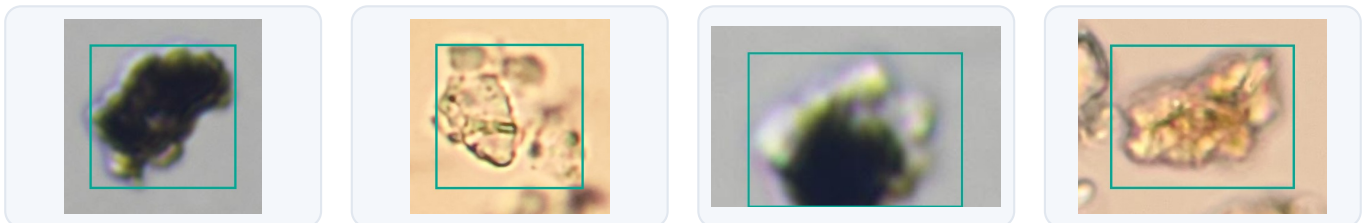
Basement · 380 spores/m³ · water-damage marker


Chaetomium

Basement · 240 spores/m³ · water-damage marker


Debris

All areas · non-biological background particulate



SUGGESTED NEXT STEPS FOR THIS PROPERTY

Recommendations

These actions are selected automatically from the recommendation library based on this property's results.

- 1 Dehumidify the affected area**
Relative humidity exceeded the acceptable 60% ceiling. Run a dehumidifier to maintain 30–60% (30–40% in winter) to remove the moisture that mold needs to grow and to prevent condensation.
- 2 Hire a professional remediation company**
Given airborne and surface contamination, hire a professional remediation company to determine the extent of the contamination and carry out an effective remediation plan.
- 3 Confirm with follow-up testing**
We strongly recommend follow-up testing once remediation is complete, to confirm effective decontamination and restored air quality.

BRINGING IT TOGETHER

Conclusion

Living-room air quality is conforming and the exterior control is normal. The basement, however, shows non-conforming air (6 090 spores/m³), elevated surface mold (Stachybotrys and Chaetomium), high humidity and visible water staining – together consistent with long-standing water damage and active fungal growth. On the DétectAir Air Quality Index this places the basement in the **Severe** band (10/100) while the living room is **Excellent** (90/100).

Prompt corrective action – moisture control, safe removal of contaminated materials and professional remediation – is recommended, followed by confirmatory testing.

Basement air-quality index



This is a sample report containing fictional, illustrative data created to demonstrate DétectAir's reporting format. Screening identifies and counts particles by morphology at the moment of sampling; it is a point-in-time snapshot and is not a medical diagnosis. The DétectAir Air Quality Index is an illustrative screening score, not a regulatory air-quality standard.