



Michael R. Pence
Governor

William C. VanNess II, MD
State Health Commissioner

September 8, 2014

MB3-99 RDC-292

Dr. Sandra Martinez, Superintendent
The School City of Whiting
1500 Center Street
Whiting, IN 46394

Dear Dr. Martinez:

The purpose of this letter is to report the result of our indoor air quality evaluation of the Nathan Hale Elementary on September 2nd. 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 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/M³) were computed taking the fungal or bacterial counts, and dividing by the total volume of the sampled air. Please refer to Table 1 for further details. The outdoor fungal and bacteria counts were higher than the indoor samples. There are no limits established as an acceptable concentration of fungal counts indoors. There are guidelines that recommend fewer counts indoors than outdoors. The bacteria count in two of the areas samples was slightly higher than the outdoor sample and within the range typically seen indoors.

The Carbon dioxide (CO₂) levels inside were measured with the highest reading 905 parts CO₂ per million parts of air (ppm). The School Indoor Air Quality rule, 410 IAC 33-4-2 states "carbon dioxide concentrations in the breathing zone shall never exceed 700 ppm over the outdoor concentration", in this case giving a limit of 1104 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 Sanitary Schoolhouse Rule, 410 IAC 6-5.1-5, states: "...each such ventilating system shall be kept continuously in operation whenever a room it serves is occupied".

The outdoor relative humidity was measured at 63 percent (%), and the indoor relative humidity had a range of 50% to 59%.

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.

Based on sample results and our visual inspection we found no problems with the air quality in the school. Based on 410 IAC 33 we do note the following:

410 IAC 33 requires schools to designate an individual as their Indoor Air Coordinator and states “The IAQ Coordinator’s contact information shall also be published: 1) on the school website and 2) in the school handbook” *The school needs to designate an Indoor Air Coordinator and ensure they are meeting the requirements specified in the rule.*

410 IAC 33 requires you to respond within 60 days of 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 for 14 days at the location of the school building stated in the report so they are accessible to all students, parents, and employees.

If you need assistance in developing the required policies or meeting any requirements of the School Indoor Air Quality rule, the rule and Best Practices documents with example policies are available on the Indiana Dept. of Education’s website: <http://www.doe.in.gov/student-services/health/indoor-air-quality> . If I can be of any assistance feel free to contact me.

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

If you have questions I can be reached at 317/351-7190 ext. 234.

Sincerely,



RON CLARK
INDUSTRIAL HYGIENIST
INDOOR AIR QUALITY SECTION

Enclosure

TABLE 1
Nathan Hale Elementary School
1831 Oliver Street, Whiting, IN

Computed Microbiological Air Sample Results
Taken September 2, 2014

SAMPLE ID	LOCATION	NO. OF OCCUPANTS	RELATIVE HUMIDITY (%)	CARBON DIOXIDE (ppm)	AIR SAMPLED (liters)	FUNGAL COUNT (CFU/M ³)	BACTERIAL COUNT (CFU/M ³)
1	Rm 302	27	50	862	100	10	0
2	312	24	50	905	100	30	0
3	203	3	55	791	100	40	0
4	222	1	55	835	100	10	0
5	Cafeteria	4	54	597	100	70	30
6	12	~29 left as we entered	59	731	100	100	30
7	21	~24 left 10 minutes before sampling	55	643	100	30	10
8	outside	---	63	404	100	660	20

Notes:

% -----percent

ppm-----parts per million

CFU/M³—colony forming units per cubic meter of air