



**NORTH MAIN STREET SCHOOL
ROOM 102
PLEASANTVILLE, NEW JERSEY
INDOOR AIR QUALITY INVESTIGATION
FINAL REPORT**

Prepared for:

The Pleasantville Board of Education
Pleasantville, New Jersey

Prepared by:

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1.0 BACKGROUND

Coastal Environmental Compliance, LLC (Coastal Environmental) was contacted to conduct an inspection and testing of the property located at North Main Street School, Room 102, Pleasantville, New Jersey.

This report details the investigation results and testing results for the property.

2.0 APPROACH

2.1 *SAMPLING METHODOLOGY*

Microbiological air sampling was conducted in several locations within the property, and one outdoor location using a low flow pump and air-o-cell cassettes (spore traps). Samples were evaluated for total count and identification of fungi, and other particulates.

ProLab Inc., Weston, Florida, performed the analysis, according to guidelines proposed by the USEPA, and the AIHA Field Guide For The Determination Of Biological Contaminants In Environmental Samples, 1996.

3.0 FINDINGS & OBSERVATIONS

3.1 VISUAL INSPECTION

A visual inspection of the classroom was conducted on December 16, 2024. The concerns and visual observations are as follows:

- ✚ No visible mold was found in the classroom.
- ✚ No areas of concern were found.
- ✚ The humidity was 66%rH in the classroom, above the optimal humidity range of 30-50%rH.

3.2 Testing Results

3.2.1 Microbiological Testing

Microbiological testing was conducted in the classroom on December 16, 2024.

Sample results are as follows (see attached laboratory results):

Type of Sample	Location	Fungi Count (Spores/m3)	Type of Fungi
Air-o-cell	Ambient	53	Other Ascospores
	Total Mold Count	53	
Air-o-cell	Room 102 Front of Room	53	Cladosporium
		53	Aspergillus/Penicillium
		110	Cellulose fiber
	Total Mold Count	106	
Air-o-cell	Room 102 Rear of Room	53	Aspergillus/Penicillium
		53	Cellulose fiber
	Total Mold Count	53	

Air samples indicate the following:

- ✚ Air sampling indicates acceptable levels of airborne fungi in Room 102, indicating normal fungal ecology.
- ✚ Concentration and types of fungi are comparable to ambient air.

3.2.2 Monitoring:

Air quality monitoring was conducted in the classroom. The results are as follows:

PM 2.5	10.6 ug/m3
PM 10	11.8 ug/m3
PARTICLES	4301 counts/L
CO2	485 ppm
HCHO	0.001 mg/m3
62 DEG F	66% rH

3.2.2.1 CARBON DIOXIDE:

Description: Carbon dioxide (CO₂) is a colorless, odorless product of carbon combustion.

Sources: Human metabolic processes and all combustion processes of carbon fuels, like those in cars, buses, trucks, etc., are sources of CO₂. Exhaled air is usually the largest source of CO₂ in classrooms.

Standards and Guidelines for Indoor Air Quality: ASHRAE Standard 62-2001 recommends 700 ppm above the outdoor concentration as the upper limit for occupied classrooms (usually around 1,000 ppm).

Health Effects: CO₂ is an asphyxiate. At concentrations above 1.5 percent (15,000 ppm) some loss of mental acuity has been noted. (The recommended ASHRAE standard of 700 ppm above the outdoor concentration is to prevent body odor levels from being offensive.)

Control Measures: Ventilation with sufficient outdoor air controls CO₂ levels. Reduce vehicle and lawn and garden equipment idling and/or usage.

Carbon dioxide

250-400ppm	Normal background concentration in outdoor ambient air
400-1,000ppm	Concentrations typical of occupied indoor spaces with good air exchange
1,000-2,000ppm	Complaints of drowsiness and poor air.
2,000-5,000 ppm	Headaches, sleepiness and stagnant, stale, stuffy air. Poor concentration, loss of attention, increased heart rate and slight nausea may also be present.
5,000	Workplace exposure limit (as 8-hour TWA) in most jurisdictions.
>40,000 ppm	Exposure may lead to serious oxygen deprivation resulting in permanent brain damage, coma, even death.

Testing for carbon dioxide was conducted in Rooms 102. All areas tested exhibited levels of Carbon Dioxide within the acceptable range.

3.2.2.2 PARTICULATE COUNTS

PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

Particle pollution includes:

- **PM₁₀**: inhalable particles, with diameters that are generally 10 micrometers and smaller; and
- **PM_{2.5}**: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller. Particulate matter less than 2.5 micrometers in diameter are expressed in micrograms per cubic meter of air.

REGULATORY LIMITS:

PM_{2.5}:

There are currently no Federal government standards for PM_{2.5} in school indoor air environments. EPA's National Ambient Air Quality Standards list 15 ug/m³ as the annual limit and 65 ug/m³ as the 24-hour limit for PM_{2.5} in outdoor air.

PM₁₀:

EPA limited PM₁₀ concentrations to 50 µg/m³ based on a 1 hour of exposure. NIOSH recommends no more than 35 ppm for 1 hour and 150 µg/m³ based on a 24-hour average.

Sources of PM

These particles come in many sizes and shapes and can be made up of hundreds of different chemicals.

Some are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires.

The main source of PM_{2.5} is diesel engines in trucks, buses, and nonroad vehicles (e.g., marine, construction, agricultural, and locomotive). Diesel engines emit large quantities of harmful pollutants annually.

Results indicate no elevated levels of respirable particles **PM_{2.5}** or **PM₁₀** throughout the area tested.

4.0 RECOMMENDATIONS

Based upon the testing results and visual observations, Coastal Environmental Compliance, LLC recommends the following:

RECOMMENDATIONS:

- ✚ Consider installing a dehumidifier in the classroom to lower the humidity level.
- ✚ No other corrective action required.

Coastal Environmental Compliance, LLC is pleased to have provided the Pleasantville Board of Education with professional services.

APPENDIX A

Laboratory Results