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and Human Services

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To: Tom Pratt  
215 South Franklin Avenue  
Berlin, NJ 08009

From: Christopher Costa

Date: 10/01/2018

RE: 18-08-10-0700-C  
Berlin Community School IAQ Investigation  
215 South Franklin Avenue  
Berlin, NJ 08009

## 1.0 Background and Observation

An inspection was conducted on September 20, 2018, at the Berlin Community School located at 215 South Franklin Avenue in Berlin. According to information given to the Department of Health, the investigation was requested to ensure that air quality was within the Public Employees Occupational Safety and Health recommended standards. The weather on September 20, 2018 was sunny and 69.3 degrees F with a relative humidity of 78.7%.

A small area (approximately less than 1 sq. ft.) of fungal growth was observed on a ceiling tile and wall in Room 45. This area, by recommendations of the Environmental Protection Agency, can be cleaned using EPA approved methods for fungal contamination in schools and commercial buildings. No fungal growth was observed throughout any of the other areas inspected. All levels for temperature, carbon monoxide, and carbon dioxide, by NJ PEOSH Standards, were all within the acceptable ranges for indoor air quality. The PEOSH IAQ Standard 12:100-13.3 specifies that the acceptable ranges for temperatures range from 68 degrees Fahrenheit to 79 degrees Fahrenheit, while ASHRAE Standards provide recommended ranges for temperature and humidity that are intended to satisfy the majority of building occupants. These ranges vary for cold and hot weather. OSHA's time weighted average exposure limit for carbon monoxide is 25 parts per million for an 8-hour work day. The PEOSH IAQ Standard N.J.A.C.12:100-13.3 recommends carbon dioxide levels to remain under 1,000 parts per million. ASHRAE Standard 62.1 specifies that relative humidity levels should not exceed 65%.

## 2.0 Sampling Methods and Sample Locations

At the time of inspection, it was determined that non-viable fungal spore trap samples were not necessary this time.

### 3.0 Sample Results and Conclusions

The fungal contamination found in Room 45 shall be cleaned up using the EPA mold remediation guidelines for schools and commercial buildings. No containment is required for this clean up and Method number 3 (refer to document attached to this report) is recommended.

The HVAC vents should be cleaned regularly to avoid the accumulation of dust. Also, whenever a stained ceiling tile is found it should be removed and replaced. The source of the leak or water intrusion should be identified and fixed to prevent the possibility of fungal growth.

Any room that was found to have elevated carbon dioxide levels should have the HVAC system looked at to ensure enough fresh air is being brought into the space that it is supplying. The time-weighted average (TWA) for Carbon dioxide in an 8-hour work day is 5000 parts per million. The highest number recorded at the time of inspection was 2063 parts per million, which is well below the TWA.

Several rooms throughout the building had slightly elevated relative humidity levels. These areas should be addressed to ensure that Indoor Air Quality meets the recommended standards set forth in the PEOSH IAQ Standard and ASHRAE standard 62.1. No water intrusion issues were found at the time of investigation. If building materials should get wet due to a leaky pipe or roof leak, these materials should be removed within 48 hours, the source should be identified and fixed, and the building materials should be replaced. Overall, the school appeared to be very clean. The indoor air quality readings can be found on the attached chart.

Employees have a role in maintaining good indoor air quality within their workplace. Employees should ensure that they do not introduce unauthorized chemicals (i.e. fragrances, air fresheners, essential oil diffusers, cleaning solvents, ozone generators) into the workplace. In addition, if employees observe situations which may lead to poor indoor air quality (i.e. inoperable windows, water leaks, visible mold) they should notify administration/ maintenance of the situation so that it can be addressed promptly.

Employees are responsible for maintaining mechanical and passive ventilation systems by ensuring that louvers and diffusers remain clear to allow the free flow of air. Intentionally blocking, diverting, or otherwise manipulating components (i.e. thermostat,) of the ventilation system may result in disruption of the ventilation system in the immediate area or other occupied areas of the building.

Also, the recordkeeping provision of the Indoor Air Quality (IAQ) standard requires that the following items be maintained and available to employees within 10 days of a request, and immediately to PEOSH inspectors during an inspection: Written indoor air quality program, documentation of designated person training, written preventive maintenance program, 36 months of preventive maintenance log. The employer also should maintain several IAQ compliance documents including: As-built construction documents, HVAC system commissioning reports, HVAC systems testing, adjusting and balancing reports, operations and maintenance manuals, water treatment logs, and operator training materials.

**It should be noted that the conditions observed during this inspection are considered to be a “snapshot” of that point in time. With indoor air quality, conditions can change over time in relation**

**to the outdoor environment and other factors. This is why it is vital to ensure that the HVAC system is functioning properly, and that all areas of moisture intrusion are addressed promptly.**

Sincerely,

Christopher Costa  
Senior Environmental Health Specialist  
Hazardous Materials Unit

BERLIN COMMUNITY SCHOOL INSPECTION 09/20/2018 @ 08:00 Hrs

Location	Carbon Dioxide (ppm)	Temperature (°F)	Relative Humidity (%)	Carbon Monoxide (ppm)
Outside	490	69.3	78.7	0.8
Administration Off.	550	76.7	55.7	0.0
Martello Office	570	74.8	67.5	0.0
84	584	73.5	70.0	0.0
82	680	73.5	71.5	0.0
80	538	73.3	69.9	0.1
E Wing	617	72.8	72.0	0.0
81	678	73.0	72.1	0.0
79	875	72.7	68.9	0.0
77	949	72.8	65.1	0.0
CST	759	72.4	61.0	0.0
Middle School Off.	794	72.8	65.3	0.0
E Wing	796	73.2	69.2	0.0
72	715	72.3	71.8	0.0
71	715	72.3	71.8	0.0
70	550	71.6	57.3	0.0
68	823	71.5	61.6	0.0
69	783	71.6	73.4	0.0
E Wing	779	71.8	71.1	0.0
67	854	72.1	73.5	0.0
63	601	72.3	72.1	0.1
66	996	72.5	72.3	0.0
64	688	72.6	72.3	0.0
61	689	72.2	71.5	0.0
A Wing Electrical Rm	642	72.1	72.7	0.0
62	604	71.9	68.9	0.0
60	589	72.0	73.3	0.0
58	636	72.0	62.2	0.0
56	594	71.6	54.1	0.0
55	606	71.0	65.6	0.0
Kitchen	624	73.0	59.1	0.0
47	579	71.2	58.4	0.0
46	924	71.2	64.1	0.0
44	620	70.9	65.0	0.4
45	458	71.4	74.8	0.0
D Wing	772	70.7	74.0	0.0
42	674	71.5	73.3	0.0
43	1199	72.9	71.5	0.0
36 A	824	71.5	54.3	0.7

37	1121	71.6	71.1	0.8
36	1528	72.5	77.8	0.2
35	1750	72.9	76.0	0.4
34	1529	72.8	75.0	0.1
33	1754	72.1	60.7	0.0
32	1778	72.0	64.0	0.1
31	1890	73.0	71.6	0.6
30	1412	72.6	64.1	0.0
C Wing	1490	72.8	67.5	0.1
29	1888	72.4	74.4	0.2
28	1418	72.0	60.2	0.0
27	1501	71.8	70.2	0.0
26	1404	71.9	60.2	0.0
25	1364	71.8	69.0	0.0
24	991	72.0	70.1	0.0
23	1462	71.3	60.1	0.0
22 A	729	72.0	74.6	0.0
22	973	71.9	77.4	0.0
21	1051	71.1	54.7	0.0
20	1430	71.2	60.1	0.0
19	2063	73.3	65.0	0.0
18	1493	73.4	51.6	0.0
17	1890	72.6	60.5	0.1
Upper B	1472	72.7	66.8	0.0
16	1483	73.7	68.1	0.0
14	1420	73.5	66.0	0.0
12	884	73.3	60.2	0.0
15	1203	73.1	56.0	0.0
11	1322	73.6	59.8	0.0
10	1134	73.3	58.4	0.0
9	987	72.0	63.5	0.0
8	1225	71.8	59.9	0.0
7	1238	71.4	64.0	0.0
6	1157	72.9	65.0	0.0
5	1145	72.9	66.7	0.1
4	1049	71.8	58.3	0.0
3	1401	72.3	61.5	0.1
2	1666	72.6	59.4	0.0
1	1053	72.7	67.6	0.0
51	1113	70.1	47.9	0.0
50	940	72.4	53.8	0.0

Elementary Off.	914	72.2	47.4	0.0
52	781	71.7	60.0	0.0
52 A	794	72.4	73.3	0.0
54	838	72.2	67.1	0.0
38	807	71.6	49.4	0.0
Gym A	604	70.8	67.2	0.1
Gym B	621	70.1	71.9	0.0
Barry Office	718	70.0	69.2	0.0
Girls Locker Room	655	70.0	73.9	0.7
Viereck Office	626	70.5	72.2	0.0
Boys Locker Room	635	70.6	73.1	0.0
Caruso Office	643	70.2	73.6	0.0