INDOOR AIR QUALITY ASSESSMENT REPORT

NORTH HALLWAY & ASSOCIATED CLASSROOMS
COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181
THE LANE ELEMENTARY SCHOOL
500 NORTH ELM STREET
HINSDALE, ILLINOIS
IES NO. 915-27

INTEGRITY
ENVIRONMENTAL SERVICES, INC.

1240 IROQUOIS DRIVE
SUITE 102
NAPERVILLE, IL 60563

630-718-9133
FAX 630-718-9114

August 23, 2016

C-12259

Mr. Mike Duggan
Director of Facilities
Community Consolidated School District 181
115 West 55th Street
Clarendon Hills, Illinois 60514

Dear Mike:

Focused Indoor Air Quality Assessment
North Hallway and Associated Classrooms
Community Consolidated School District 181
The Lane Elementary School
500 North Elm Street
Hinsdale, Illinois
IES No. 915-27

Integrity Environmental Services, Inc. has completed this Focused Indoor Air Quality Assessment Report for the above referenced School District facility. One (1) original and one (1) copy of the Report have been provided.

This Report has been prepared based on observations made and sample data collected during our July-August, 2017 investigation. Opinions made or formed, other than those expressed herein are those of the reader and in no way, shall obligate Integrity Environmental Services, Inc. The findings presented in this Report are representative of the date and times that the samples were collected. The findings presented herein should not be used or relied upon to evaluate the air quality measurements obtained at significantly later dates.

As always, if you have any questions, please feel free to contact our office at (630) 718-9133.

INTEGRITY ENVIRONMENTAL SERVICES, INC.

Guy S. Tawzer
Vice President, Air Quality Division

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NORTH HALLWAY & ASSOCIATED CLASSROOMS
COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181
THE LANE ELEMENTARY SCHOOL
500 NORTH ELM STREET
HINSDALE, ILLINOIS
IES NO. 915-27

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SECTION 1

EXECUTIVE SUMMARY

INDOOR AIR QUALITY ASSESSMENT REPORT
NORTH HALLWAY & ASSOCIATED CLASSROOMS
COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181
THE LANE ELEMENTARY SCHOOL
500 NORTH ELM STREET
HINSDALE, ILLINOIS
IES NO. 915-27

A. INTRODUCTION:

The following paragraphs provide a narrative description of a focused indoor air quality (IAQ) assessment conducted for Community Consolidated School District 181 within the above referenced facility.

At the request of the School District, Integrity Environmental Services, Inc. (IES) was initially present at The Lane Elementary School on Monday, July 24, 2017 to assess drywall located within the north hallway and associated classrooms that were impacted by a water leak that occurred within the school building at some time between 8:30 a.m. Sunday, July 23, 2017 and 5:00 a.m. Monday, July 24, 2017. The initial assessment was conducted to determine to what extent the leaking water had on the drywall located within the subject hallway and classrooms. Additional assessment of the water-impacted area within the school building was conducted by an IES representative following the removal of wet drywall. The IES representative returned a third time to collect and document concentrations of airborne mold spores following the replacement and repainting of all water-impacted drywall.

As part of our continued investigation, a visual inspection of the water-impacted areas within the building, was conducted. During this inspection, the IES representative noted the conditions within the subject portion of the school building and spoke with District personnel regarding any air quality issues raised by District maintenance and staff members within the building.

Following replacement and repainting of the drywall, and the development of a sample collection strategy, the IES representative conducted airborne mold spore sample collection. A more detailed description of the IAQ monitoring process is provided in the sample strategy section of this report.

IES conducted the site inspection and the airborne mold spore sample collection procedures during Summer working hours while School District maintenance personnel and a limited number of faculty members were present in the building. All drywall removal, replacement and air sample collection was conducted prior to the start of the school year. In all areas where samples were collected, with a couple of exceptions, the windows and doors were closed, and the building's HVAC system was operational.

B. INSPECTION SUMMARY:

Upon arrival to the School Building on the afternoon of July 24, 2017, the IES representative was informed that the water leak originated within the girls' restroom located near the north end of the school's north-south hallway. All water was reported to be clean water. Upon discovery early morning on July 24, the water leak was stopped and all standing water was evacuated by School District maintenance personnel, using wet vacuums and mops. The impacted areas within the School Building include the hallway between the north exit door and the MRC, Classrooms/Rooms 12, 13, 15, 16, 17, 23 and 24. The MRC and its carpeted floor was not impacted by the water leak.

Testing the moisture content of the drywall with the use of a moisture meter, in each area/room impacted by the water was conducted together by the IES representative and School District maintenance personnel. Moisture meter readings indicated that drywall in each area impacted by the water leak was wet and would need to be removed to an approximate height of two feet (2') above the floor. While mold was not present on the finish side of the drywall in any of the impacted areas, additional assessment could not be made until the wet drywall was removed, allowing access to the unfinished side of the drywall and to the interstitial wall space.

Removal and disposal of the wet drywall and associated wet fiberglass insulation was initiated on July 25, 2017. The IES representative directed the School District personnel to isolate the work area with plastic sheeting, shut down the HVAC system within the affected area, and to carefully remove, contain and dispose of any wet and/or mold-impacted drywall as general debris.

During removal of the drywall and insulation, School District maintenance personnel reported the presence of mold on various sections of drywall. Most of the mold observed was removed along with the removed portions of water-impacted drywall. Some of the water-impacted drywall could not be removed due to the presence of cabinets and case work that were attached to the wall. Any remaining drywall was initially dried using portable fans aimed at the drywall and run continuously for days. Once dry, if any mold was observed, the drywall was disinfected using a bleach and water solution, dried again, and then painted with an antimicrobial coating to inhibit future mold growth.

Following the removal and or disinfection of all water-impacted drywall within the subject area of the school building, new insulation and drywall were installed, finished and painted in preparation for the return of students and staff. A representative of IES returned to the school building on August 14, 2017 to visually inspect the area, to collect samples for the presence of airborne mold spores, and to assess the remediation and repair efforts of the School District. On August 14, 2017, the weather was partly sunny, breezy and warm.

C. SAMPLING STRATEGY:

The sampling protocols for this project were developed in conjunction with existing guidelines and recommendations presented by the American Conference of Governmental Industrial Hygienists (ACGIH), the American Industrial Hygiene Association (AIHA), and Environmental Microbiology Laboratories, Inc. (EMLab), a nationally recognized, AIHA proficiency-tested laboratory specializing in microbial testing. In conjunction with our Air Quality Division, guidelines suggested by the Indoor Air Quality Association (IAQA) and Mycotech Biological, Inc. (MBI) were utilized in helping determine and interpret sample data.

It should be noted that currently, there are no regulatory requirements governing the testing strategies and interpretation of sample data. Our sampling strategy has included the incorporation of current guidelines and recommendations, as well as state-of-the-art methodologies to help define the levels of mold and related airborne bioaerosols in the subject areas located within the Community Consolidated School District 181's The Lane Elementary School. IES collected a representative sample within each sample location.

An air sample was collected in each room/hallway impacted by the water leak, as well as a couple of randomly selected areas that were not affected by the leak. At each area air sample location, the IES representative collected a sample for mold spores using a particulate sampling cassette known as an "Allergenco-D" Disposable Air Sampling Cassette. The duration of each of the mold spore air samples was five (5) minutes at each sample location. A separate area air sample was collected for mold spores outside the facility as a baseline or background sample.

Following the collection event, all samples were relinquished to STAT Analysis Corporation, located in Chicago, Illinois for analysis. A total of fourteen (14) area air samples were collected for mold spores (including the required QA/QC blank). All sample locations are illustrated in Section 2, Exhibit A of this report.

D. DATA SUMMARY:

Mold spores were found on all the thirteen (13) air samples collected during this investigation. Results of the air sample analysis show that eight (8) types of mold spores were found on the collected air samples. Ascospores and spores from the genus *Cladosporium sp.*, Rusts, and a group including Smuts and spores from the genus *Myxomycetes sp.* were found on various air samples, collected both inside and outside of the building. Spores from a group including the genera *Oidium sp.* and *Erysiphe sp.*, spores from the genus *Cladosporium sp.*, Rusts, and a group including Smuts and spores from the genus *Myxomycetes sp.* were only found on air samples collected inside of the building. Spores from the genus *Alternaria sp.* and the genus *Epicoccum sp.* were found exclusively on the air sample collected outside of the building.

All reported mold spore concentrations ranged from "low" to "moderate". All interior airborne sample concentrations of mold spores found both inside and outside of the building were near equal to or less than their corresponding exterior airborne sample concentrations. All airborne sample concentrations of mold spores were reported however, to be well below the Mycotech Biological, Inc. guidelines of 650 spores per cubic meter of air (spores/m^3) for individual spore concentrations, and 2,000 spores/m^3 for total spore concentrations.

Although elevated mold spore concentrations were not detected during the subject sampling event and the general population will likely not be affected by the reported mold spore sample concentrations, persons who are sensitive and/or allergic to molds may still experience some discomfort.

Refer to Section 2, Exhibit A for illustrations of the sample locations. Refer to Section 2, Exhibit B for Laboratory Analytical Results. Refer to Section 3, Definitions, for additional information regarding the types of mold spores mentioned above.

E. CONCLUSIONS:

Based on our inspection, sample collection work, and laboratory analysis, IES has made the following conclusions:

- All water-impacted drywall was either removed or dried and disinfected before replacement and restoration activities were initiated.
- All visible mold that was identified during the replacement and restoration of all water-impacted drywall was either removed or disinfected and painted with an antimicrobial coating to inhibit future mold growth.
- The collected concentrations of mold spores, both interior and exterior, are considered to be at low to moderate levels for the general population.
- The reported interior concentrations of airborne mold spores do not indicate the likelihood of an interior source. Several of the types of mold identified are plant pathogens or are associated with dead and decaying plants.
- A visual inspection conducted by the IES representative, along with the results of the laboratory analysis of the collected air samples, at this time, do not indicate the existence of a mold problem within the sampled areas of the school building.

F. RECOMMENDATIONS:

While laboratory results do not indicate an immediate airborne microbial air quality concern, IES recommends that the following actions be taken to minimize or eliminate any microbial presence within Community Consolidated School District 181's The Lane Elementary School building:

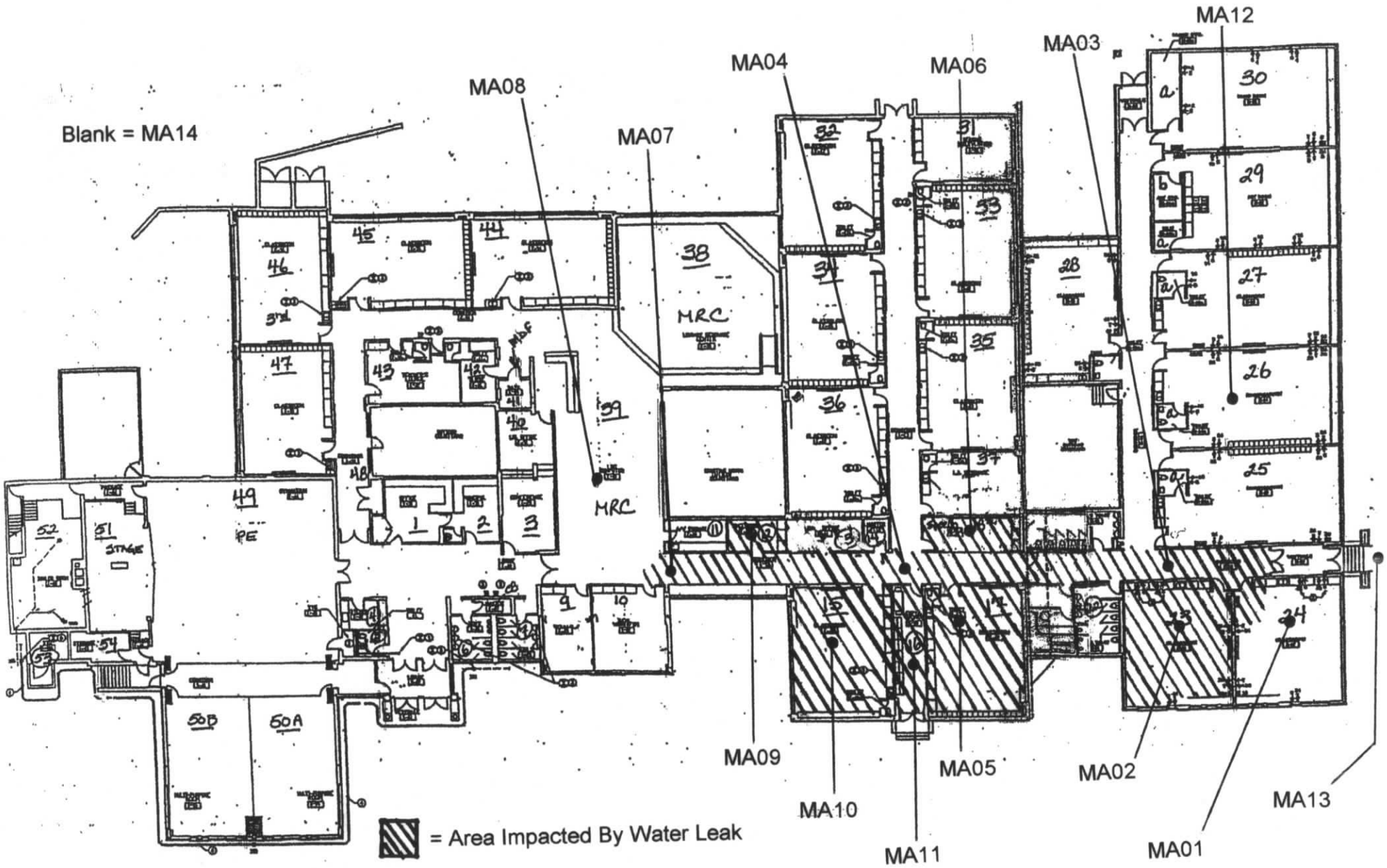
1. Continue to be pro-active with the investigation and elimination (if necessary) of any air quality concerns or reported suspect mold-like material.
2. Any surfaces found to be water damaged or showing visible mold growth should be addressed by cleaning and disinfecting. Minimal disturbance of the contaminated surface during any cleaning or disinfecting work is necessary to prevent introduction of additional microorganisms into the air.

3. All carpeting within the school should continue to be routinely vacuumed and cleaned. The use of HEPA vacuums is recommended.

4. Continue to maintain all HVAC systems on a regular and periodic schedule, including the routine inspection and cleaning of the systems, and the replacement of system air filters.

SECTION 2

EXHIBIT A



INTEGRITY
ENVIRONMENTAL SERVICES, INC.
1240 IROQUOIS DRIVE, SUITE 102
NAPERVILLE, ILLINOIS 60563
(630) 7189133
(630) 7189114 (FAX)

PROJECT: THE LANE ELEMENTARY SCHOOL
500 NORTH ELM STREET
HINSDALE, ILLINOIS

OWNER: COMMUNITY CONSOLIDATED SCHOOL DIST. 181
115 WEST 55TH STREET
CLARENDON HILLS, ILLINOIS

DRAWN BY: GT
DATE: 08/23/17

IES NO.: 915-27

NORTH

IAQ SAMPLE LOCATION DIAGRAM

EXHIBIT B

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

August 17, 2017

Integrity Environmental Services, Inc.
1240 Iroquois Drive
Naperville, IL 60563

Telephone: (630) 718-9133
Fax: (630) 718-9114

Analytical Report for STAT Work Order: 17080546 Revision 0

RE: 915-27, The Lane School, Classrooms & North Hallway

Dear Guy Tawzer:

STAT Analysis received 14 samples for the referenced project on 8/15/2017 12:07:00 PM. The analytical results are presented in the following report.

Enclosed are the analytical results for the above referenced project. The samples were analyzed as per the enclosed chain of custody.

All analyses were performed in accordance with established microbiology methodology. All Quality Control criteria as specified in the methods have been met. QA/QC documentation and raw data will remain on file for future reference. Sample acceptance criteria has been met unless noted in the Case Narrative or Sample Receipt Checklist. If required, an estimate of uncertainty for the analyses can be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions about the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Albio Marquez
Senior Microscopist

STAT Analysis Corporation:
2242 West Harrison St., Suite 200, Chicago, Illinois 60612-3766
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

Analytical Report for Microbiological Analysis - Fungal Spores in Air

Client: Integrity Environmental Serv Inc
Project ID: 915-27, The Lane School, Classroom & North Hallway
STAT Project No.: 17050546

Date/Time Received:
Date Analyzed:
Analyzed By:
QC By:

Client Sample No.:	MA01				MA02				MA03				MA04			
Sample Description:	Rm 24				Rm 23				Hall by Rm 23				Hall by Rm 16			
Date Sampled:	8/14/2017				8/14/2017				8/14/2017				8/14/2017			
STAT Sample No.:	17080546-001				17080546-002				17080546-003				17080546-004			
Volume (m^3):	0.075				0.075				0.075				0.075			
	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%
Total Fungal Spores:	6	80	13	100	5	67	13	100	1	13	13	100	1	13	13	100
Alternaria																
Ascospores																
Aspergillus/Penicillium																
Basidiospores																
Botrytis																
Cercospora																
Chaetomium																
Cladosporium																
Curvularia																
Drechslera/Bipolaris																
Epicoccum																
Fusarium																
Nigrospora																
Oidium/Erysiphe																
Periconia																
Phoma																
Pithomyces	1	13		16.7	5	67		100.0	1	13		100.0	1	13		100.0
Pleospora																
Polythrincium																
Rhizopus/Mucor																
Rusts	1	13		16.7												
Smuts/Myxomycetes	4	53		66.7												
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Unidentified Fungi																
Other																
Mycelial Fragments																
Debris Level	Moderate				Moderate				Moderate				Moderate			
Organic Material	Present				Present				Present				Present			

DL - Detection Limit = Spores/m^3

SOP 6110

STAT Analysis Corporation:
2242 West Harrison St., Suite 200, Chicago, Illinois 60612-3766
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

Analytical Report for Microbiological Analysis - Fungal Spores in Air

Client: Integrity Environmental Serv Inc
Project ID: 915-27, The Lane School, Classroom & North Hallway
STAT Project No.: 17050546

Date/Time Received:
Date Analyzed:
Analyzed By:
QC By:

Client Sample No.:	MA05				MA06				MA07				MA08			
Sample Description:	Rm 17				Rm 18				Hall by MRC				MRC			
Date Sampled:	8/14/2017				8/14/2017				8/14/2017				8/14/2017			
STAT Sample No.:	17080546-005				17080546-006				17080546-007				17080546-008			
Volume (m^3):	0.075				0.075				0.075				0.075			
	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%
Total Fungal Spores:	3	40	13	100	3	40	13	100	10	133	13	100	14	187	13	100
Alternaria																
Ascospores					1	13		33.3	1	13		10.0	2	27		14.3
Aspergillus/Penicillium																
Basidiospores																
Botrytis																
Cercospora																
Chaetomium																
Cladosporium													3	40		21.4
Curvularia																
Drechslera/Bipolaris																
Epicoccum																
Fusarium																
Nigrospora																
Oidium/Erysiphe																
Periconia																
Phoma																
Pithomyces													1	13		7.1
Pleospora																
Polythrincium																
Rhizopus/Mucor																
Rusts													1	13		7.1
Smuts/Myxomycetes	3	40		100.0	2	27		66.7	9	120		90.0	7	93		50.0
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Unidentified Fungi																
Other																
Mycelial Fragments																
Debris Level	Moderate				Moderate				Moderate				Moderate			
Organic Material	Present				Present				Present				Present			

DL - Detection Limit = Spores/m^3

SOP 6110

STAT Analysis Corporation:
2242 West Harrison St., Suite 200, Chicago, Illinois 60612-3766
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

Analytical Report for Microbiological Analysis - Fungal Spores in Air

Client: Integrity Environmental Serv Inc
Project ID: 915-27, The Lane School, Classroom & North Hallway
STAT Project No.: 17050546

Date/Time Received:
Date Analyzed:
Analyzed By:
QC By:

Client Sample No.:	MA09				MA10				MA11				MA12			
Sample Description:	Rm 12				Rm 15				Rm 16				Rm 26			
Date Sampled:	8/14/2017				8/14/2017				8/14/2017				8/14/2017			
STAT Sample No.:	17080546-009				17080546-010				17080546-011				17080546-012			
Volume (m^3):	0.075				0.075				0.075				0.075			
	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%
Total Fungal Spores:	12	160	13	100	7	93	13	100	1	13	13	100	2	27	13	100
Alternaria																
Ascospores	1	13		8.3												
Aspergillus/Penicillium																
Basidiospores																
Botrytis																
Cercospora																
Chaetomium																
Cladosporium																
Curvularia																
Drechslera/Bipolaris																
Epicoccum																
Fusarium																
Nigrospora																
Oidium/Erysiphe					2	27		28.6								
Periconia																
Phoma																
Pithomyces																
Pleospora																
Polythrincium																
Rhizopus/Mucor																
Rusts	1	13		8.3												
Smuts/Myxomycetes	10	133		83.3	5	67		71.4	1	13		100.0	2	27		100.0
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Unidentified Fungi																
Other																
Mycelial Fragments																
Debris Level	Moderate				Moderate				Moderate				Moderate			
Organic Material	Present				Present				Present				Present			

DL - Detection Limit = Spores/m^3

SOP 6110

STAT Analysis Corporation:
2242 West Harrison St., Suite 200, Chicago, Illinois 60612-3766
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

Analytical Report for Microbiological Analysis - Fungal Spores in Air

Client: Integrity Environmental Serv Inc
Project ID: 915-27, The Lane School, Classroom & North Hallway
STAT Project No.: 17050546

Date/Time Received:
Date Analyzed:
Analyzed By:
QC By:

Client Sample No.:	MA13				MA14											
Sample Description:	Bldg Ext				Blank											
Date Sampled:	8/14/2017				8/14/2017											
STAT Sample No.:	17080546-013				17080546-014											
Volume (m^3):	0.075				N/A											
	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%	Total Count	Count/ m^3	DL	%
Total Fungal Spores:	35	467	13	100	0			100				100				
Alternaria	1	13		2.9												
Ascospores	4	53		11.4												
Aspergillus/Penicillium																
Basidiospores																
Botrytis																
Cercospora																
Chaetomium																
Cladosporium	17	227		48.6												
Curvularia																
Drechslera/Bipolaris																
Epicoccum	3	40		8.6												
Fusarium																
Nigrospora																
Oidium/Erysiphe																
Periconia																
Phoma																
Pithomyces																
Pleospora																
Polythrincium																
Rhizopus/Mucor																
Rusts	1	13		2.9												
Smuts/Myxomycetes	9	120		25.7												
Stachybotrys																
Stemphylium																
Torula																
Ulocladium																
Unidentified Fungi																
Other																
Mycelial Fragments																
Debris Level	Moderate				Absent											
Organic Material	Present				Absent											

DL - Detection Limit = Spores/m^3

SOP 6110

STAT Analysis Corporation
2242 West Harrison Street, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STATAnalysis.com

MICROBIOLOGY CHAIN OF CUSTODY RECORD

Client:	Integrity Environmental Serv., Inc.
Street Address:	1240 Iroquois Ave., Ste. 102
City, State, Zip:	Naperville, IL 60563
Phone:	(630) 718-9133/Cell (708) 528-1491
Fax:	(630) 718-9114
e-mail/Alt. Fax:	ies2001@sbcglobal.net
Project Number:	915-27
Project Name:	The Lane School
Project Location:	Classrooms & North Hallway
Project Manager:	Guy Tawzer
P.O. Number:	915-27

Office Use Only Below:

Work Order No.: 1705054b
Samples Acceptable: Yes: ☒ No: ☐
Analyzed By: [illegible] 8/17/17
Date/Time:
Data File:
QC By:
Reported By (Initial/Date/Time):
Verbal:
Fax/e-mail:

Turn Around Time: <1 ☐ 1 ☐ 2 ☐ 3 ☒ Viable: 6-10 ☐
Other TAT: Date Due: Time Due:
Relinquished by: Date/Time: 8-14-17/17:50
Received by: 12822 4272 4UPS 0396 84 Date/Time: 4UPS
Relinquished by: UPS Date/Time:
Received for lab by: Minta Oku Date/Time: 8/16/17 12:07
Relinquished by: Date/Time:
Received by: Date/Time:

Client Sample Number/Description:	Date Taken	Time Taken	Volume (Liters)	Area Wiped (Units)^2	Laboratory Sample No.	Non-Viable:	Air Cassette	Direct Exam-Tape	Direct Exam-Swab	Direct Exam-Bulk		Viable:	Air Impact	Swab	Bulk		Other:
MA01/Rm. 24	8-14-17	14:10	75		001		X										
MA02/Rm. 23		14:17			002												
MA03/Hall/Rm. 23		14:25			003												
MA04/Hall/Rm. 16		14:31			004												
MA05/Rm. 17		14:37			005												
MA06/Rm. 18		14:45			006												
MA07/Hall/MRC		14:52			007												
MA08/MRC		15:00			008												
MA09/Rm. 12		15:07			009												
MA10/Rm. 15		15:14			010												
MA11/Rm. 16		15:20			011												
MA12/Rm. 26		15:28			012												

Comments: I.E. 5

STAT Analysis Corporation
2242 West Harrison Street, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STATAnalysis.com

MICROBIOLOGY CHAIN OF CUSTODY RECORD

Client:	Integrity Environmental Serv., Inc.
Street Address:	1240 Iroquois Ave., Ste. 102
City, State, Zip:	Naperville, IL 60563
Phone:	(630) 718-9133/Cell (708) 528-1491
Fax:	(630) 718-9114
e-mail/Alt. Fax:	ies2001@sbcglobal.net
Project Number:	915-27
Project Name:	The Lane School
Project Location:	Classrooms & North Hallway
Project Manager:	Guy Tawzer
P.O. Number:	915-27

Office Use Only Below:

Work Order No.: 17080546
Samples Acceptable: Yes: ☒ No: ☐
Analyzed By: GT 8/17/17
Date/Time:
Data File:
QC By:
Reported By (Initial/Date/Time):
Verbal:
Fax/e-mail:

Turn Around Time: <1 ☐ 1 ☐ 2 ☐ 3 ☒ Viable: 6-10 ☐
Other TAT: Date Due: Time Due:

Relinquished by:		Date/Time: 8-14-17/17:00
Received by:	UPS	Date/Time:
Relinquished by:	UPS	Date/Time:
Received for lab by:	Maritza Rivera	Date/Time: 8/15/17 12:07
Relinquished by:		Date/Time:
Received by:		Date/Time:

Client Sample Number/Description:	Date Taken	Time Taken	Volume (Liters)	Area Wiped (Units)^2	Laboratory Sample No.	Non-Viable:	Air Cassette	Direct Exam-Tape	Direct Exam-Swab	Direct Exam-Bulk		Viable:	Air Impact	Swab	Bulk		Other:
MA13/Blk. Ext.	8-14-17	15:38	75		013		X										
MA14/Blank	↓	—	0		014		X										

Comments:

SECTION 3

DEFINITIONS

MOLD FUNGI AND SPORES –

An estimated 100,000 species of fungi are known to exist. Fungi may be single celled or multi-cellular. Various organisms such as yeasts, mushrooms, morels, truffles, and molds are actually fungi. Fungal growth is affected by moisture, temperature, and light. All humans are exposed to fungi through inhalation and ingestion, apparently, with no ill health effects. Many fungi are used as foods and sources of drugs that help fight disease. Most fungi are saprophytic, feeding on dead and decaying organic matter. Some species of fungi, however, are known to cause infectious diseases in humans. In most cases, the fungi are unable to cause disease in persons with a healthy immune system.

Three (3) types of fungal infections exist. They are defined as:

1. Systemic Infection: Caused by the inhalation of certain fungal spores. Most of these infections produce little or no symptoms.

2. Opportunistic Infection: Limited to those with impaired immunological defenses. In this situation, infection is secondary to a primary disease. Species of *Aspergillus*, *Cladosporium*, *Mucor*, *Rhizopus* and *Cryptococcus* are common opportunistic fungi.

3. Dermatophytes: A group of fungi that infect the hair, skin and nails. Direct contact with an infected individual or the sharing of items such as grooming utensils or clothes is usually how the infection is transmitted. Transmission to humans from an environmental source is rare.

Fungi produce toxic metabolites called mycotoxins. Mycotoxins are present in both spores and viable fungi. Usually, inhalation exposure of mycotoxins occurs following the disturbance of a contaminated source.

Fungi also produce volatile organic compounds (VOCs) while growing. Some of these compounds have noticeable odors that many people find offensive. It is thought that exposure to these VOCs may be generally responsible for some building-related symptoms (BRSs).

The following is a description of each genus of fungi found within Community Consolidated School District 181's The Lane Elementary School:

Alternaria sp.: Spores were found on the air sample collected outside of the school building. This fungus is very common, found both indoors and outdoors in soil, dead organic debris, foodstuffs, and textiles. This mold is a plant pathogen and is one of the main fungal causes of allergies.

Ascospores: These spores were found on air samples collected in Room 12, Room 18, the MRC (a non-water-impacted location), the hallway by the MRC, and from outside of the building. These spores were not positively identified. They are possibly from species of *Alternaria, Aspergillus, Cladosporium, or Penicillium* among others.

Cladosporium sp.: These spores were found on the air sample collected in the MRC (a non-water-impacted location) and on the air sample collected outside of the building. This fungus is commonly found both indoors and outdoors and is often located in spaces where condensation is collected and/or where there is poor ventilation. It is commonly found on the surface of fiberglass duct lining inside supply ducts. It is a common cause of allergies and hay fever and has also been associated with various skin and eye infections acquired by immune compromised individuals.

Epicoccum sp.: Spores were found on the air sample collected outside of the building. This fungus is commonly found in plants, soils, grains, textiles and paper products. It is usually found in association with *Cladosporium* and Aureobasidum. Considered to be a saprophyte, *Epicoccum*, is routinely found on air samples and occasionally found in dust samples. This fungus is reported to be an allergen.

Erysiphe sp.: Spores were found on the air sample collected in Room 15. This fungus has many species; some of which are plant pathogens that cause powdery mildew.

Myxomycetes: Spores were found on a majority of air samples, collected both inside and outside of the building, including areas impacted by the water and areas that were not impacted by the water. Myxomycetes are usually found outdoors on decaying plant material. They are easily dispersed by wind in their dry phase and occasionally are found in indoor environments. Under 600x microscopy, Myxomycetes are indistinguishable from smuts.

Oidium sp.: Spores were found on the air sample collected in Room 15. These fungi are visible as a powdery mildew and are not considered to be a human pathogen.

Pithomyces sp.: Spores were found on air samples collected in Room 16, Room 23, the hallway by Room 23, Room 24, and from the outside of the building. This fungus is found on decaying plants. *Pithomyces sp.* produces a mycotoxin known as sporidesmin, which is an animal pathogen.

Rusts: Spores were found on the air samples collected in Room 12, the MRC (a non-water-impacted location), Room 24, and from the outside of the building. Rusts are plant pathogens that develop in cool weather. Spread by wind and splashing water, rusts need water to reproduce and infect host plants.

Smuts: Spores were found on a majority of air samples, collected both inside and outside of the building, including areas impacted by the water and areas that were not impacted by the water. This allergen is a parasitic plant pathogen that needs a living host. Smuts are often found on corn, grass, weeds, flowering plants, and even other fungi. Smuts are distributed by wind. Under 600x microscopy, smuts are indistinguishable from mxomycetes.