Indiana Department of Health

Eric J. Holcomb
Governor

Lindsay M. Weaver, MD, FACEP
State Health Commissioner

February 14, 2024

MB3 99 RLP#569
Dr. Jon Milleman, Superintendent
Lebanon Community School Corporation
1810 N. Grant Street
Lebanon, IN 46052

Dear Superintendent Milleman:

The purpose of this letter is to report the result of our indoor air quality evaluation at Perry-Worth Elementary School on February 8th. This evaluation was conducted at the request of a concerned citizen to address the health concerns of the occupants that may be related to indoor air quality of the school. The complaint was received by the Indiana Dept. of Environmental Management (IDEM). The complaint was then referred to our office.

Upon arrival, there was a discussion on what transpired and may have prompted the complaint. It is our understanding that on or about February 2nd, floor sealants and adhesives were being used in the building for the restroom floor and windows. Chad Martin, Director of Operations and Resources said the odor was quite strong and one of the nearby pods had to be evacuated. Some of the staff members complained of having health issues and had to go to the emergency room. John Triller, Operations & Maintenance Manager stated testing was done inside the school building for volatile organic compounds (VOCs) and the concentration levels did not exceed 4 ppm. When the Lebanon Fire Department arrived, they did not detect any indoor air contaminants with their testing equipment. We learned that air measurements were being taken by the school and recorded daily. The measurements were available for review during the inspection. Measurements taken February 5th through the 8th indicated no VOCs were detected in the school on those days.

Walk Around Inspection: A walkaround inspection was conducted with Principal, Amber Moore, Director of Operations and Maintenance, Chad Martin, Operations & Maintenance Manager, John Triller, Lebanon Fire Dept Deputy Chief of Administration, Jason Hendricks, and several others. The areas included hallways, lunchroom, gymnasium, and several classrooms.

An IAQ-Calc TSI 7545 Instrument was used to take air quality measurements for carbon dioxide, relative humidity, and temperature.

Carbon Dioxide: The Carbon dioxide (CO_2) levels inside were measured with the highest reading 1077 parts CO_2 per million parts of air (ppm) in room E-1. The School Indoor Air Quality rule, 410 IAC 33-4-2 states "(a) "Outdoor Air shall be supplied to classrooms when occupied. (b) Carbon dioxide concentrations in the breathing zone shall never exceed 700 ppm over the outdoor concentration", in this case giving a limit of 1139 ppm. ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) recommends 15 cfm (cubic feet per minute) of outdoor air per person for classrooms.

Relative Humidity: The outdoor relative humidity was measured at 40 percent (%) and the indoor relative humidity had a range of 27% to 32%. The American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) recommends the relative humidity in habitable spaces preferably should be maintained between 30% and 60% to minimize growth of allergenic and pathogenic organisms. Humidity levels above 50% have been found to increase the population size of molds, fungi and mites that may cause allergies. The evidence suggests that humidity levels should be maintained between 40% and 50% to reduce the incidence of upper respiratory infections and to minimize the adverse effect on people suffering from asthma or allergies. Such a range would be hard to maintain, however, exposure to higher or lower levels is unlikely to affect the health of most people.

Temperature: The outdoor temperature was measured at 56 degrees Fahrenheit and the indoor temperature had a range of 70 to 72 degrees.

Carbon Monoxide: A 4-gas monitor (QRAE II Model) was used to test the air for carbon monoxide, and hydrogen sulfide. No carbon monoxide or hydrogen sulfide gas was detected in the school.

VOCs: A RAE Mini-Rae 3000 handheld photo-ionization detector (PID) was used to screen for volatile organic compounds (VOC's) in the school building. The instrument's detection is approximately 1 part per million (ppm), but the detection limit varies with the specific organic compounds present in the air. VOC's can be found in various products such as housekeeping, maintenance, solvents, petroleum products, building and furnishing materials. No VOCs were detected in the school with the instrument.

Dust Particulates: There was no accumulated dust buildup in the classrooms or in the hallways that would indicate an issue with dust migrating from the construction site into the classrooms or hallways. According to Mr. Triller, classrooms and hallways are cleaned daily by the custodial staff. Mr. Triller added that HEPA air filters on the HVAC units are changed monthly, and carbon air filters and air scrubbers have been added to help with odors and to minimize dust.

Based on sample results and our visual inspection we note the following:

1) **410 IAC 33-4-8 (c) states " The school shall adopt and enforce a policy that minimizes student and staff exposure to chemicals." And 410 IAC 33-4-10 states "During building renovation or additions, steps must be taken to ensure pollutants from these areas do not enter occupied spaces."** At the time of our visit, our instruments did not detect any VOCs or other contaminants in the school building. There were no chemicals being applied at the time of the inspection. We do recommend for future applications that you plan for additional ventilation or schedule the application when students and staff are not in the building.

2) When applying sealants, adhesives, solvents, welding, cutting and/or using gas-powered equipment inside the building or construction area, please ensure control measures are used to keep pollutants from entering occupied spaces. These steps may include negative pressure systems, containment, fans, local exhaust units, and properly sealed doors.

3) During the walk around inspection, we did see ceiling tiles that were stained especially in classrooms C-3, D-1, and D-4. The stains appear to be from previous water leaks. We suggest you inspect the ceiling plenum space for roof leaks or

ongoing drips or leaks from pipes. Please replace the stained tiles when leaks are discovered.

410 IAC 33 requires you to respond within 60 days to any actions you take based upon this report.

The School Indoor Air Quality rule 410 IAC 33-6-2 requires this report and your response to this report to be posted within 5 working days and remain posted for 14 at the location of the school building stated in the report so it is accessible to students, parents, and employees. The rule also requires the response that you send to us to be posted at the school for 14 days.

Individuals experiencing any health problems should seek medical advice from a physician.

If you have questions, I can be reached at 317.682.9030.

Sincerely,

RICK PLEW
Industrial Hygienist
Indoor Air Section, Environmental Public Health Division
Enclosure

TABLE 1

Perry-Worth Elementary School
3900 E. 300 South
Lebanon, IN 46052

Computed Microbiological Air Sample Results
Taken February 8, 2024

LOCATION	NO. OF Occupants	Temp. degrees F	Relative Humidity %	CARBON Dioxide (ppm)	O_2 Oxygen %	H_2S Hydrogen sulfide (ppm)	CO Carbon Monoxide (ppm)	VOC's (ppm)
Pod A- A3	24	71	32	1073	20.9	0	0	0
A1	24	71	30	959	20.9	0	0	0
G8	23	70	28	674	20.9	0	0	0
Pod B- B4	25	70	31	955	20.9	0	0	0
B2	26	71	31	1032	20.9	0	0	0
Pod C- C1	26	70	29	859	20.9	0	0	0
C3	22	70	29	887	20.9	0	0	0
Pod D- D4	26	70	30	780	20.9	0	0	0
D1	26	70	30	960	20.9	0	0	0
Cafeteria	0	71	30	775	20.9	0	0	0
Gym	27	71	29	718	20.9	0	0	0
E-1	22	72	31	1077	20.9	0	0	0
G-6	2	71	27	631	20.9	0	0	0
D-5 Prep	0	72	29	635	20.9	0	0	0
Outdoor	-	56	40	439	20.9	0	0	0

Notes:

% ---------percent
ppm-------parts per million

LEBANON
COMMUNITY SCHOOL CORPORATION

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Lebanon Community School Corporation response to IDOH report on February 8, 2024

Thank you for your report and the data and suggestions contained within it. The onsite construction manager will continue, as has been the practice from the outset of all construction and renovation at this location, to apply industry standard control measures. In accordance with and prior to receiving your recommendations, we-scheduled the remaining applications of resinous flooring for times when the building is unoccupied by staff and students. Additionally, we have replaced the stained ceiling tiles referenced in the report. We will continue to monitor and replace tiles should any further leaks be identified. There has been extensive roof work performed resulting from integrating the room additions to the existing building. It is within the scope of this work to address any additional leaks should any be discovered. We monitor roofs as well as all other areas of the building envelope through a service agreement with a company specializing in exterior building assessments. We have contracted with a qualified, independent air quality company to complete an investigation and will conduct another investigation in late summer of 2024 prior to staff and students returning next school year. We will share results with the Perry-Worth community as we receive them. We will continue to circulate outside air to continue satisfying the recommended exchange of fresh, outside air with indoor air. Through the use of our handheld meters, we will continue daily monitoring of the air quality in the building. Air scrubbers will remain in the building to further purify the air beyond our existing filtration (at or above ASHRAE recommendations) in our inherent air handlers.