



MEMO

Date: November 15, 2019
From: Jennifer Long, UFT Industrial Hygienist, MS
Subject: **Indoor Air Quality Inspection**
PS 169Q/Bell Acamdey - 18-25 212th St, Bayside, NY 11360

On October 4, 2019, Sandra Dunn-Yules and Jennifer Long representing the United Federation of Teachers, conducted an indoor air quality walkthrough in PS 169Q and Bell Academy. The walkthrough was requested due to concerns on construction dust and odors generated during multiple concurrent construction projects near the school. The closest being a School Construction Authority (SCA) project to build an extension to the existing school building. Thus, at the request of the UFT District Representative and Chapter Leader, an indoor air quality walkthrough was made at the school. This inspection was conducted with the UFT Chapter Leaders and the SCA Director of Industrial and Environmental Hygiene.

For this inspection,

- 1) a visual inspection was conducted for settled construction dust, peeling paint and any other common indoor allergens that may worsen the indoor air quality in the complaint rooms and,
- 2) indoor air measurements were taken of the levels of volatile organic compounds (VOCs) and particulate matters 10 micrometers or less in diameter (PM10), also known as inhalable dust. Real-time measurements for total volatile organic compounds were taken with the ppbRAE 3000 photo-ionization detector. Measurements of inhalable dust (PM10) were measured using the TSI DustTrak II Aerosol Monitor.

The following summarizes the findings and recommendations from our walkthrough:

VISUAL INSPECTION FOR CONSTRUCTION DUST AND PEELING PAINT

The primary locations of the current phase of the SCA construction are in the school's former play yard and a small south wing of the building. Many classrooms and offices on the west elevation (facing 212th Street) overlook the SCA construction site, which is active during normal school hours. At the time of the inspection, there was no extensive demolition or excavation. There were some light foot and truck traffic at the site to relocate various items.

For the inspection, excessive construction dust and debris were inspected for on the exterior window ledges, window wells, interior window sills and any window-adjacent furniture in the rooms visited. Excess settled construction dust was not observed in these areas in the rooms visited. Rooms visited included both classrooms and offices that are along the west and east



elevations (for comparison). They are the main offices for Q169 and Bell Academy, Rooms 118, 122, 121, 123, 124, 223, 224, 222, 220, 218, 322, 320 and, 305.

INDOOR AIR QUALITY PARAMETERS

All measured air quality parameters (inhalable dust and total VOCs) were within background levels during the inspection. Below and Table 1 summarize the findings in the area visited.

Dust Levels in Air (PM₁₀)

Using the TSI Dusttrak II, PM₁₀ was measured for in the rooms visited. PM₁₀ refers to inhalable particulate matter (PM) that has a diameter of less than 10 micrometers. The guidance level used is based on the EPA Ambient (Outside) Air Quality standard for PM₁₀ which is 0.05 mg/m³ for an annual average exposure¹.

The levels of inhalable dust in the rooms visited were below the EPA guidance level ranging from 0.002 to 0.018 mg/m³ but levels can fluctuate depending on the activities taking place inside and outside the rooms. Outdoor PM₁₀ concentrations the day of the inspection measured at 0.005 mg/m³, which is below the EPA's exposure limit for PM₁₀. Measurements for airborne dust were conducted along with a visual inspection for any settled dust. As previously noted, excess settled construction dust was not observed.

Total Volatile Organic Compounds (VOCs)

VOCs are carbon-containing substances that have the ability to evaporate at room temperature. Indoor air can be greatly impacted by the use of products containing VOCs. Such products including paints, adhesives, caulks, etc., are common in construction. Exposure to low levels of total VOCs may produce eye, nose, throat and/or respiratory irritation in some sensitive individuals.

The levels of total VOCs measured by the PID were below 0.5 parts per million (ppm) in all of the rooms visited. Levels above 0.5 ppm can indicate a "potential of IAQ contaminants" according to RAE Systems, the PID's manufacturer².

CONCLUSION AND RECOMMENDATIONS

All air quality parameters measured in the rooms visited were within normal, background levels at the time of the inspection. In addition, excess construction dust was not observed in the rooms visited. However, it should be noted that the construction activity was minimal at the time of the inspection. In light of the findings, the following are recommended:

- 1) In general, SCA contractors should continue to follow the SCA Dust Protocol 1900 which should include the use of wet methods and/or HEPA attachments to grinding tools. Any



evidence of dust in classrooms should be cleaned before the arrival of staff and students.

- 2) Pedagogical staff in rooms with excessive construction dust should avoid cleaning that dust and immediately report this to the chapter leader, principal and custodial engineer for immediate additional cleaning by the SCA.
- 3) As the demolition of the play yard and south wing is expected to continue through to February 2020, UFT Safety and Health can conduct a follow-up inspection (upon request by the UFT Chapter Leaders and/or District Representative).

REFERENCES

- 1) US Environmental Protection Agency (EPA). National Ambient Air Quality Standards (NAAQS). US Environmental Protection Agency, Office of Air Quality Planning and Standards, Washington, DC. 2006. Available at: <https://www3.epa.gov/region1/airquality/pm-aq-standards.html>.
- 2) RAE Systems. AP-212: Using PIDs for Indoor Air Quality (IAQ) Surveys. RAE Systems. 2002. Available at: http://www.raesystems.com/sites/default/files/downloads/FeedsEnclosure-AP-212_Indoor_Air_Quality.pdf

TABLE 1: Summary of the VOCs and respirable dust in visited areas in Q169 and Bell Academy

Location	Total VOC Levels (ppm)	Total PM ₁₀ respirable dust (mg/m ³)
Main office for Q169	ND	0.003
Room 118	ND	0.005
Room 122	ND	0.002
Room 121	ND	0.005
Room 123	ND	0.001
Room 124	ND	0.001
Room 223	ND	0.01
Room 224	ND	0.018
Room 222	ND	0.10
Room 220	ND	0.013
Room 218	ND	0.014
Main office for Bell Academy	ND	0.01
Room 322	ND	0.017
Room 320	ND	0.005
Room 305	ND	0.015
Outside	ND	0.005
RECOMMENDED LIMITS	0.5 ppm	0.05 mg/m³

*indicate levels which fell outside the recommended guideline levels or ranges
 ND indicates level that is non-detectable