

**MICROBIAL SURFACE SAMPLE COLLECTION REPORT**

**HVAC DUCT INVESTIGATION**

**COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181**

**HINSDALE MIDDLE SCHOOL**

**100 SOUTH GARFIELD AVENUE**

**HINSDALE, ILLINOIS**

**IES NO. 915-02**



**INTEGRITY**

**ENVIRONMENTAL SERVICES, INC.**

**MICROBIAL SURFACE SAMPLE COLLECTION REPORT**

HVAC DUCT INVESTIGATION

COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181

HINSDALE MIDDLE SCHOOL

100 SOUTH GARFIELD AVENUE

HINSDALE, ILLINOIS

IES NO. 915-02



January 22, 2014

C-11040

Mr. Gary Frisch  
Assistant Superintendent of Business and Operations  
Community Consolidated School District 181  
6010 South Elm Street  
Burr Ridge, Illinois 60527

Dear Mr. Frisch:

Microbial Surface Sample Collection Report  
HVAC Duct Investigation  
Community Consolidated School District 181  
Hinsdale Middle School  
100 South Garfield Avenue  
Hinsdale, Illinois  
IES No. 915-02

Integrity Environmental Services, Inc. has completed this final Microbial Surface Sample Collection Report for the above referenced School District facility. One (1) original and two (2) copies of the Report have been provided.

This Report has been prepared based on observations made and sample data collected during water damage/mold remediation activities from representative locations of HVAC ductwork located throughout the school building. Surface swab sample data detailed in this Report was obtained on January 19, 2014.

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 conditions at significantly later dates.

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

Mark J. Ravanese  
President

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HINSDALE, ILLINOIS  
IES NO. 915-02

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## **EXECUTIVE SUMMARY**

MICROBIAL SURFACE SAMPLE COLLECTION REPORT  
HVAC DUCT INVESTIGATION  
COMMUNITY CONSOLIDATED SCHOOL DISTRICT 181  
HINSDALE MIDDLE SCHOOL  
100 SOUTH GARFIELD AVENUE  
HINSDALE, ILLINOIS  
IES NO. 915-02

### **A. INTRODUCTION:**

The following paragraphs provide a narrative description of a microbial sample collection event and indoor air quality assessment conducted for Community Consolidated School District 181 within the above referenced facility. This study was requested to determine if and to what extent, mold spores from materials and areas that were recently impacted by significant water intrusion events have impacted the Hinsdale Middle School building. This sample collection and assessment work was conducted to determine the presence and concentration of mold spores within HVAC supply ducts and HVAC return ducts located throughout the building.

At the request of the School District, Integrity Environmental Services, Inc. (IES) was present at the Hinsdale Middle School on Sunday, January 19, 2014 to collect surface swab samples on diffusers and accessible surfaces within HVAC supply and return ducts, and exhaust ducts on the first, second and third floors of the school building. Samples were collected following bulk sample results collected from water damaged drywall that showed presence of low, moderate, and high concentrations of *Aspergillus/Penicillium*-type molds and molds from the genera *Chaetomium sp.*, and *Stachybotrys sp.*; and surface swab sample results on a lab top in Classroom 216 and the internal surface of an open return duct in Classroom 215 that reported the presence of mold spores from the genus *Stachybotrys sp.*

### **B. INSPECTION SUMMARY:**

Based on the results of the bulk and swab samples collected on January 16, 2013, a concern was raised as to what extent, if any, *Aspergillus/Penicillium*-type spores and spores from the genera *Chaetomium sp.* and *Stachybotrys sp.* had been distributed throughout the school building's HVAC system. A collective decision between IES and representatives of Community Consolidated School District 181 was made to collect additional surface swab samples for the mold spores within the HVAC supply and return ducts throughout the school building. No air samples were obtained or analyzed during this phase of the building investigation.

As part of our investigation, a visual inspection of each of the sampled ducts and diffusers, and the immediate area containing each duct was also conducted. During this inspection, the IES representative noted the condition within each area. While all sampled HVAC ducts appeared to be intact, a visible layer of dust was observed within the majority of ducts and/or on the diffusers. IES conducted the site inspection and surface swab sampling procedures within the unoccupied school building, as the ServPro crew continued to clean surfaces such as but not limited to walls, floors, desks, tables, chairs, and book cases within all areas impacted by their water and mold remediation efforts.

All exterior doors and windows within the school building were closed and the HVAC system was in operation. Negative air machines with HEPA filters, set-up by ServPro, were positioned and in operation throughout the building.

### **C. SAMPLING STRATEGY:**

The sampling protocol 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., 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 there are no current regulatory requirements governing the testing strategies and interpretation of sample data at this time. 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 within the subject areas of Hinsdale Middle School. IES collected representative samples within each sample location.

At each swab sample location, the IES representative collected a sample for mold spores using a sterile cotton swab. Where possible, a 50 cm<sup>2</sup> template was placed on the subject surface and the swab was then collected over the entire defined area. In locations that were difficult to access, the template was not used and the sample was collected from an un-quantified area. Following collection, each surface swab was properly sealed, contained, and issued a separate and unique sample number. Each sample number and corresponding sample location was recorded on the laboratory's chain of custody form, prior to submittal to the laboratory for analysis.

Following the collection event, all samples were relinquished to STAT Analysis Corporation, Chicago, Illinois, for analysis. The IES representative collected a total of twenty-four (24) surface swab samples (including the required QA/QC blank). All sample locations are illustrated in Section 2, Exhibit A of this report.

Each of the surface swab samples collected was analyzed for the presence, type, and quantity of fungal spores.

**D. LABORATORY ANALYSIS SUMMARY:**

Mold spores were found on all twenty-three (23) surface swab samples collected within the school building HVAC ducts during this investigation. Results of the swab sample analysis show that fourteen (14) types of mold spores were found on the collected samples.

The laboratory reports that many of the samples exhibited mold spores such as Basidiospores, Rusts, spores from the group including Smuts and *Myxomycetes sp.*, and spores from the genera *Alternaria sp.*, *Epicoccum sp.*, *Periconia sp.*, *Pithomyces sp.*, *Stemphylium sp.* and *Tetraploa sp.* These types of molds are commonly found outdoors and are typically associated with plants and grasses and/or decaying plant matter. Many of these types of molds do not typically grow indoors. *Alternaria sp.* is commonly found both indoors and outdoors. With fresh air being brought into and mixed with the building's recirculating air, it is not uncommon to find these types of mold spores on samples collected from within a building's HVAC system.

Mold spores from the genus *Cladosporium sp.* were also detected on several of the collected surface swab samples. This fungus is one (1) of the most common types of mold found. It is commonly found both indoors and outdoors and is often found in areas where condensation is collected and/or where there is poor ventilation. It is also commonly found on the surface of fiberglass duct lining inside supply ducts.

Mold spores including Ascospores, Aspergillus/Penicillium-type spores and spores from the genus *Chaetomium sp.* were detected several, but not all of the collected samples. At least one (1) or more types of these spores were detected within the HVAC supply duct and/or on the supply duct diffuser in the Classroom 119, the Student Services Office area, the Commons Area, Classroom 214, and Classroom 206. At least one (1) or more types of these spores were detected within the HVAC return duct or return duct vent diffuser in Room 203A, Classroom 227, and the MRC.

It should be noted that mold spores from the genus *Stachybotrys sp.* were not detected on any of the collected surface swab samples.

While all concentrations of mold spores found on the surface swab samples were reported to be low (less than 25% coverage within the analyst's field of view while looking through the microscope), sample results do show that mold spores including Aspergillus/Penicillium-type spores and spores from the genus *Chaetomium sp.* have been distributed through portions of the building, most likely as a result of the recent, significant water intrusion events where these molds were specifically identified on the water damaged drywall located in the areas significantly impacted.

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



**E. CONCLUSIONS:**

Based on our inspection, sample collection work, and laboratory analysis, Integrity Environmental Services, Inc. has made the following conclusions:

- Visual inspection confirms that significant amounts of dust are present within areas of the HVAC duct system and recent cleaning of the duct system has not been performed.
- Mold spores were identified and confirmed to be present on diffusers and/or within all HVAC ducts sampled during this investigation.
- The laboratory reported that all mold spore concentrations collected and identified on the samples were considered to be low. As previously stated, it should be noted that the presence of some amount of spores with an HVAC system is not unexpected.
- Spores from the genus *Stachybotrys sp.* were not identified on any of the surface swab samples collected within the HVAC ductwork during this investigation.
- Mold spores including *Aspergillus/Penicillium*-type and/or spores from the genus *Chaetomium sp.*, associated with water damage and moisture intrusion were identified on some, but not all of the collected surface swab samples. The presence of these spores in the locations where they were identified, coupled with the fact that these types of molds were identified on water-damaged materials directly impacted from these recent water intrusion events suggests that distribution of these spores through the building's HVAC system is possible.

**F. RECOMMENDATIONS:**

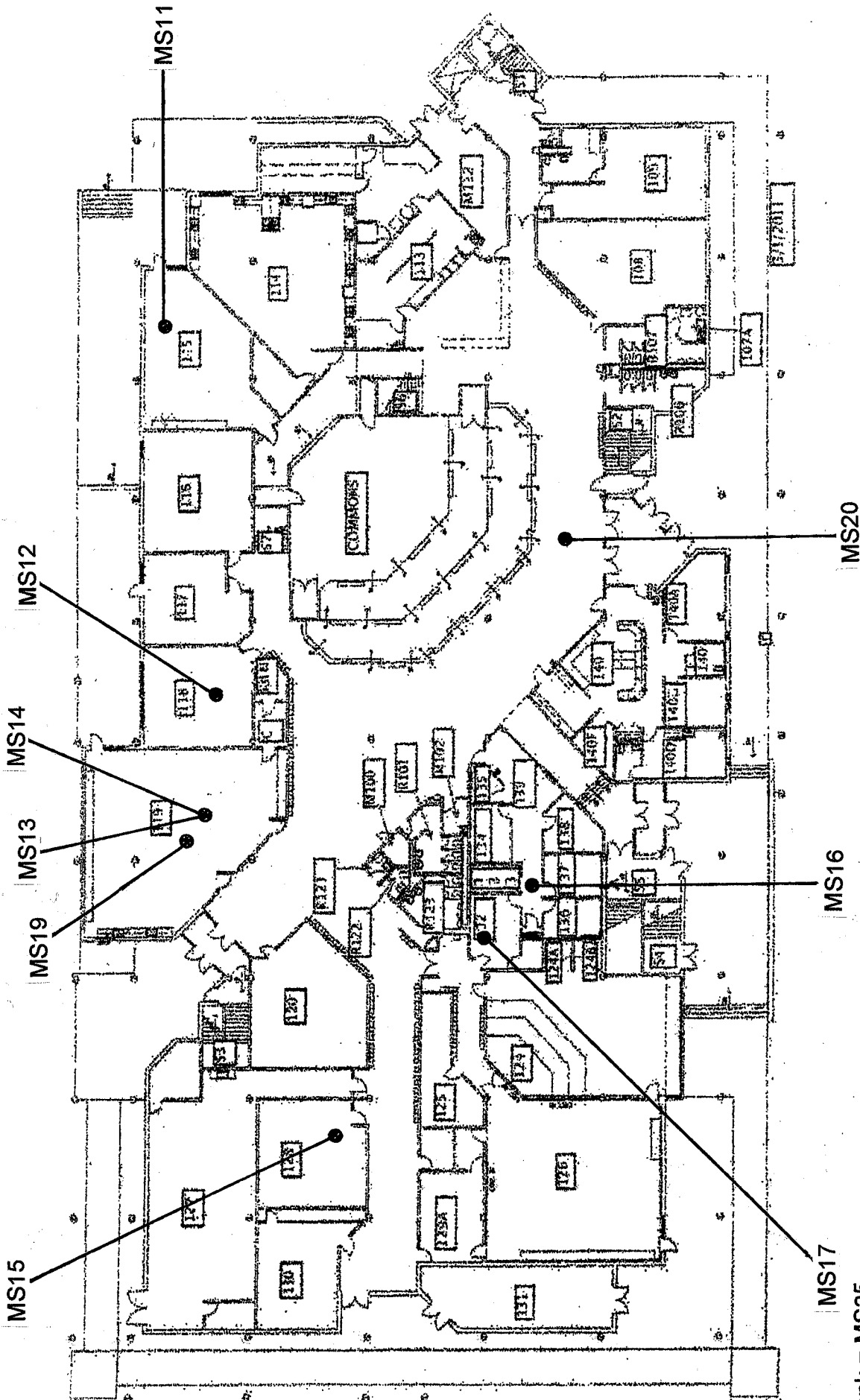
Based upon sample analysis results and visual observations made during this assessment, Integrity Environmental Services, Inc. recommends that the following actions be taken:

1. Insure that all existing water-damaged and mold-impacted materials have been removed and dispose of in accordance with industry standards and procedural specifications.
2. All remaining surfaces impacted by the water intrusion event(s) should be cleaned and treated with an anti-microbial disinfectant.
3. Perform all remaining mold remediation and cleaning procedures within isolated work areas, under negative pressure to prevent possible further distribution of mold spores to other areas of the school building.

4. While laboratory results indicate that surface concentrations of mold spores are considered to be low, spores identified as the same type of mold found on materials directly impacted by the water intrusion events suggests that these types of mold/spores have been distributed and that cleaning of the building's HVAC system should be considered to help prevent further distribution of these molds throughout the building.



**EXHIBIT A**



Blank = MS35

● = Surface Swab Sample Location

**IAQ ASSESSMENT  
 SURFACE SWAB  
 SAMPLE LOCATION  
 DIAGRAM  
 FIRST FLOOR**

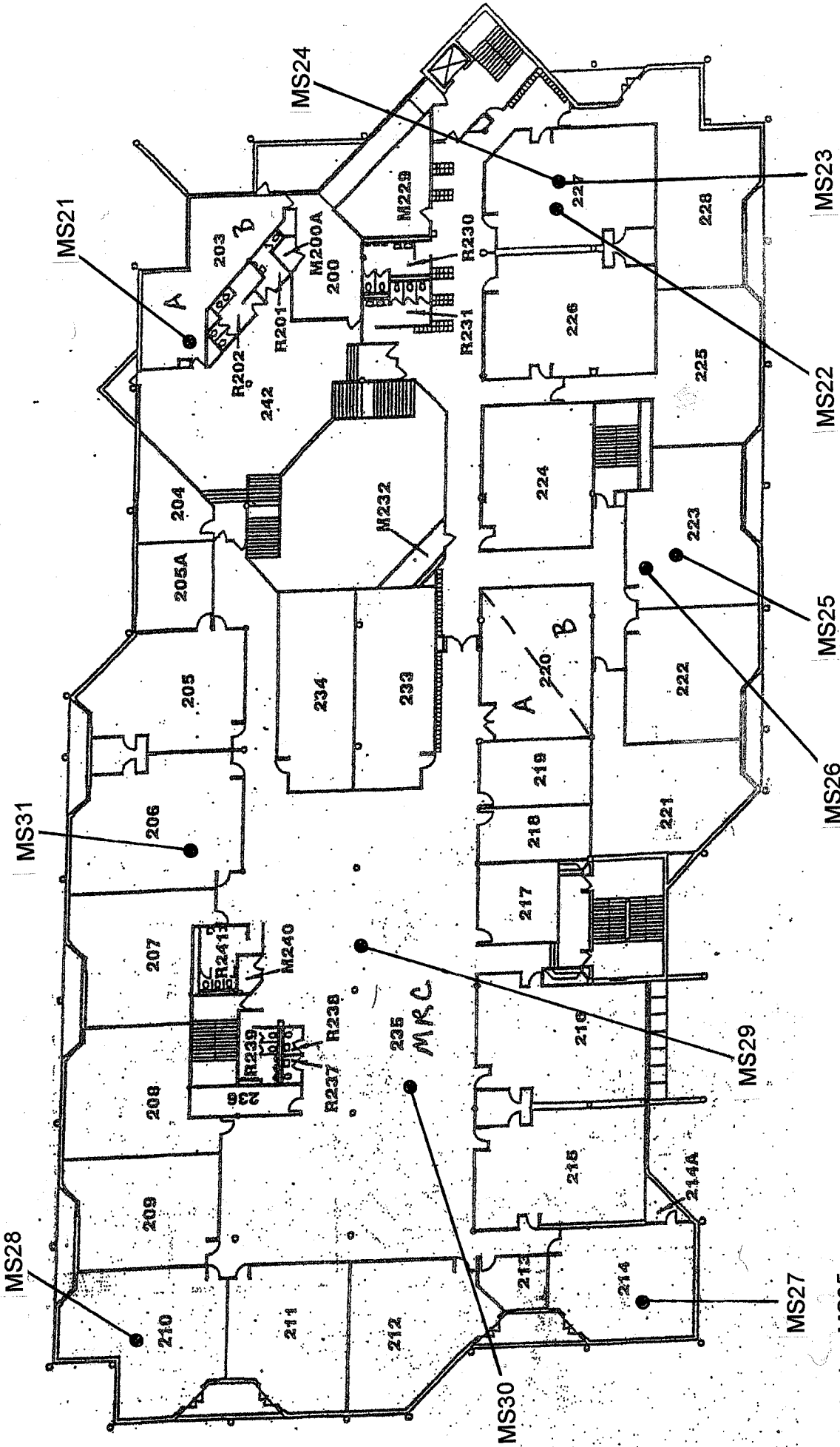


NORTH

DRAWN BY: GT  
 DATE: 01/20/14  
 IES NO.: 915-02  
 NO SCALE

**PROJECT:** HINSDALE MIDDLE SCHOOL  
 100 SOUTH GARFIELD AVENUE  
 HINSDALE, ILLINOIS  
  
**OWNER:** COMMUNITY CONSOLIDATED SCHOOL DIST. 181  
 6010 SOUTHELM STREET  
 BURR RIDGE, ILLINOIS

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



Blank = MS35

● = Surface Swab Sample Location

**IAQ ASSESSMENT  
SURFACE SWAB  
SAMPLE LOCATION  
DIAGRAM  
SECOND FLOOR**



IES NO.: 915-02

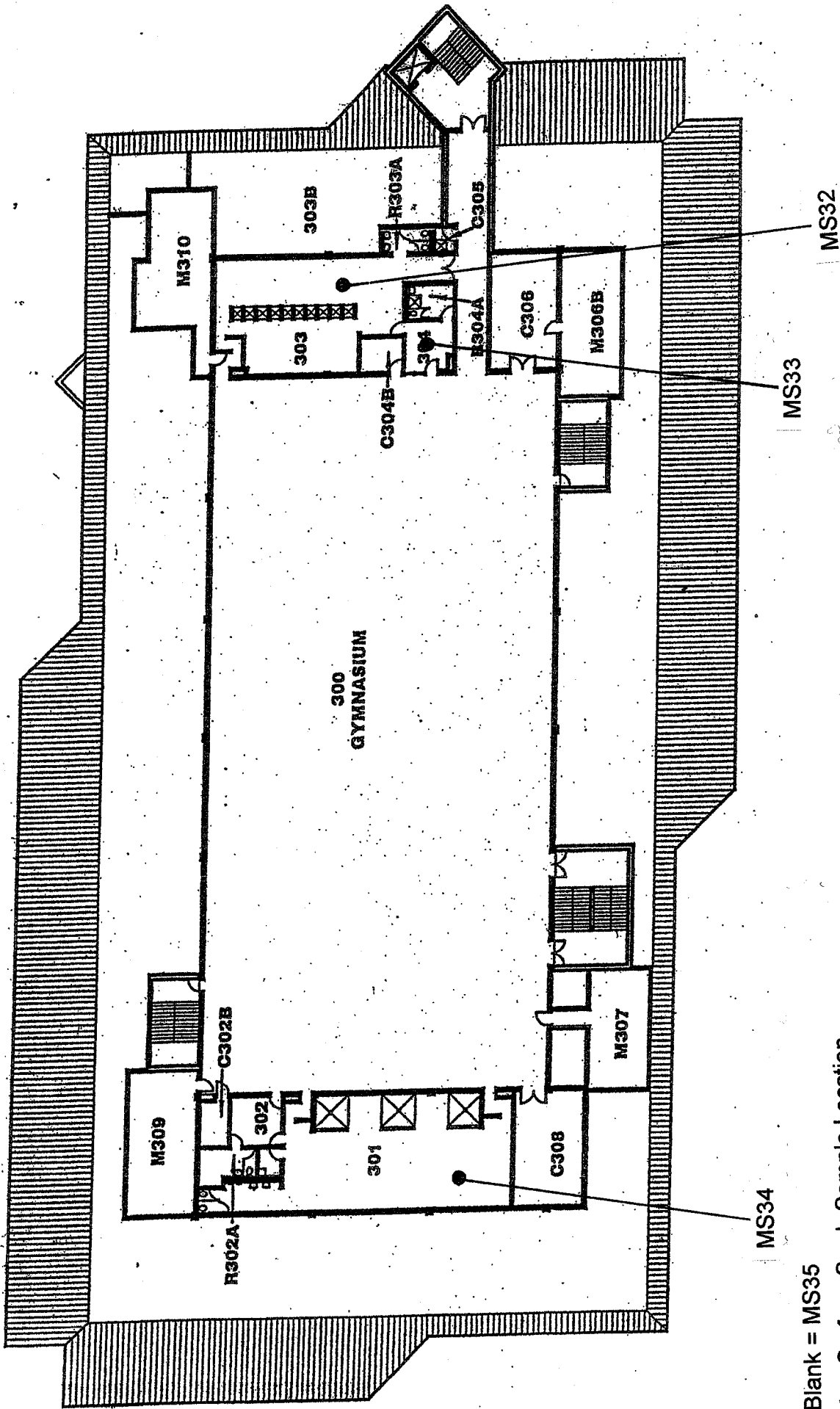
DRAWN BY: GT  
DATE: 01/20/14

NO SCALE

PROJECT: HINSDALE MIDDLE SCHOOL  
100 SOUTH GARFIELD AVENUE  
HINSDALE, ILLINOIS


OWNER: COMMUNITY CONSOLIDATED SCHOOL DIST. 181  
6010 SOUTH ELM STREET  
BURR RIDGE, ILLINOIS

**INTEGRITY**  
ENVIRONMENTAL SERVICES, INC.  
1240 IROQUOIS DRIVE, SUITE 102  
NAPERVILLE, ILLINOIS 60563  
(630) 718-9133  
(630) 718-9114 (FAX)



Blank = MS35

● = Surface Swab Sample Location

|   |  |   |   |
|---|--|---|---|
| <p><b>INTEGRITY</b><br/>ENVIRONMENTAL SERVICES, INC.</p> <p>1240 IROQUOIS DRIVE, SUITE 102<br/>NAPERVILLE, ILLINOIS 60563<br/>(630) 7189133<br/>(630) 7189114 (FAX)</p> | <p>PROJECT: HINSDALE MIDDLE SCHOOL<br/>100 SOUTH GARFIELD AVENUE<br/>HINSDALE, ILLINOIS</p> <p>OWNER: COMMUNITY CONSOLIDATED SCHOOL DIST. 181<br/>6010 SOUTH ELM STREET<br/>BURR RIDGE, ILLINOIS</p> | <p>DRAWN BY: GT<br/>DATE: 01/20/14</p> <p>IES NO.: 915-02</p> <p>NO SCALE</p> | <p>IAQ ASSESSMENT<br/>SURFACE SWAB<br/>SAMPLE LOCATION<br/>DIAGRAM<br/>THIRD FLOOR</p> <p> NORTH</p> |
|---|--|---|---|

**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

Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202-

January 20, 2014

Integrity Environmental Services, Inc.

1240 Iroquois Drive

Suite 302

Naperville, IL 60563

Telephone: (630) 718-9133

Fax: (630) 718-9114

RE: 915-02 Hinsdale Middle School Throughout Bldg

STAT Project No: 14010384

Dear Guy Tawzer:

STAT Analysis received 24 samples for the referenced project on 1/20/2014 7:00:00 AM. 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

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, STAT will be under no obligation to support, defend or discuss the analytical report.*

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**CLIENT:** Integrity Environmental Services, Inc.  
**Project:** 915-02 Hinsdale Middle School Throughout BI  
**Lab Order:** 14010384

**CASE NARRATIVE**

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Sample # M518 was not collected.

**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 - Direct Examination**

Client: Integrity Environmental Services, Inc Date/Time Received: 1/20/14 7:00 AM  
 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                          |                     |
|--------------------|--------------------------|---------------------|
| Client Sample No.: | M511-Rm 115 supply dif   |                     |
| Date Sampled:      | 1/19/2014                |                     |
| Matrix:            | Swab                     |                     |
| STAT Sample No.:   | 14010384-001             |                     |
|                    |                          | Relative Abundance: |
| Identification:    | <i>Alternaria</i>        | Low concentration   |
|                    | <i>Smuts/Myxomycetes</i> | Low concentration   |

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M512-Rm 118 supply dif |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-002           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>Alternaria</i>      | Low concentration   |
|                    | <i>Epicoccum</i>       | Low concentration   |
|                    | <i>Cladosporium</i>    | Low concentration   |

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M513-Rm 119 supply dif |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-003           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>       | Low concentration   |
|                    | <i>Rust</i>            | Low concentration   |
|                    | <i>Ascospores</i>      | Low concentration   |
|                    | <i>Alternaria</i>      | Low concentration   |

|                    |                                |                     |
|--------------------|--------------------------------|---------------------|
| Client Sample No.: | M514-Rm 119 supply duct        |                     |
| Date Sampled:      | 1/19/2014                      |                     |
| Matrix:            | Swab                           |                     |
| STAT Sample No.:   | 14010384-004                   |                     |
|                    |                                | Relative Abundance: |
| Identification:    | <i>Chaetomium</i>              | Low concentration   |
|                    | <i>Aspergillus/Penicillium</i> | Low concentration   |

High concentration: greater than 75% spore cover/field of view  
 Moderate concentration: 25% to 75% spore cover/field of view  
 Low concentration: less than 25% spore cover/field of view

SOP 6210

**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 - Direct Examination**

Client: Integrity Environmental Services, Inc Date/Time Received: 1/20/14 7:00 AM  
 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                         |                     |
|--------------------|-------------------------|---------------------|
| Client Sample No.: | M515- Rm 128 supply dif |                     |
| Date Sampled:      | 1/19/2014               |                     |
| Matrix:            | Swab                    |                     |
| STAT Sample No.:   | 14010384-005            |                     |
|                    |                         | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>        | Low concentration   |
|                    | <i>Periconia</i>        | Low concentration   |
|                    | <i>Rust</i>             | Low concentration   |

|                    |                    |                     |
|--------------------|--------------------|---------------------|
| Client Sample No.: | M516-SS-supply dif |                     |
| Date Sampled:      | 1/19/2014          |                     |
| Matrix:            | Swab               |                     |
| STAT Sample No.:   | 14010384-006       |                     |
|                    |                    | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>   | Low concentration   |
|                    | <i>Ascospores</i>  | Low concentration   |
|                    | <i>Chaetomium</i>  | Low concentration   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M517-Rm 138 ret duct |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-007         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>     | Low concentration   |
|                    | <i>Cladosporium</i>  | Low concentration   |

|                    |                         |                     |
|--------------------|-------------------------|---------------------|
| Client Sample No.: | M519-Rm 119 Sup Fan Box |                     |
| Date Sampled:      | 1/19/2014               |                     |
| Matrix:            | Swab                    |                     |
| STAT Sample No.:   | 14010384-008            |                     |
|                    |                         | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>        | Low concentration   |
|                    | <i>Alternaria</i>       | Low concentration   |
|                    | <i>Pithomyces</i>       | Low concentration   |

High concentration: greater than 75% spore cover/field of view  
 Moderate concentration: 25% to 75% spore cover/field of view  
 Low concentration: less than 25% spore cover/field of view

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 Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

**Analytical Report for Microbiological Analysis - Direct Examination**

Client: Integrity Environmental Services, Inc Date/Time Received: 1/20/14 7:00 AM  
 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M520- Comm supply duct |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-009           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>       | Low concentration   |
|                    | <i>Chaetomium</i>      | Low concentration   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M521-Rm 203A ret dif |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-010         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Pithomyces</i>    | Low concentration   |
|                    | <i>Chaetomium</i>    | Low concentration   |
|                    | <i>Cladosporium</i>  | Low concentration   |

|                    |                         |                     |
|--------------------|-------------------------|---------------------|
| Client Sample No.: | M522-Rm 227 supply duct |                     |
| Date Sampled:      | 1/19/2014               |                     |
| Matrix:            | Swab                    |                     |
| STAT Sample No.:   | 14010384-011            |                     |
|                    |                         | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>        | Low concentrtaion   |
|                    | <i>Cladosporium</i>     | Low concentrtaion   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M523-Rm 227 ret duct |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-012         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Cladosporium</i>  | Low concentration   |
|                    | <i>Basidiospores</i> | Low concentration   |
|                    | <i>Ascospores</i>    | Low concentration   |
|                    | <i>Rust</i>          | Low concentration   |

High concentration: greater than 75% spore cover/field of view

Moderate concentration: 25% to 75% spore cover/field of view

Low concentration: less than 25% spore cover/field of view

SOP 6210

**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 - Direct Examination**

Client: Integrity Environmental Services, Inc Date/Time Received: 1/20/14 7:00 AM  
 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M524-R227 black powder |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-013           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>Alternaria</i>      | Low concentration   |
|                    | <i>Pithomyces</i>      | Low concentration   |

|                    |                         |                     |
|--------------------|-------------------------|---------------------|
| Client Sample No.: | M525-Rm 223 supply duct |                     |
| Date Sampled:      | 1/19/2014               |                     |
| Matrix:            | Swab                    |                     |
| STAT Sample No.:   | 14010384-014            |                     |
|                    |                         | Relative Abundance: |
| Identification:    | <i>Tetraploa</i>        | Low concentration   |
|                    | <i>Epicoccum</i>        | Low concentration   |
|                    | <i>Alternaria</i>       | Low concentration   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M526-Rn 223 ret duct |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-015         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Pithomyces</i>    | Low concentration   |
|                    | <i>Alternaria</i>    | Low concentration   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M527- Rm 214 sup dif |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-016         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Alternaria</i>    | Low concentration   |
|                    | <i>Ascospores</i>    | Low concentration   |

High concentration: greater than 75% spore cover/field of view  
 Moderate concentration: 25% to 75% spore cover/field of view  
 Low concentration: less than 25% spore cover/field of view

SOP 6210

**Analysis Corporation:**

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**Analytical Report for Microbiological Analysis - Direct Examination**

Client: Integrity Environmental Services, Inc Date/Time Received: 1/20/14 7:00 AM  
 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M528-Rm 210 sup duct |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-017         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Pithomyces</i>    | Low concentration   |
|                    | <i>Cladosporium</i>  | Low concentration   |
|                    | <i>Stemphylium</i>   | Low concentration   |

|                    |                                |                     |
|--------------------|--------------------------------|---------------------|
| Client Sample No.: | M529-MRC ret duct              |                     |
| Date Sampled:      | 1/19/2014                      |                     |
| Matrix:            | Swab                           |                     |
| STAT Sample No.:   | 14010384-018                   |                     |
|                    |                                | Relative Abundance: |
| Identification:    | <i>Pithomyces</i>              | Low concentration   |
|                    | <i>Aspergillus/Penicillium</i> | Low concentration   |
|                    | <i>Alternaria</i>              | Low concentration   |
|                    | <i>Cladosporium</i>            | Low concentration   |

|                    |                     |                     |
|--------------------|---------------------|---------------------|
| Client Sample No.: | M530-MRC supply dif |                     |
| Date Sampled:      | 1/19/2014           |                     |
| Matrix:            | Swab                |                     |
| STAT Sample No.:   | 14010384-019        |                     |
|                    |                     | Relative Abundance: |
| Identification:    | <i>Ascobolus</i>    | Low concentration   |
|                    | <i>Alternaria</i>   | Low concentration   |

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Client Sample No.: | M531-Rm 206 sup duct |                     |
| Date Sampled:      | 1/19/2014            |                     |
| Matrix:            | Swab                 |                     |
| STAT Sample No.:   | 14010384-020         |                     |
|                    |                      | Relative Abundance: |
| Identification:    | <i>Ascospores</i>    | Low concentration   |
|                    | <i>Alternaria</i>    | Low concentration   |
|                    | <i>Chaetomium</i>    | Low concentration   |

High concentration: greater than 75% spore cover/field of view  
 Moderate concentration: 25% to 75% spore cover/field of view  
 Low concentration: less than 25% spore cover/field of view

SOP 6210

**STAT Analysis Corporation:**

2242 West Harrison St., Suite 200, Chicago, Illinois 60612-3766  
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 Project ID: 915-02, Hinsdale Middle School, Throughout Bldg Date Analyzed: 1/20/2014  
 STAT Project No.: 14010384 Analyzed By: AM

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M532-Girls' LR Exhaust |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-021           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>Alternaria</i>      | Low concentration   |
|                    | <i>Pithomyces</i>      | Low concentration   |
|                    | <i>Epicoccum</i>       | Low concentration   |

|                    |                             |                     |
|--------------------|-----------------------------|---------------------|
| Client Sample No.: | M533-Girls' PE off sup duct |                     |
| Date Sampled:      | c                           |                     |
| Matrix:            | Swab                        |                     |
| STAT Sample No.:   | 14010384-022                |                     |
|                    |                             | Relative Abundance: |
| Identification:    | <i>Epicoccum</i>            | Low concentration   |

|                    |                       |                     |
|--------------------|-----------------------|---------------------|
| Client Sample No.: | M534-Boy's LR Exhaust |                     |
| Date Sampled:      | 1/19/2014             |                     |
| Matrix:            | Swab                  |                     |
| STAT Sample No.:   | 14010384-023          |                     |
|                    |                       | Relative Abundance: |
| Identification:    | <i>Pithomyces</i>     | Low concentration   |
|                    | <i>Epicoccum</i>      | Low concentration   |

|                    |                        |                     |
|--------------------|------------------------|---------------------|
| Client Sample No.: | M535-Blank             |                     |
| Date Sampled:      | 1/19/2014              |                     |
| Matrix:            | Swab                   |                     |
| STAT Sample No.:   | 14010384-024           |                     |
|                    |                        | Relative Abundance: |
| Identification:    | <i>No spores found</i> |                     |

High concentration: greater than 75% spore cover/field of view  
 Moderate concentration: 25% to 75% spore cover/field of view  
 Low concentration: less than 25% spore cover/field of view

SOP 6210





# Analysis Corporation

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e-mail address: STAT@analysis.com

Page: 1 of 3

## MICROBIOLOGY CHAIN OF CUSTODY RECORD

Client: Integrity Environmental Services, Inc.  
 Street Address: 1240 Iroquois Avenue, Suite 102  
 City, State, Zip: Naperville, IL 60563  
 Phone: (630) 718-9133  
 Fax: (630) 718-9114  
 e-mail/Alt. Fax: ies2001@esglabels.net  
 Project Number: 915-02  
 Project Name: Hinsdale Middle School  
 Project Location: Throughout Building  
 Project Manager: Guy Jawzer  
 P.O. Number: 915-02

Office Use Only Below:  
 Work Order No.: 14060369  
 Samples Acceptable: Yes  No   
 Analyzed By: [Signature] No: 1-20-14  
 Date/Time: [Signature]  
 Data File:  
 QC By:  
 Reported By (Initial/Date/Time):  
 Verbal:  
 Fax/e-mail:

Turn Around Time: <1  1  2  3  Viable: 5-10  
 Other TAT: [Signature] Date Due: 1-27-14 10:30  
 Relinquished by: [Signature] Date/Time: 1-27-14 10:30  
 Received by: [Signature] Date/Time: 1-27-14 10:30  
 Relinquished by: [Signature] Date/Time: 1-27-14 10:30  
 Received for lab by: [Signature] Date/Time: 1-27-14 10:30  
 Relinquished by: [Signature] Date/Time: 1-27-14 10:30  
 Received by: [Signature] Date/Time: 1-27-14 10:30

| Client Sample Number/Description: | Date Taken | Time Taken | Volume (Liters) | Area Wiped (Units) <sup>2</sup> | Laboratory Sample No. | Non-Viable: | Air Cassette | Direct Exam-Tape | Direct Exam-Swab | Direct Exam-Bulk | Viable: | Air Impact | Swab | Bulk | Other |
|-----------------------------------|------------|------------|-----------------|---------------------------------|-----------------------|-------------|--------------|------------------|------------------|------------------|---------|------------|------|------|-------|
| M511 - Rm. 115 - Supply D.F.      | 1/19/14    | 09:35      | /               | 50cm                            | 001                   |             |              | X                |                  |                  |         |            |      |      |       |
| M512 - Rm. 118 - Supply D.F.      |            | 09:52      | /               |                                 | 002                   |             |              |                  |                  |                  |         |            |      |      |       |
| M513 - Rm. 119 - Supply D.F.      |            | 10:30      | /               |                                 | 003                   |             |              |                  |                  |                  |         |            |      |      |       |
| M514 - Rm. 119 - Supply Duct      |            | 10:40      | /               |                                 | 004                   |             |              |                  |                  |                  |         |            |      |      |       |
| M515 - Rm. 128 - Supply D.F.      |            | 11:00      | /               |                                 | 005                   |             |              |                  |                  |                  |         |            |      |      |       |
| M516 - SS - Supply D.F.           |            | 11:30      | /               |                                 | 006                   |             |              |                  |                  |                  |         |            |      |      |       |
| M517 - Rm. 139 - Rest. Duct       |            | 11:50      | /               |                                 | 007                   |             |              |                  |                  |                  |         |            |      |      |       |
| M518 - Not Collected              |            |            |                 |                                 |                       |             |              |                  |                  |                  |         |            |      |      |       |
| M519 - Rm. 119 - Sup. Fan Box     | 1/19/14    | 12:15      | /               | 50cm                            | 008                   |             |              | X                |                  |                  |         |            |      |      |       |
| M520 - Comm. Supply Duct          |            | 12:25      | /               |                                 | 009                   |             |              |                  |                  |                  |         |            |      |      |       |
| M521 - Rm. 203A - Rest. D.F.      |            | 12:48      | /               |                                 | 010                   |             |              |                  |                  |                  |         |            |      |      |       |
| M522 - Rm. 207 - Sup. Duct        |            | 13:10      | /               | N/A                             | 011                   |             |              |                  |                  |                  |         |            |      |      |       |

Comments: Need Results before 5 pm 1-20-14.



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e-mail address: STATinfo@STATAnalysis.com

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 Phone: (630) 718-9133  
 Fax: (630) 718-9114  
 e-mail/Alt. Fax: ies2001@sbephschool.net  
 Project Number: 915-02  
 Project Name: Hinsdale Middle School  
 Project Location: Throughout Building  
 Project Manager: Guy Teuzer  
 P.O. Number: 915-02

Office Use Only Below:  
 Work Order No.: 17/010389  
 Samples Acceptable: Yes  No   
 Analyzed By: [Signature] No: 4/20/14  
 Date/Time: [Signature]  
 Data File: [Signature]  
 QC By: [Signature]  
 Reported By (Initial/Date/Time): [Signature]  
 Verbal: [Signature]  
 Fax/e-mail: [Signature]

Turn Around Time: <1  1  2  3  Viable: 6-10  
 Other TAT: [Signature]  
 Date/Time: 1/19/14  
 Relinquished by: [Signature]  
 Received by: [Signature]  
 Relinquished by: [Signature]  
 Received for lab by: [Signature]  
 Relinquished by: [Signature]  
 Received by: [Signature]

| Client Sample Number/Description   | Date Taken | Time Taken | Volume (Liters) | Area Wiped (Units) <sup>2</sup> | Laboratory Sample No. |
|------------------------------------|------------|------------|-----------------|---------------------------------|-----------------------|
| M523 - Rm. 207 - Ret. Dust         | 1/19/14    | 13:20      | 1               | 50cm                            | 012                   |
| M524 - Rm. 207 - Black Boards      |            | 13:30      | 1               | N/A                             | 013                   |
| M525 - Rm. 207 - Sup. Duct         |            | 13:40      | 1               | N/A                             | 014                   |
| M526 - Rm. 207 - Ret. Duct         |            | 13:50      | 1               | 50cm                            | 015                   |
| M527 - Rm. 214 - Sup. Duct         |            | 14:05      | 1               | ↓                               | 016                   |
| M528 - Rm. 210 - Sup. Duct         |            | 14:35      | 1               | N/A                             | 017                   |
| M529 - MRC - Ret. Duct             |            | 14:50      | 1               | 50cm                            | 018                   |
| M530 - MRC - Sup. Duct             |            | 14:55      | 1               | ↓                               | 019                   |
| M531 - Rm. 206 Sup. Duct           |            | 15:15      | 1               | N/A                             | 020                   |
| M532 - Girls LR - Exhaust          |            | 15:40      | 1               | 50cm                            | 021                   |
| M533 - Girls R.E. Off. - Sup. Duct |            | 15:56      | 1               | N/A                             | 022                   |
| M534 - Boys LR - Exhaust           |            | 16:15      | 1               | 50cm                            | 023                   |

Direct Exam-Tape  Air Cassette  Non-Viable   
 Direct Exam-Swab  Direct Exam-Bulk  Viable   
 Air Impact  Swab  Bulk  Other:

Relinquished by: [Signature]  
 Received by: [Signature]

Comments: See Page One





**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 the Community Consolidated School District 181's Hinsdale Middle School:

*Alternaria sp.:* 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.

*Ascobolus sp.:* The genus has a widespread distribution, and contains an estimated sixty-one (61) species, most of which are typically found outdoors living on animal dung.

- Ascospores:** These spores were not positively identified. They are possibly from species of *Alternaria*, *Aspergillus*, *Cladosporium*, or *Penicillium* among others.
- Aspergillus sp.:*** This is the most common group of fungi in our environment. Sixteen (16) of the over 160 species of *Aspergillus* are known to act as agents of etiological disease in humans. These diseases are fairly uncommon and do not normally occur in people with healthy immune systems. The spores produced by *Aspergillus sp.* appear very similar to the spores produced by *Penicillium sp.*
- Chaetomium sp.:*** This fungus is found in various substrates such as paper and plant compost that contains cellulose. Many species are said to be able to dissolve cellulose fibers, causing materials to disintegrate, especially under moist conditions. This fungus is also reported to be allergenic.
- Cladosporium sp.:*** 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.:*** This fungus is commonly found in plants, soils, grains, textiles and paper products. It is usually found in association with *Cladosporium* and *Aureobasidium*. 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.
- Myxomycetes:** 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.
- Penicillium sp.:*** This fungus is commonly found in soil, food, cellulose, paint, grains, compost piles, carpet, wall paper, and in interior fiberglass duct insulation. It is reported to cause allergic reactions on skin and in susceptible individuals, may cause among other infections, hypersensitivity pneumonitis or allergic alveolitis. Some species can produce various mycotoxins that are harmful to humans. The spores produced by *Penicillium sp.* appear very similar to the spores produced by *Aspergillus sp.*
- Periconia sp.:*** This widespread mitosporic fungi is commonly found in temperate to tropical areas. It is usually found on soils, plant debris, grasses, and air. *Periconia* is rarely found growing indoors. It is saprophytic or parasitic on plants, and can be a cause of root rot. Rare cases of mycotic keratitis have been reported from *Periconia*. The species *P. circinata* can produce Peritoxins, which are secondary metabolites.

- Pithomyces sp.*: This fungus is found on decaying plants. *Pithomyces sp.* produces a mycotoxin known as sporidesmin, which is an animal pathogen.
- Rusts:** 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:** 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.
- Stemphylium sp.:** Reported to be allergenic, this fungus is associated with dead plants and cellulose materials. Allergic reactions for humans include hay fever and asthma.
- Tetraploa sp.*: This fungi is a saprophyte; typically found in outdoor environments on surfaces such as leaf bases and stems just above the soil. It is reported to be found somewhat regularly on spore trap samples. To find it growing on indoor environmental surfaces would be highly unusual.