Fungal Investigation

1501 Voght Street, Merritt, B.C.
Central Elementary School

Prepared for

School District 58 (Nicola-Similkameen)
P.O. Box 4100
1550 Chapman Street
Merritt, B.C. V1K 1B8

Island EHS Project: 55160

Issue Date: February 21, 2024

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Executive Summary

Island EHS was engaged by School District 58 (Nicola-Similkameen) to carry out a fungal investigation within Central Elementary School, located at 1501 Voght Street, Merritt, B.C. This sampling

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1.0 Introduction

Island EHS was engaged by School District 58 (Nicola-Similkameen) to carry out a fungal investigation within Central Elementary School, located at 1501 Voght Street, Merritt, B.C. This sampling was conducted to address the Client's complaints of a musty-mildew odor that was presumed to be originating from the crawlspace, and prior to beginning scheduled fungal remediation work within the crawlspace. Three (3) fungal spore trap samples were collected; one (1) from the crawlspace entry hatch near the playground entrance, one (1) from the playground entrance hallway, and one (1) from the exterior playground. The building was occupied at the time of the sampling on February 16, 2024.

2.0 Site History and Description

The subject building was owned and occupied by School District 58 and operated as a public elementary school since the 1960s when it was originally constructed. The building was wood framed with a concrete crawlspace. The exterior was finished with stucco, wood, brick and mortar. Interior finishes within the hallway sampling area included ceiling tile, drywall and sheet flooring. The crawlspace was presumed to be a confined space and was not accessed; visual observations were conducted from the entry hatch only. Poly sheeting with vapour barrier placed over top was observed on the floor of the crawlspace. The poly sheeting was taped to the wall with tuck tape. Wood boards were observed lying on top of the poly and vapour sheets. The walls were partially spray-foamed with some exposed brick and mortar. Synthetic fibre insulation was observed between wood floor joists on the ceiling.

The building was impacted by a large-scale flood event in November 2021 and was temporarily closed until September 2022, while flood restoration work and repairs were conducted. During the flood event, mud, water, and debris reportedly filled the crawlspace. Repeated fungal remediation efforts have been conducted in the crawlspace following the original flood remediation work (dates unknown); however, a re-occurring musty-mildew odor has been reported by occupants and school district employees. The Client reported several water incursion events seeping up from the floor of the crawlspace since the original flood.

3.0 Background

Mould is prevalent throughout our environment. It occurs naturally with mould spores being present everywhere. Mould is nature's way of breaking down and recycling materials. Mould spores require moisture and a food source to begin growing. Water leaks (even very minor leaks) and moisture accumulation are usually sufficient for mould to begin growing.

There are no special waste disposal requirements for mould waste.

3.1 Airborne Fungal Spore Trap Sampling

Fungi are plant-like but lack chlorophyll. Each fungal "colony" is a mass of interwoven mycelium, made up of millions of tiny branching filaments, known as hyphae. The group sour92

During this process, the hyphal strands absorb water, become activated and begin to multiply. Eventually flowering bodies form and release spores to the environment.

7.0 Limitations

The following limitations apply to this investigation:

1. **Non-destructive testing and assessment methods were used.**

2. Evaluations methodologies applied are only able to give a “snapshot” of fungal activities based on conditions at the time and date of this investigation.

8.0 Closure

This report has been prepared in accordance with established Industrial Hygiene and Mycological practices. It is intended for the exclusive use of the client to assist in complying with the current accepted industry guidelines for the assessment of air quality in indoor environments. The use of this document for any other purposes is at the sole risk of the user.

Appendix 1

Photographs

Photo:	1
Sample:	55160-ST1
Location:	Playground Entrance - Hall
Description:	Fungal Spore Trap Sample

Photo:	2
Sample:	55160-ST3
Location:	Crawlspace Entry Hatch ï Hall
Description:	Fungal Spore Trap Sample

Appendix 2

Airborne Fungal Spore Trap Sample Laboratory Results

Airborne Mould Sample Report

Project #: 55160
Client: School District 58

Sampled by: JF

201 – 990 Hillside Avenue

Airborne Mould Sample Report

Project #: 55160
Client: School District 58
Site: Central Elementary School

Sampled by: JF
Date Sampled: 16-Feb-2024
Analyst: JLH

201 – 990 Hillside Avenue
Victoria, B.C. V8T 2A1
778-406-0933
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Samples received in good condition.
Analyzed according to ASTM D7391-20.

Appendix 3

Additional Information

Fungi

Background

Fungi are plant-like but lack chlorophyll. Each fungal “colony” is a mass of interwoven mycelium, made up of millions of tiny branching filaments, known as hyphae. The group includes many familiar types such as the mushrooms, toadstools, puffballs, bracke

Some fungi can be quite pathogenic (cause systemic illness in people), including , , , and . At least three species of (and) can be included in this group, however, most others (there are between 100 and 200 species of) are relatively benign. People with compromised immune systems are at the greatest risk for fungal infections.

Repeated inhalation and sensitization to a wide variety of organic material, including fungi, can cause hypersensitivity pneumonitis (HP), a lung disease, in a small percentage of exposed people. Additional health effects caused by fungi may include aggravation of pre-existing asthma, sinusitis, histoplasmosis and rhinitis.

Other substances produced by fungi, besides spores, can also cause health problems. These include mycotoxins (substances produced by fungi which may interfere with the growth of other fungi or bacteria) and Volatile Organic Compounds (VOC's – responsible for the musty odour characteristic of fungi). Note however, that health effects associated with mycotoxins are typically associated with only very high exposures that are likely only to occur during the consumption of fungal contaminated food or during high risk activities, such as fungal remediation.

References

American Academy of Allergy, Asthma and Immunology (AAAAI), National Allergy Bureau Scale for Mold Spores and Tree, Weed and Grass Pollen. National Allergy Bureau.

Assessment,