INDOOR AIR QUALITY SURVEY

PROJECT LOCATION:
Rockhill Elementary School
510 Meadow Street
Rockhill Furnace, Pennsylvania 17249

PROJECT DATE:
June 11, 2019

PREPARED FOR:
Mr. Stanley Hall, Jr.
Maintenance Supervisor
Southern Huntingdon County School District
10339 Pogue Road
Three Springs, Pennsylvania 17264-9730

CALI PROJECT NUMBER:
19-1049-001

REPORT DATE:
June 13, 2019

SURVEY PERFORMED BY/REPORT REVIEWED BY:

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Executive Summary:

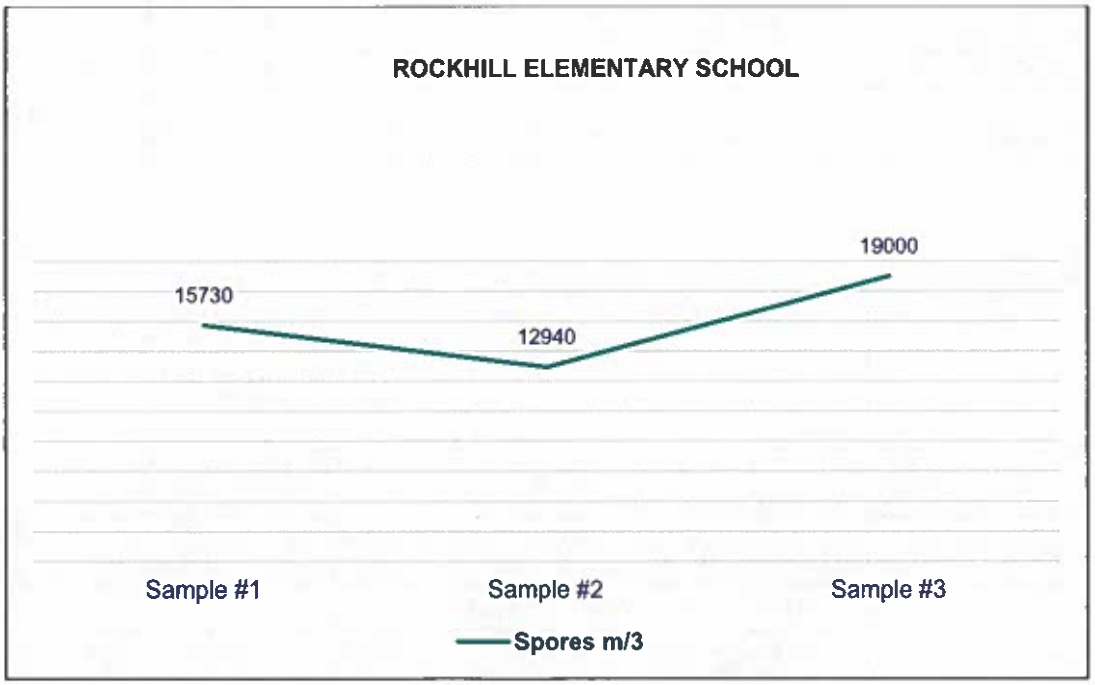
In June of 2019, Cumberland Analytical Laboratories, Inc. (CALI) was contracted by the Southern Huntingdon County School District to perform an Indoor Air Quality Survey at the Rockhill Elementary School. This survey consisted of the collection of air samples for airborne fungal contaminants.

Unusual Mold Explanations and Survey Results:

The results of the Non-Viable Spore Trap Samples collected showed that **NO** unusual mold condition exists in the samples. Please refer to the individual sample results as listed in the Non-Viable Spore Trap Results Table for more detailed information regarding this individual sample result.

Sample No.	Sample Location	Sample Type	Unusual Mold Conditions Exist
01	Nurse's Office	Mold Air	No
02	Main Office	Mold Air	No
03	Outside	Mold Air	N/A

Non-Viable Mold Spore Trap Samples IAQ Chart:



Test Results: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391):

Lab Sample Number:	371913041-0001			371913041-0002			371913041-0003	
Client Sample ID:	01			02			03	
Volume (L):	75			75			75	
Sample Location:	Nurse's Office			Main Office			Outside	
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**
Ascospores	84	3400	21.6	80	3300	25.5	103	4200
Basidiospores	250	10200	64.8	182	7430	57.4	295	12000
Cladosporium	49	2000	12.7	54	2200	17	64	2600
Epicoccum	-	-	-	1*	10*	0.1	-	-
Ganoderma	1	40	0.3	-	-	-	2	80
Myxomycetes++	-	-	-	-	-	-	1	40
Pithomyces++	1*	10*	0.1	-	-	-	-	-
Unidentifiable Spores	2	80	0.5	-	-	-	2	80
Total Fungi	387	**15730**	100	317	**12940**	100	467	**19000**
Insect Fragment	-	-	-	1	40	-	-	-
Pollen	-	-	-	1*	10*	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*
Skin Fragments (1-4)	-	1	-	-	1	-	-	1
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1
Background (1-5)	-	1	-	-	2	-	-	1

Mold Definitions:

Spore Name	Description
Ascospores	Considered an allergen, ascospores produce toxins, which can pose a series of health issues for humans if exposed to for long periods of time. Ascospores are a type of mold that typically develops during the winter on fallen, dead leaves that were previously infested. When it rains, it triggers the release spores in the air. You can find this type of mold practically anywhere, but indoors it will start growing on moist materials.
Basidiospores	Reported to be allergenic. These spores are produced by mushrooms and are difficult to identify down to species level.
Cladosporium Spores	Reported to be allergenic. Most commonly identified spore in outdoor samples. Highly seasonal. Indoor species may differ from outdoor species. Typically found inside supply ducts.
Curvularia Spores	No additional health data for this genus is available at this time.
Epicoccum Spores	Reported to be allergenic. Commonly found on plants, textiles and products made of paper.
Ganoderma	Ganoderma is a genus of polypore fungi in the family Ganodermataceae that includes about 80 species, many from tropical regions. Because of their genetic diversity, use in traditional Asian medicines, and potential in bioremediation, they are an important genus economically. Ganoderma can be differentiated from other polypore's because they have a double-walled basidiospore. They are sometimes called shelf mushrooms or bracket fungi.
Myxomycetes	Reported to be allergenic. This class of fungal spores is most often related to agriculture and plant disease and is rarely found indoors.
Pithomyces Spores	Reported to be allergenic. Some species may, in rare instances, produce the toxin sporidesmin.

Recommendations:

No further testing is warranted at this time.

Methods and Analysis – Air Sampling:

Particle air sampling techniques were used. Air samples were collected using a calibrated high volume-sampling pump and Allergenco D Cassettes. Sample analysis provided by Environmental Hazard Services, located in Richmond, Virginia.

The samples were packaged for proper shipment and delivered to EMSL Analytical, Inc. Industrial Hygiene Association (AIHA) accredited laboratory located out of Cinnaminson, New Jersey. While the results and information of this analysis are considered to be reliable, CALI assumes no responsibility for the accuracy of these results.

Standards – Bacterial/Mold:

There are no current Permissible Exposure Levels or Safe Levels established by OSHA or NIOSH. EPA has guidelines on mold remediation in schools, yet no clearance levels have been established. Molds are a major source of indoor allergens. Molds can also trigger asthma. Even when dead or unable to grow, mold can cause health effects such as allergic reactions. The types and severity of health effects associated with exposure to mold depend, in part, on the type of mold present and the extent of the occupants' exposure and existing sensitivities or allergies. Prompt and effective remediation of moisture problems is essential to minimize potential mold exposures and their potential health effects.

Statistically, total spore counts are always significantly correlated with counts conducted on Agar Plate samples. On average, total mold spore to culturable mold ratios are in the range of 10:1. A concentration dominated by one genus such as Penicillium or Aspergillus even at 14,000 Particles/m^3 is unacceptable. Total levels should not exceed 2,000 Particles/m^{30}, and each individual count should not exceed 650 Particles/m^3. For remediation, a reduction of airborne spores based upon Pre and Post sampling, compared to exterior sample results, and no evidence of mold growth present is the goal.