

# Environmental Safety Management Corporation

AIR QUALITY, MOLD TESTING, ERGONOMICS, OSHA

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June 24, 2022

Ms. Jeanne Cleary  
Director of Operations and Special Projects  
Scotch Plains - Fanwood Public Schools  
512 Cedar Street  
Scotch Plains, NJ 07076

Dear Ms. Cleary,

This report outlines findings from ESMCorp's June 16<sup>th</sup> and 17<sup>th</sup>, 2022 Indoor Air Quality monitoring at each of the 8 Scotch Plains-Fanwood Schools. This assessment was conducted as part of the Scotch Plains – Fanwood Schools routine preventative indoor air quality program to ensure acceptable air quality for students, staff and visitors.

The purposes of this inspection were the following:

- Determine if air quality parameters including fresh air supply, volatile organic compounds, carbon monoxide, temperature and humidity were within expected ranges.
- Determine if the school is in general compliance with current guidelines by the State of New Jersey and the CDC with respect to ventilation in classrooms for reducing COVID-19 transmission risk.

The inspections, data analysis and report were conducted Mr. Richard A. Lynch, MBA, CIH, CIEC and Dr. Richard M. Lynch, Ph.D., CIH of Environmental Safety Management Corporation.

## Executive Summary

The COVID-19 Community Level in Union County is Medium at the time of this report. The June 2022 routine Indoor Air Quality Assessment of the Scotch Plains – Fanwood schools revealed that fresh air supply was within normal ranges in 85% of the 226 rooms inspected in accordance with PEOSHA, CDC and NJ Department of Education guidelines for COVID-19 transmission risk reduction in each of the 8 schools inspected. There were no musty odors, no widespread visible water damage, and no visible mold contamination observed. There were no elevations in carbon monoxide. Temperature and relative humidity were with normal ranges given outdoor conditions at each of the schools.

## **I. Evaluation Criteria**

According to the CDC “regardless of the level of community transmission, it is critical that schools use and layer prevention strategies, following district policies and procedures for COVID-19 transmission risk reduction. As of March 7, 2022, the NJ Mandatory Mask Rule for K-12 schools expired. Local School Districts can determine mask use based upon local conditions. According to the NJDOH, many factors may go into this decision to eliminate mask use, including local COVID-19 community levels, the district's ability to maintain social distancing, perform contact tracing, exclude students with COVID or COVID -like illness, the ability to bring in as much fresh air as possible and other factors.

(source: [https://www.nj.gov/health/cd/topics/covid2019\\_schools.shtml](https://www.nj.gov/health/cd/topics/covid2019_schools.shtml), February 2022 Update)

All prevention strategies provide some level of protection, and layered strategies implemented at the same time provide the greatest level of protection. Schools should adopt prevention strategies to the largest extent practical—a layered approach is essential.” Source: CDC Operational Strategy for K-12 Schools through Phased Prevention

#### Heating Ventilation, Air Conditioning Systems

The CDC recommended that schools “Improve ventilation to the extent possible to increase circulation of outdoor air, increase the delivery of clean air, and dilute potential contaminants. This can be achieved through several actions.

- Bring in as much outdoor air as possible.
- Ensure Heating, Ventilation, and Air Conditioning (HVAC) settings are maximizing ventilation.
- Filter and/or clean the air in the school by improving the level of filtration as much as possible.
- Use exhaust fans in restrooms and kitchens.

For mechanically ventilated schools, The NJ PEOSHA Indoor Air Quality Standard requires that HVAC systems be inspected and maintained in accordance with manufacturer specifications and that damaged components be repaired. According to the standard, when indoor air levels of carbon dioxide exceed 1,000 parts per million the employer inspect the system to ensure that it is operating as it should NJAC 12:100-13.3. The standard also requires that when indoor air temperatures cannot be maintained between 68-79°F during the heating season, that the HVAC system be inspected. This is based upon the ASHRAE 55 standard which recommends that air temperatures be maintained between 68-72°F during the heating season, 74-78°F during the cooling season and 68-79°F during the transition seasons; all ideally at 30-60% relative humidity.

In non-mechanically ventilated buildings the PEOSHA standard requires that the employer “Assure that buildings without mechanical ventilation are maintained so that windows, doors, vents, stacks, and other portals designed or used for natural ventilation are in operable condition (NJAC 12: 100-13.3-6). In naturally ventilated classrooms (rooms with no mechanical ventilation systems such as unit ventilators, or rooftop air handlers), it is recommended that windows be opened to the maximum extent possible given temperature and security concerns. (Villers et al “SARS-CoV-2 Aerosol Transmission in Schools: The Effectiveness of Different Interventions”, and Lynch “Review 2 SARS-CoV2 Aerosol Transmission in Schools: The effectiveness of Different Interventions” Rapid Reviews COVID-19 MIT Press September 19, 2021.

CDC encourages facilities to consider some or all of the following tools to improve ventilation:

- Open outdoor air dampers beyond minimum settings to reduce or eliminate HVAC air recirculation. In mild weather, this will not affect thermal comfort or humidity. However, this may be difficult to do in cold, hot, or humid weather, and may require consultation with an experienced HVAC professional.
- Open windows and doors, when weather conditions allow, to increase outdoor air flow. Do not open windows and doors if doing so poses a safety or health risk (e.g., risk of falling, triggering asthma symptoms) to occupants in the building. Even a slightly open window can introduce beneficial outdoor air.
- Use fans to increase the effectiveness of open windows. To safely achieve this, fan placement is important and will vary based on room configuration. Avoid placing fans in a way that could potentially cause contaminated air to flow directly from one person to another (see FAQ below on indoor use of fans). One helpful strategy is to use a window fan, placed safely and securely

in a window, to exhaust room air to the outdoors. This will help draw outdoor air into the room via other open windows and doors without generating strong room air currents. Similar results can be established in larger facilities using other fan systems, such as gable fans and roof ventilators.

- Ensure ventilation systems operate properly and provide acceptable indoor air quality for the current occupancy level for each space.
- Rebalance or adjust HVAC systems to increase total airflow to occupied spaces when possible.
- Turn off any demand-controlled ventilation (DCV) controls that reduce air supply based on occupancy or temperature during occupied hours. In homes and buildings where the HVAC fan operation can be controlled at the thermostat, set the fan to the “on” position instead of “auto,” which will operate the fan continuously, even when heating or air-conditioning is not required.
- Improve central air filtration:
  - Increase air filtration to as high as possible without significantly reducing design airflow. Increased filtration efficiency is especially helpful when enhanced outdoor air delivery options are limited.
  - Make sure air filters are properly sized and within their recommended service life.
  - Inspect filter housing and racks to ensure appropriate filter fit and minimize air that flows around, instead of through, the filter.
- Ensure restroom exhaust fans are functional and operating at full capacity when the building is occupied.
- Inspect and maintain exhaust ventilation systems in areas such as kitchens, cooking areas, etc. Operate these systems any time these spaces are occupied. Consider operating them even when the specific space is not occupied, to increase overall ventilation within the occupied building.
- Consider portable high-efficiency particulate air (HEPA) fan/filtration systems to enhance air cleaning (especially in higher risk areas such as a nurse’s office or areas frequently inhabited by people with a higher likelihood of having COVID-19 and/or an increased risk of getting COVID-19). See the FAQ below on HEPA filters and portable HEPA air cleaners. (Note: Portable air cleaners that use filters less efficient than HEPA filters also exist and can contribute to room air cleaning. However, they should be clearly labeled as non-HEPA units.)
- Generate clean-to-less-clean air movement by evaluating and repositioning as necessary, the supply louvers, exhaust air grilles, and/or damper settings. See the FAQ below on Directional Airflow. This recommendation is easier to accomplish when the supply and exhaust points are located in a ceiling grid system.
- Consider using ultraviolet germicidal irradiation (UVGI) as a supplemental treatment to inactivate SARS-CoV-2, especially if options for increasing room ventilation and filtration are limited. Upper-room UVGI systems can be used to provide air cleaning within occupied spaces, and in-duct UVGI systems can help enhance air cleaning inside central ventilation systems.
- In non-residential settings, consider running the HVAC system at maximum outside airflow for 2 hours before and after the building is occupied.

## II. Methods

Based upon the above, the following methods were observed:

1. A visual inspection of a representative sample of classrooms within each building was conducted for indications of air quality concerns including water damage, musty odors, air flow and general cleanliness.
2. Carbon Dioxide (CO<sub>2</sub>) was measured as an indicator of fresh air supply in each of the representative areas evaluated at the center of the room, and where accessible, at the discharge of unit ventilators, using a TSI Q-Trak 7575 IAQ Monitor.
3. Volatile Organic Compounds (VOC's), Carbon monoxide, temperature and relative Humidity were also measured.

## III. Findings and Results

### General Observations

- Approximately 226 classrooms throughout the district were inspected and monitored during normal occupancy by students and staff.
- Classrooms were occupied by an average 8 to 15 students at the time of assessment, with exception of the High school which was monitored immediately after dismissal due to testing.
- Window position varied between classrooms and between buildings. On average 1 of 2-6 windows were open in each classroom at the time of inspection.
- There were no indications of unusual accumulations of dust or debris in any areas.
- There were no mold-like or musty odors present, and no evidence of unusual mold growth in the areas inspected.
- Unit ventilators in over 97% of classrooms throughout the district were operating at the time of inspection.

### Air Monitoring Findings

- Outdoor air was measured to contain approximately 386 to 460 parts per million carbon dioxide with temperature at 68 to 84°F. Relative humidity ranged between 60 to 77% over the inspection period.
- The average carbon dioxide level in all classrooms monitored was 748 parts per million; lower than to the PEOSHA guideline of 1000 ppm and the ASHRAE guideline of 700 ppm above outdoor levels.
- There were no elevations in carbon monoxide detected in any of the classrooms monitored.
- Temperature and relative humidity were within the PEOSH recommended range in most areas tested, averaging 74@ 66% RH, and considered normal.
- Fifteen percent (15%) of classrooms contained elevated carbon dioxide levels exceeding 1,000 parts per million, suggesting a need to open windows whenever feasible, and to inspect unit ventilator fan speed and/or outdoor air damper position as described in the PEOSHA indoor air quality standard.

A summary of inspection findings and air quality results is displayed in Table #1 below.

Table #1 – Q4 Air Quality Summary June 2022 - Scotch Plains Fanwood Schools

	Total Rooms inspected	Average CO2 levels (center of room)	Average Temperature (°F)	Average Relative Humidity (%)	Average number of windows open	Average number of windows present	Average number of students present
Scotch Plains - Fanwood High School	48	538	73	65	0	5	1
Evergreen Elementary	23	717	79	74	1	4	8
Coles Elementary	24	779	75	67	1	4	10
Terrill Middle School	24	1080	74	66	1	6	15
McGinn Elementary	23	716	75	67	1	3	10
Malcolm E. Nettingham Middle School	38	901	74	61	1	4	12
School One Elementary	22	674	74	67	0	2	10
Brunner Elementary	24	687	72	67	0	4	11
Total	226	-	-	-	-	-	-
Average	28	748	74	66	1	4	9

Detailed classroom findings and recommendations are contained on Table #2 at the end of this report.

#### IV. Conclusions and Recommendations

The COVID-19 Community Transmission level in Union County is Medium at the time of this report. The June 2022 routine Indoor Air Quality Assessment of the Scotch Plains – Fanwood schools revealed that fresh air supply was within normal ranges in 85% of the 226 rooms inspected in accordance with PEOSHA, CDC and NJ Department of Education guidelines for COVID-19 transmission risk reduction in each of the 8 schools inspected. There were no musty odors, no widespread visible water damage, and no visible mold contamination observed. There were no elevations in carbon monoxide. Temperature and relative humidity were with normal ranges given outdoor conditions at each of the schools. Based upon these findings the following recommendations should be considered:

##### Recommendations

1. Unit ventilators in particular classrooms as shown in school-specific Tables at the end of this report should be inspected for airflow rates and/or fresh air damper position.
2. When school re-opens in the fall of 2023, teachers should be encouraged to open as many windows as is feasible given outdoor temperature and humidity conditions, keep unit ventilators running, and operate supplemental air filters in classrooms, nurse offices and trailers where provided by the district as part of the layered COVID-19 prevention program.

Thank you for the opportunity to assist you with the evaluation. Our next routine air quality monitoring will be scheduled for September 2022. Please contact me with any questions at (856)764-3557.

Sincerely,  
*Richard A. Lynch*  
 Richard A. Lynch, MBA, CIH, CIEC  
 Certified Industrial Hygienist  
 NJ Licensed Indoor Environmental Consultant  
[www.esmcorp.com](http://www.esmcorp.com)

Reviewed and Authorized:  
*Richard M. Lynch*  
 Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM  
 NJ Licensed Indoor Environmental Consultant  
 President, ESMCorp  
[rlynch@esmcorp.com](mailto:rlynch@esmcorp.com)

School Name **Scotch Plains - Fanwood High School**  
 Inspection Type **Mold/Air Quality Inspection**  
 Date of inspection **6/16/2022**

**Environmental Safety**  
**Management Corporation**  
 An Air Quality Monitoring Division of EPA

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Inspected by: **Mr. Richard A. Lynch, MBA, CIH, CIEC**

Reviewed and Finalized by **Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President**

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatiles Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	397	1	76	60	0	-	
276	no	no	no	yes	0	24	4	12	398	0	74	67	0	400	
271	no	no	no	yes	2	24	1	11	424	0	76	65	0	403	
279	no	no	no	yes	2	25	1	8	425	0	75	69	<1	417	low flow, check fan speed
151	no	no	no	yes	0	25	0	16	432	0	74	65	<1	410	low flow, check fan speed
164	no	no	no	yes	0	21	1	11	437	0	72	72	0	399	
251	no	no	no	yes	0	24	0	5	445	0	75	72	<1	423	
266	no	no	no	yes	1	26	1	8	445	0	76	70	<1	425	
173	no	no	no	yes	0	30	0	0	467	0	72	67	0	440	
258	no	no	no	yes	0	24	0	9	479	0	73	65	0	440	
255	no	no	no	yes	1	27	0	11	480	0	74	65	0	440	
171	no	no	no	yes	0	23	0	8	481	0	71	71	<1	456	
153	no	no	no	yes	1	15	0	3	482	0	72	67	<1	454	
275	no	no	no	yes	0	24	0	8	482	0	73	61	<1	450	
101	no	no	no	yes	0	24	0	0	485	0.6	75	57	0	roof	
102	no	no	no	yes	0	14	0	0	493	0	75	63	<1	roof	
246	no	no	no	yes	0	24	0	0	498	0.1	71	62	0	roof	
233	no	no	no	yes	0	24	0	0	499	0	73	65	<1	roof	
253	no	no	no	yes	0	24	0	8	499	0	73	67	<1	465	
141	no	no	no	yes	0	18	0	0	504	0	71	70	0	roof	
172	no	no	no	yes	0	24	0	8	519	0	73	78	<1	520	
238	no	no	no	yes	0	25	0	0	520	0	70	64	0	roof	
204	no	no	no	yes	3	21	0	0	521	0	72	65	<1	roof	
135	no	no	no	yes	0	18	0	0	521	0.2	71	63	0	roof	
215	no	no	no	yes	0	25	0	0	521	0	70	61	0	roof	
139	no	no	no	yes	0	16	1	2	526	0.3	72	62	0	roof	
210	no	no	no	yes	1	25	0	2	532	0	71	63	0	roof	
259	no	no	no	yes	6	30	0	8	535	0	73	72	<1	467	
media center	no	no	no	yes	3	60	0	0	535	0	74	61	<1	roof	
242	no	no	no	yes	0	20	0	0	540	0	71	62	0	roof	
247	no	no	no	yes	1	25	0	0	544	0	73	63	<1	roof	

Adjusted  
42nd  
Ramp

7-7-22

School Name Scotch Plains - Fanwood High School  
 Inspection Type Mold/Air Quality Inspection  
 Date of inspection 6/16/2022



231201-0000  
 11/16/2021 11:00 AM  
 11/16/2021 11:00 AM  
 11/16/2021 11:00 AM  
 11/16/2021 11:00 AM

Inspected by: Mr. Richard A. Lynch, MBA, CIH, CIEC

Reviewed and Finalized by Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	397	1	76	60	0	-	
111	no	no	no	yes	0	24	0	0	551	0.7	72	55	0	roof	
267	no	no	no	yes	0	25	0	11	553	0	72	52	0	616	
178	no	no	no	yes	1	26	0	8	555	0	74	71	<1	503	
150	no	no	no	yes	0	24	0	8	557	0.3	73	65	0	1413	
207	no	no	no	yes	1	22	0	0	558	0	73	65	<1	roof	
232	no	no	no	yes	1	20	0	0	571	0	73	64	<1	roof	
236	no	no	no	yes	1	21	0	0	575	0	73	71	<1	roof	
157	no	no	no	no	0	22	0	8	582	0.4	71	68	0	510	reactivate unit ventilator
225	no	no	no	yes	1	25	0	0	596	0	73	70	<1	roof	
266	no	no	no	yes	3	26	0	8	599	0	70	55	0	589	
nurse	no	no	no	yes	1	4	0	4	619	0.2	72	67	0	roof	continue to use portable HEPA scrubber
282	no	no	no	yes	0	25	0	8	623	0	72	59	0	524	
158	no	no	no	yes	0	16	0	8	680	0	74	73	<1	650	
176	no	no	no	yes	1	25	0	8	694	0	74	71	<1	663	
254	no	no	no	no	1	27	0	8	696	0	74	67	<1	off	reactivate unit ventilator
133	no	no	no	yes	2	20	0	0	700	0	72	60	<1	roof	
130	no	no	no	yes	0	21	0	0	711	0	72	61	<1	roof	
154	no	no	no	no	0	25	0	8	720	0.1	73	61	0	587	reactivate unit ventilator
Average					1	23	0	5	538	0	73	65	0	523	

6-16-22

School Name Evergreen Elementary  
 Inspection Type Mold/Air Quality Inspection  
 Date of inspection 6/17/2022

**Environmental Safety**  
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 Air Quality • Mold Testing • Environmental Consulting

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Reviewed and Finalized by Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President

Location	General Observations								Average Room Measurements				Supply Measurements		
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	460	0	84	77	0	-	
122 media	no	no	no	yes	0	36	0	9	470	0	76	63	0	roof	
141	no	no	no	yes	3	12	1	6	510	0	80	83	0	472	
108	no	no	no	yes	0	12	0	4	525	0	78	71	0	475	
143	no	no	no	yes	2	4	0	2	527	0	81	59	0	roof	
129	no	no	no	yes	22	26	3	4	530	0	81	77	0	453	
127	no	no	no	yes	24	26	3	4	555	0	82	75	0	465	
131	no	no	no	yes	0	26	0	4	559	0	79	80	0	497	
112	no	no	no	yes	0	16	0	2	563	0	75	72	0	roof	
114	no	no	no	yes	14	24	0	2	564	0	77	79	0	roof	
115	no	no	no	yes	2	24	2	2	598	0	76	75	0	roof	
134	no	no	no	yes	19	25	0	4	610	0	78	84	0	557	
142	no	no	no	yes	1	4	0	2	641	0	81	67	0	roof	
nurse	no	no	no	yes	0	24	0	1	653	0	75	58	0	657	
128	no	no	no	yes	18	20	4	4	678	0	81	80	0	545	
130	no	no	no	yes	20	25	2	4	732	0	80	83	0	580	
106	no	no	no	yes	16	25	1	4	734	0	80	77	0	510	
119	no	no	no	yes	0	17	0	4	805	0	79	85	0	573	open windows
104	no	no	no	yes	21	24	0	4	876	0	81	77	0	630	open windows
120	no	no	no	yes	0	25	0	5	1042	0	79	74	0	890	open windows
123	no	no	no	yes	0	16	0	4	1074	0	80	75	0	970	open windows, inspect damper position
135	no	no	no	no	24	26	1	4	1165	0	74	56	0	-	open windows, reactivate unit ventilators
107	no	no	no	yes	0	12	0	4	1355	0	80	80	0	1181	open windows
Average					8	20	1	4	717	0	79	74	0	630	↗

*Adjusted  
 Ducts  
 Replace valve  
 D. ephraim  
 6-17-22*



**Environmental Safety  
Management Corporation**  
AN QUALITY HOLD TRUSTED SERVICE COMPANY

H1-REVIEWER:  
FOOTNOTES (4) (C)(7)(D)  
TO: GPO (1) (7)(9)-(C)(7)(D)  
(A) (1)(7)(1) (7)(9)-(C)(7)(D)  
UNCLASSIFIED

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	425	0	71	69	0	-	
113	no	no	no	yes	1	20	4	5	525	0.1	75	70	<1	465	
121	no	no	no	yes	0	23	0	4	547	0.6	73	69	0	428	
107	no	no	no	yes	0	24	0	3	560	0	76	68	<1	495	
128	no	no	no	yes	1	7	0	2	563	0.3	73	66	0	roof	
media center	no	no	no	yes	2	50	0	4	588	0	75	68	<1	roof	
148	no	no	no	yes	0	20	0	4	648	0	74	63	<1	594	
131	no	no	no	yes	2	5	0	2	662	0	76	68	<1	roof	
145	no	no	no	yes	11	20	2	4	670	0.7	73	62	0	577	
130	no	no	no	yes	6	8	0	2	681	0	76	69	<1	roof	
133	no	no	no	yes	9	12	0	2	729	0	76	69	<1	roof	
129	no	no	no	yes	21	21	0	4	744	0.7	74	67	0	roof	
146	no	no	no	yes	14	24	0	4	772	0	75	63	<1	699	open windows, inspect damper
111	no	no	no	yes	16	20	3	6	775	0.5	74	68	0	631	
118	no	no	no	yes	20	24	0	8	778	0.5	74	68	0	500	open windows
nurse	no	no	no	yes	0	4	0	1	804	0.4	74	59	0	788	open windows, inspect damper
144	no	no	no	yes	0	21	2	4	805	0	76	69	<1	655	
141	no	no	no	yes	17	20	2	8	812	0.7	75	67	0	550	
115	no	no	no	yes	17	24	1	4	851	0	76	68	<1	584	
142	no	no	no	yes	17	20	1	4	876	0	76	69	<1	613	
149	no	no	no	yes	15	25	2	4	884	0.6	73	60	0	864	inspect damper
136	no	no	no	yes	21	24	3	4	965	0	76	70	<1	584	
117	no	no	no	yes	22	25	1	4	1119	0	76	73	<1	912	open more windows
137	no	no	no	yes	20	24	2	8	1120	0.6	75	68	0	933	open more windows
134	no	no	no	yes	18	24	0	4	1215	0.1	76	73	<1	815	open windows
Average					10	20	1	4	779	0	75	67	0	649	

OK

7-7-22

School Name Terrill Middle School  
 Inspection Type Mold/Air Quality Inspection  
 Date of inspection 6/16/2022

**Environmental Safety**  
**Management Corporation**  
 Air Quality, Mold Testing, Environmental, OSHA

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Inspected by: Mr. Richard A. Lynch, MBA, CIH, CIEC

Reviewed and Finalized by Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	386	0	68	73	0	-	
2	no	no	no	yes	1	24	3	7	619	0	74	66	0	519	
tec	no	no	no	yes	1	30	0	8	657	0	76	70	<1	roof	
5	no	no	no	yes	0	25	3	7	665	0	75	70	<1	545	
13	no	no	no	yes	7	24	0	7	724	0	75	65	0	581	
19	no	no	no	yes	6	15	0	4	802	0	74	65	0	574	open windows
25	no	no	no	yes	20	25	0	7	835	0.4	73	66	0	680	open windows
gym	no	no	no	yes	65	100	0	0	840	0	76	70	<1	roof	
15	no	no	no	yes	10	24	2	7	849	0	74	68	0	636	
3	no	no	no	yes	1	24	0	7	861	0	75	71	<1	722	open windows
nurse	no	no	no	yes	5	5	0	7	870	0.5	75	67	0	591	open windows
6	no	no	no	yes	18	24	2	7	894	0	74	68	0	620	
7	no	no	no	yes	16	24	3	10	1010	0.6	75	67	0	807	
1	no	no	no	yes	7	24	0	7	1078	0	75	73	<1	955	open windows
12	no	no	no	yes	20	24	0	7	1137	0	76	73	<1	692	open windows
14	no	no	no	yes	14	24	0	7	1171	0	77	72	<1	892	open windows
24	no	no	no	yes	16	26	2	7	1182	0	73	64	<1	962	open more windows
35	no	no	no	yes	24	26	0	4	1222	0	74	61	<1	763	open windows
22	no	no	no	no	20	24	0	4	1249	0	72	73	<1		open windows, reactivate unit ventilor
28	no	no	no	yes	17	25	0	7	1312	0	74	65	<1	785	open windows
29	no	no	no	yes	14	24	1	7	1367	0.7	73	57	0	1160	open windows
18	no	no	no	yes	20	24	0	4	1389	0	74	51	<1	1293	inspect damper position
38	no	yes	no	yes	22	24	0	4	1411	0	74	58	<1	1025	weird smell, open windows
32	no	no	no	yes	20	24	0	7	1523	0	74	69	<1	1277	open windows
39	no	no	no	yes	25	27	0	4	2263	0.6	73	52	0	2243	open windows, inspect damper position
Average					15	27	1	6	1080	0	74	66	0	872	

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7-7-22

School Name School One Elementary  
 Inspection Type Mold/Air Quality Inspection  
 Date of inspection 6/17/2022

**Environmental Safety**  
**Management Corporation**  
 400 West Main Street, Suite 100, Orem, UT 84057  
 Phone: (801) 225-0000 Fax: (801) 225-0001

11/18/2018  
 10/18/2019  
 10/18/2020  
 10/18/2021  
 10/18/2022

Inspected by: Mr. Richard A. Lynch, MBA, CIH, CIEC

Reviewed and Finalized by Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside									425	0	84	77	0		
130T	no	no	no	yes	0	24	0	4	457	0	72	58	0	445	
202	no	no	no	yes	0	10	0	2	551	0	71	66	0	roof	
nurse	no	no	no	yes	1	6	0	0	576	0	75	62	0	roof	
131 T	no	no	no	yes	0	24	0	4	588	0	73	63	0	553	
106	no	no	no	yes	0	24	0	2	618	0	74	75	0	roof	
113	no	no	no	yes	1	4	0	0	620	0	74	66	0	roof	
207	no	no	no	yes	0	4	0	1	620	0	73	70	0	roof	
209	no	no	no	yes	0	25	1	2	620	0	73	70	0	roof	
media center	no	no	no	yes	1	40	0	0	646	0	72	57	0	roof	
108	no	no	no	yes	15	24	0	3	660	0	75	71	0	roof	
206	no	no	no	yes	15	24	2	2	661	0	72	65	0	roof	
102	no	no	no	yes	8	13	0	2	677	0	75	67	0	roof	
204	no	no	no	yes	19	24	1	2	685	0	73	66	0	roof	
109	no	no	no	yes	15	24	0	2	688	0	75	71	0	roof	
111	no	no	no	yes	14	24	0	3	710	0	75	71	0	roof	
103	no	no	no	yes	15	18	0	2	734	0	75	68	0	roof	
210	no	no	no	yes	19	24	0	2	740	0	73	70	0	roof	
213	no	no	no	yes	18	24	0	2	746	0	73	67	0	roof	
211	no	no	no	yes	19	21	0	2	785	0	73	67	0	roof	open windows
201	no	no	no	yes	20	24	0	2	798	0	72	69	0	roof	open windows
101	no	no	no	yes	14	24	1	2	799	0	77	63	0	roof	
104	no	no	no	yes	19	24	0	2	843	0	75	69	0	roof	open windows
Average					10	21	0	2	674	0	74	67	0	499	-

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7-7-22

**Environmental Safety  
Management Corporation**  
Attn: Quality Mgmt. Training, Greenwood, CT 06430

21 Street Street  
 Broomfield, NJ 07003  
 Tel: (908) 704-2557  
 Fax: (908) 704-2557  
 WWW.BROOKFIELD.COM

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	386	0.7	71	63	0	-	
137	no	no	no	yes	0	24	2	4	448	0.6	75	67	0	405	
136	no	no	no	yes	0	24	3	4	462	0	76	68	<1	432	
108	no	no	no	yes	0	24	0	2	520	0	75	73	<1	roof	
107	no	no	no	yes	17	25	0	6	559	0.7	74	67	0	roof	
118	no	no	no	yes	18	24	0	4	595	0.6	74	68	0	532	
106	no	no	no	yes	6	6	0	2	610	0.7	74	68	0	roof	
131	no	no	no	yes	13	25	3	8	628	0.6	75	66	0	452	
103	no	no	no	yes	0	26	0	3	663	0	74	65	<1	572	
130	no	no	no	yes	0	25	2	2	707	0	76	69	<1	587	
110nurse	no	no	no	yes	1	5	0	2	727	0.7	74	64	2	roof	
145	no	no	no	yes	1	4	0	2	736	0.7	74	60	0	roof	
133	no	no	no	yes	22	24	0	4	761	0	77	70	<1	608	open windows
152	no	no	no	yes	22	25	0	2	772	0	74	61	<1	roof	open windows
146	no	no	no	yes	1	2	0	1	785	0	75	61	<1	roof	open windows
121	no	no	no	yes	25	26	1	4	789	0	76	73	<1	612	
117	no	no	no	yes	1	25	0	3	790	0	74	67	<1	662	open windows
120	no	no	no	yes	21	25	3	4	794	0.3	75	68	0	590	
150	no	no	no	yes	10	25	0	2	819	0.4	75	66	0	roof	open windows
149	no	no	no	yes	20	25	2	2	822	0.3	75	67	0	roof	
104	no	no	no	yes	0	26	0	3	876	0	74	70	<1	729	open windows
123	no	no	no	yes	22	24	1	4	945	0	77	73	<1	573	
124	no	no	no	yes	18	25	1	4	950	0.4	76	68	0	750	
Average					10	21	1	3	716	0	75	67	0	577	

7-7-22

School Name Brunner Elementary  
 Inspection Type Mold/Air Quality Inspection  
 Date of inspection 6/16/2022

Environmental Safety  
 Management Corporation  
 10101 Midway Road, Suite 100  
 Dallas, TX 75243-1000  
 Phone: (214) 343-7000  
 Fax: (214) 343-7001  
 Email: info@emsafety.com

Inspected by: Mr. Richard A. Lynch, MBA, CIH, CIEC

Reviewed and Finalized by Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President

10101 Midway Road  
 Suite 100  
 Dallas, TX 75243-1000  
 Phone: (214) 343-7000  
 Fax: (214) 343-7001  
 Email: info@emsafety.com

General Observations									Average Room Measurements					Supply Measurements	
Location	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside	-	-	-	-	-	-	-	-	392	0.7	71	68	0	-	
206	no	no	no	yes	0	24	2	4	470	0.2	72	65	0	410	
127	no	no	no	yes	1	16	1	3	470	0	72	63	<1	roof	
129	no	no	no	yes	1	6	0	2	484	0	72	61	<1	roof	
123	no	no	no	yes	0	4	1	2	508	0	71	66	0	roof	
media center	no	no	no	yes	0	24	0	4	508	0	72	61	<1	roof	
122	no	no	no	yes	0	4	0	0	529	0	73	69	<1	roof	
202	no	no	no	yes	16	24	0	8	547	0	70	73	0	438	remove obstructions from unit ventilator
125	no	no	no	yes	14	15	0	4	558	0	72	64	<1	roof	
207	no	no	no	yes	4	20	0	4	560	0	73	69	<1	515	
119	no	no	no	yes	1	24	1	4	564	0.1	72	71	0	463	
104 nurse	no	no	no	yes	0	2	0	2	579	0.6	71	61	0	492	continue use of portable air scrubber
210	no	no	no	yes	0	22	0	4	590	0	70	61	<1	549	remove obstructions from unit ventilator
208	no	no	no	yes	2	20	0	4	656	0	72	59	<1	614	
main office	no	no	no	no	2	4	0	2	656	0	72	61	<1	na	
205	no	no	no	yes	18	24	0	4	662	0.2	70	62	0	562	
105	no	no	no	yes	24	26	3	3	733	0	73	68	<1	671	
121	no	no	no	yes	17	22	0	7	786	0.1	72	69	0	591	open windows
203	no	no	no	yes	16	24	0	8	825	0.2	70	63	0	678	open windows
kindergarten 3	no	no	no	yes	22	24	0	6	833	0	72	72	<1	649	open windows
107	no	no	no	yes	20	24	0	6	837	0	71	67	<1	roof	open windows
211	no	no	no	yes	14	20	0	4	853	0	71	66	<1	547	open windows
113	no	no	no	yes	20	23	1	4	901	0	75	75	<1	595	open more windows
115	no	no	no	yes	21	24	0	4	1070	0	75	74	<1	912	open windows
111	no	no	no	yes	21	24	0	4	1308	0	75	76	<1	782	open windows
Average					11	18	0	4	687	0	72	67	0	604	

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7-8-22

School Name **Malcolm E. Nettingham Middle School**  
 Inspection Type **Mold/Air Quality Inspection**  
 Date of inspection **6/16/2022**



2015-2016 School Year  
 10/15/2015 - 10/15/2016  
 10/15/2016 - 10/15/2017  
 10/15/2017 - 10/15/2018  
 10/15/2018 - 10/15/2019  
 10/15/2019 - 10/15/2020  
 10/15/2020 - 10/15/2021  
 10/15/2021 - 10/15/2022

Inspected by: **Mr. Richard A. Lynch, MBA, CIH, CIEC**

Reviewed and Finalized by **Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President**

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside									389	0	70	71	0		
media center	no	no	no	yes	6	65	0	3	457	0	73	71	0	roof	
315	no	no	no	yes	2	6	0	2	486	0	74	61	<1	467	
120	no	no	no	yes	6	24	0	1	517	0.1	72	63	0	roof	
215	no	no	no	yes	1	4	0	2	526	0	76	60	<1	432	
118	no	pp	no	yes	6	17	0	2	569	0	73	63	<1	roof	
206	no	no	no	yes	3	22	0	4	571	0.1	74	62	0	416	
203	no	no	no	yes	4	24	0	6	591	0	74	64	0	457	
119b	no	no	no	yes	25	25	0	0	614	0	73	64	0	roof	
102	no	no	no	yes	18	24	3	4	634	0.1	75	65	0	472	
213	no	no	no	yes	15	24	2	6	641	0.1	73	62	0	456	
220	no	no	no	yes	18	18	0	7	644	0.2	74	55	0	544	
104	no	no	no	yes	18	24	2	4	665	0	79	68	<1	527	
208	no	no	no	yes	3	24	0	4	665	0	74	58	<1	518	
119e	no	no	no	yes	20	25	0	1	668	0	73	64	0	roof	
302	no	no	ceiling tiles	yes	2	22	0	5	705	0	75	53	<1	567	
301	no	no	no	yes	0	16	0	6	715	0.7	75	50	0	525	
201	no	no	no	yes	21	24	0	8	752	0	76	64	<1	576	open windows
nurse	no	no	no	yes	1	4	0	0	753	0.5	73	57	0	roof	continue use of portable air scrubber
216	no	no	no	no	0	24	0	8	790	0.4	73	55	0		open windows reactivate unit ventilator
219	no	no	no	yes	22	24	5	6	792	0	76	64	<1	588	
305	no	no	no	yes	7	22	0	4	813	0.5	73	58	0	514	open windows
307	no	no	no	yes	6	22	0	4	902	0.2	73	58	0	690	open windows
313	no	no	no	yes	6	20	4	4	930	0.2	73	58	0	651	
108	no	no	no	yes	14	16	0	2	934	0	75	59	<1	654	open windows
211	no	no	no	yes	13	24	0	6	939	0	76	63	<1	675	open windows
202	no	no	no	yes	21	26	0	5	956	0	75	67	<1	686	open windows
207	no	no	no	yes	19	24	0	4	1067	0	75	65	<1	596	open windows
303	no	no	no	yes	12	22	0	5	1067	0	75	69	<1	711	open windows
316	no	no	no	yes	16	24	0	6	1159	0	75	61	<1	1040	open windows
113	no	no	no	yes	22	24	0	5	1250	0	75	58	<1	1060	open windows

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School Name **Malcolm E. Nettingham Middle School**  
 Inspection Type **Mold/Air Quality Inspection**  
 Date of inspection **6/16/2022**

**Environmental Safety  
 Management Corporation**  
Air Quality, Mold Testing, Environmental, OSHA

251 E. 1st Street  
 Annapolis, MD 21403-7705  
 Tel: (410) 764-2557  
 Fax: (410) 764-0751  
 www.esmcorp.com

Inspected by: **Mr. Richard A. Lynch, MBA, CIH, CIEC**

Reviewed and Finalized by **Dr. Richard M. Lynch, Ph.D., CIH, CMC, CMRS, CHFM - President**

Location	General Observations								Average Room Measurements					Supply Measurements	
	visible mold	Musty Odors?	Visible Water Damage?	HVAC running	Actual students	Potential Students	Windows Open?	total windows present	Carbon Dioxide (ppm)	Carbon Monoxide (ppm)	°F	Relative Humidity %	Volatile Organics (ppm)	CO2 @ Supply	notes
outside									389	0	70	71	0		
117	no	no	no	yes	24	24	2	4	1254	0	75	60	<1	1051	open more windows
318	no	no	no	yes	20	24	1	6	1282	0.1	74	58	0	875	check unit ventilator fan speed
116	no	no	no	yes	25	26	0	5	1356	0	74	55	<1	1193	open windows
114	no	no	no	yes	1	24	0	4	1462	0	74	64	<1	1309	open windows
310	no	no	no	yes	9	10	2	4	1470	0	75	55	<1	1460	inspect damper position
106	no	no	no	yes	21	22	0	3	1489	0	77	54	<1	1373	open windows, inspect damper position
306	no	no	no	yes	24	24	0	4	1497	0	75	57	<1	1275	open windows, inspect damper position
319	no	no	no	yes	22	24	0	6	1665	0	75	58	<1	1279	open windows, inspect damper position
Average					12	22	1	4	901	0	74	61	0	762	

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7-12-22