

J.C. Broderick & Associates, Inc.

Environmental / Construction Consulting & Testing



January 30, 2019

Ms. Maria Dorr
Amagansett Union Free School District
Administration Building
320 Main Street
Amagansett, New York 11930

**Re: Limited Indoor Air Quality Sampling
Amagansett Elementary School
320 Main Street
Amagansett, New York 11930
Sampling Date: January 23, 2019**

JCB#: 19-42378

Dear Ms. Door:

J.C. Broderick & Associates, Inc. (JCB) was retained to perform limited indoor air quality sampling in the above referenced subject spaces. The sampling consisted of the following:

- Temperature (°F) and Relative Humidity (%RH) Sampling
- Total Airborne Particulate Sampling
- Carbon Monoxide (CO) Sampling
- Volatile Organic Compounds (VOC) Sampling

Results of the sampling were compared to applicable standards to identify if any of these parameters exist at hazardous levels. In the absence of a governmental exposure value, an applicable industry standard was referenced. Results which fell outside of these standards/guidelines could indicate conditions which may cause occupant discomfort or be an indicator of other indoor air quality concerns. The following sections summarize the results of the inspection and sampling performed. Results and laboratory reports, if applicable, are provided as attachments to this report.

Relative Humidity and Temperature Sampling Results

Sampling of relative humidity (RH) and temperature was performed primarily for assessing the potential for indoor mold growth. Higher RH and/or temperature may lead to elevated levels of microbial growth and contaminants. Sampling of RH is also performed since a low RH may lead to increased airborne particulate concentrations and/or occupant discomfort.

The sampling was performed utilizing a portable real-time air quality monitor. Temperature was reported in degrees Fahrenheit (F) and humidity was reported in %RH. Detailed information pertaining to this equipment is available upon request.

No regulatory limit currently exists for RH for indoor environments. However, the Environmental Protection Agency (EPA) in their document “IAQ Design Tools For Schools” states that indoor RH be maintained below 60% and ideally between 30 and 50%.

Acceptable temperature ranges for indoor environments are described by ASHRAE as being between 68 F to 79 F. Temperatures above this range may cause occupants to become lethargic and increase the initial out-gassing of VOCs from materials. There are different guidelines for temperature in the winter and summer, which are a result of the different dressing habits of the occupants throughout the year. In the winter months, occupants typically wear heavier clothing, and therefore are less comfortable with higher indoor temperatures. In the summer, occupants typically dress with lighter clothing and are less comfortable with lower temperatures.

The results of the sampling performed revealed the following:

- The RH levels were observed as being slightly below the recommended range within each of the sampled spaces. These levels were similar to RH recorded outside the school building.
- Temperatures were observed as being within the recommended range within each of the sampled spaces.

Airborne Particulate Sampling Results

Total airborne particulate sampling was performed as elevated concentrations of airborne particulates may be an indication of poor ventilation efficiency, inadequate housekeeping practices, or periods of low relative humidity.

Total particulate sampling was performed utilizing a portable real-time air particle counter. The Particle Counter is a technologically advanced instrument designed to measure the concentration of airborne particulate matter providing direct and continuous readout as well as electronic recording of the information.

The sampling results were compared with the OSHA permissible exposure limit (PEL), the ACGIH guidance values, and through a comparison between concentrations observed within the test spaces and those from control or background locations.

The results of the sampling performed revealed the following:

- All concentrations were well below the OSHA PEL of 15 mg/m³ and the ACGIH exposure value of 3 mg/m³ for each of the sampled spaces.

Carbon Monoxide (CO) Sampling Results

Sampling of Carbon Monoxide (CAS# 630-08-0) was performed since it is a product of incomplete combustion and is present in combustion exhaust.

Carbon Monoxide (CO) in its physical state is an odorless, tasteless and colorless gas. It mixes well with air and explosive mixtures are easily formed. The gas penetrates easily through walls and ceilings and is absorbed into the body by inhalation.

The sampling was performed utilizing a portable real-time air quality monitor. The results of the sampling were compared to OSHA's PEL of 50 ppm, ASHRAE Standard 62-2007 Appendix B, and ambient (outdoor) concentrations. This ASHRAE standard denotes a "concentration of interest" for CO at 9 ppm.

- No detectable concentrations of Carbon Monoxide were detected within any of the subject spaces.

Volatile Organic Compounds (VOC) Sampling Results

Multiple sources of volatile organic compounds (VOCs) exist within a building (i.e. cleaning solvents, perfumes/colognes, etc...). As it is not feasible to sample for each chemical compound individually, sampling for total VOCs was performed.

VOCs are organic chemicals that have a high vapor pressure and easily form vapors at standard temperature and pressure. VOCs resulting from out-gassing of fabrics, carpets, building materials, etc. may contribute to poor indoor air quality. Several hundred different VOCs have been identified in indoor air by academic and government investigators. Materials most often implicated as contributing to indoor VOC contamination include paints, adhesives, carpeting, vinyl tiles, floor products and insulation.

Sampling was performed utilizing a portable real-time air quality monitor. Concentrations of VOCs are reported in parts per million (ppm). Currently, no standards have been established for total VOC concentrations within a non-industrial setting. Therefore, the sampling results were compared with what is typically regarded as an industry standard that the presence of total VOCs greater than 3 ppm may cause undesirable health effects.

The results of the sampling performed revealed the following:

- No detectable concentrations of total Volatile Organic Compounds were observed within any of the subject spaces.

Findings and Recommendations

With the exception of Relative Humidity readings, none of the parameters were observed outside the referenced recommended ranges within the sampled spaces. Lower relative humidity readings are typical for winter months and therefore it is generally recommended to ensure the HVAC systems and thermostatic controls are operating in accordance with manufacturer's specifications.

It is important to note that this inspection and sampling are limited in that it only reports the presence and conditions of the parameters analyzed at the time the inspection and sampling was performed. Although every attempt was made to collect the samples at a time which is most representative of the typical conditions of the subject space, these results cannot guarantee the conditions prior to, and subsequent to, when the samples were collected. These results represent typical indoor air quality parameters and were not

intended to investigate any specific events or medical conditions. If the occupant's concerns and/or symptoms persist, further investigation, including more expansive air monitoring and collaboration with the occupant's physician is recommended. Please contact our office if these services are requested.

Attached, please find a copy of the laboratory analytical report and photolog detailing the findings. If there are any questions or if more information is needed, please feel free to contact our office.

Sincerely,

Matthew Harris

Matthew Harris
J.C. Broderick & Associates, Inc.

A handwritten signature in black ink, appearing to read "Edward J. McGuire III". The signature is fluid and cursive, with the last name "McGuire" being the most prominent part.

Edward J. McGuire III
J.C. Broderick & Associates, Inc.