



Eric J. Holcomb  
*Governor*

Lindsay M. Weaver, MD, FACEP  
*State Health Commissioner*

February 21, 2024

RDC 571  
Michael Beresford, Superintendent  
Carmel Clay Schools  
5201 E Main Street  
Carmel, IN 46033

Dear Superintendent Beresford:

The purpose of this letter is to report the result of our indoor air quality evaluation of Creekside Middle School on February 14<sup>th</sup>. This evaluation was conducted at the request of Tracey Pitchford with your Facilities Department specifically to address health concerns for the occupants of Room 214 that may be related to the indoor air quality.

The Indiana State Department of Health's Microbiological Laboratory incubated and counted the fungal and bacterial units. The colony forming units per cubic meter of air (CFU/M<sup>3</sup>) were computed taking the fungal or bacterial counts and dividing by the total volume of the sampled air. The indoor fungal concentration was lower than the outdoor concentration. Please refer to Table 1 for further details. There are no limits established as an acceptable concentration of fungal counts indoors. There are guidelines that recommend fewer counts indoors than outdoors. The indoor bacteria concentration was higher than the outdoor concentration but within the range typically seen indoors. Bacteria can come from a variety of sources including being naturally shed by humans and it is common to see low concentrations indoors.

The Carbon dioxide (CO<sub>2</sub>) level in room 214 was 539 parts CO<sub>2</sub> per million parts of air (ppm). 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

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the breathing zone shall never exceed 700 ppm over the outdoor concentration”, in this

case giving a limit of 1140 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.

The outdoor relative humidity was measured at 51 percent (%) and the indoor relative humidity was 31%. 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 are unlikely to affect the health of most people.

Our measurements and sample results did not indicate that there is any issue with the air quality in room 214.

The School Indoor Air Quality rule 410 IAC 33-6-2 requires this report, within 5 days of receipt, to be posted for 14 days both at the school building stated in the report, and on the school’s website, where it is accessible to students, parents, and employees. As no deficiencies were noted you are not required to send a response letter, but we do ask that you respond back providing the link where this report is posted on the website.



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

If you have questions, I can be reached at 317.682.9033.

Sincerely,

A handwritten signature in black ink that reads "Ron Clark". The signature is written in a cursive, flowing style.

RON CLARK,  
Industrial Hygienist  
Indoor Air Section, Environmental Public Health

Enclosure



**TABLE 1**  
**Creekside Middle School**

**Computed Microbiological Air Sample Results**  
**Taken February 14, 2024**

<b>Sample</b>	<b>Location</b>	<b>Occupants</b>	<b>Temp °F</b>	<b>RH %</b>	<b>CO2 ppm</b>	<b>Fungal cfu/m3</b>	<b>Bacterial cfu/m3</b>
<b>1</b>	<b>Room 214</b>	<b>6</b>	<b>69</b>	<b>31</b>	<b>539</b>	<b>0</b>	<b>5</b>
<b>2</b>	<b>Outside</b>	<b>0</b>	<b>34</b>	<b>51</b>	<b>440</b>	<b>35</b>	<b>0</b>

**Notes:**

**% -----percent**

**ppm-----parts per million**

**CFU/M<sup>3</sup>—colony forming units per cubic meter of air**