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October 22, 2015

Mr. Bernard P. Orlan  
New York City Department of Education  
Director, Office of Environmental Health & Safety  
44-36 Vernon Blvd  
Long Island City, NY 11101

Re: Limited Indoor Air Quality Assessment Report  
I.S. 239 Brooklyn (K239)  
2401 Neptune Avenue, Brooklyn, NY 11224  
Precision Project No. 1958-15-7186

Dear Mr. Orlan:

Precision Environmental Inc. (Precision) responded to an emergency request received from New York City Department of Education (DOE) on October 22, 2015. The limited Indoor Air Quality (IAQ) assessment was performed at I.S. 239 Brooklyn (K239), located at 2401 Neptune Avenue, Brooklyn, NY 11224 and consisted of a visual inspection and collection of real-time measurements (air sampling) of Airborne Particulate Matter (particulate matter less than 10 microns in diameter which can be inhaled into the nose and throat) (APM or PM<sub>10</sub>) and Total Volatile Organic Compounds (TVOCs). The visual inspection and air sampling was performed in order to evaluate the quality of indoor air due to smoke condition. The scope of work was defined to Precision in the DOE provided work order request No. 00590822-01.

The limited IAQ assessment was performed by Precision's senior project manager Ms. Daisy Nieves on October 22, 2015.

Upon arrival to the school at 11:30 a.m., Precision met with the school's custodial engineer Mr. Donald Iaccarino and the fireman. I interviewed the custodian, Mr. Iaccarino and he stated that the teacher occupying room 101 complaint on October 21, 2015 of a burnt odor. He stated that at approximately 7:00 a.m. this morning, the fireman, the school's deputy facility manager (DFM) and himself conducted an inspection throughout the room and detected a burnt wire odor in close proximity to the univent. He stated that during the inspection, he noticed that the wall mount reset button associated with the univent was turned off. He stated that when the reset button was turned back on smoke and burnt wire odor smother the entire room. He stated that the electrical power associated with the univent was immediately cutoff and that he ventilated the room and will continue to ventilate overnight.

During Precision site visit on October 22, 2015, the following were found / observed in room 101:

- A mild burnt wire odor was detected in room 101;
- All windows were observed opened but the door was closed;

- A small desk fan was observed placed on the window sill exhausting the indoor air out of the window;
- No soot stains was observed on any flat surfaces;
- As per the custodian, he stated that the exhaust system serving the entire school building was not in working condition;
- Precision collected a total of 3 indoor and 1 outdoor measurements for APM and TVOCs. All real time measurements collected were within or below the acceptable guideline levels utilized for the said parameters tested.

The real time data collection of APM or PM<sub>10</sub> and TVOCs was accomplished with the use of hand-held instruments. Precision measured concentrations of APM-PM<sub>10</sub> using a DustTrak<sup>®</sup> Aerosol Monitor, model 8532 manufactured by TSI and concentrations of TVOCs using a RAE Systems, Inc. ppbRAE<sup>®</sup> 3000 photoionization detector (PID).

To evaluate the real-time data of APM or PM<sub>10</sub> and TVOCs collected, Precision used the commonly accepted guidelines cited in the following publications:

- *Ventilation for Acceptable Indoor Air Quality (ASHRAE 62-1999)*, American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE);
- *Thermal Environmental Conditions for Human Occupancy (ASHRAE 55-1992)*;
- *The IAQ Investigator's Guide (2006)*, American Industrial Hygiene Association (AIHA).

Table 1 below lists target guidelines for the parameters that Precision evaluated during this investigation. Meeting one, some, or all of the listed values does not assure that acceptable indoor air quality will be achieved at all times.

**Table 1: Target Guidelines for Indoor Air Quality Parameters Evaluated**

Parameter	Limit/Range	Reference
Airborne Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup> (24 hours average)	EPA NAAQS
TVOCs	1000ppb	AIHA

AIHA = American Industrial Hygiene Association

EPA NAAQS = Environmental Protection Agency National Ambient Air Quality Standard

*Airborne Particulate Matter:* On October 22, 2015, the indoor APM concentration in room 101 and hallway by room 101 ranged between 46µg/m<sup>3</sup> and 52µg/m<sup>3</sup>. This concentration level is below the EPA NAAQS of 150µg/m<sup>3</sup>. The outdoor APM concentration was 57µg/m<sup>3</sup>.

*TVOC Concentration:* On October 22, 2015, the indoor TVOCs concentration in room 101 and hallway by room 101 was 0ppb. This concentration is below the AIHA guideline of 1,000ppb (1.0ppm) for non-industrial buildings. The outdoor TVOC concentration was also 0.0ppb.

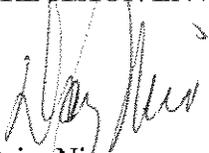
Based on the visual inspection and the information provided by the custodial engineer and real-time measurements collected for the limited IAQ parameters examined at the time of Precision's site visit on October 22, 2015, Precision concludes that room 101 was suitable for occupancy for the said parameters tested. Furthermore, Precision recommends the following:

- Continue to cross ventilate room 101 to eliminate the lingering smoke odor until it is dissipated;
- Solicit the services of an electrician to inspect and repair the electrical wiring associated with the univent;

- Keep a log of all indoor air quality issues including, but not limited to aberrant odors, irritation of the eyes and any health concerns, etc.

Thank you for selecting Precision Environmental, Inc. for the provision of the referenced services. If you have any questions or require additional information or services, please do not hesitate to call me at 718-383-2626.

Sincerely yours,  
**PRECISION ENVIRONMENTAL INC.**



Daisy Nieves  
Senior Project Manager

Attachments:      Indoor Air Quality Direct Measurement Field Data Report  
                                 Work Order Request



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# INDOOR AIR QUALITY DIRECT MEASUREMENT FIELD DATA REPORT

**CLIENT INFORMATION**

**PRECISION PROJECT INFORMATION**

NAME: NYC Department of Education		PROJECT NAME: Limited IAQ Assessment
PROJECT No.:	W.O No.:	P.E. PROJECT No.: 1958-15-7186
BUILDING NAME: I.S. 239 Brooklyn		PRECISION REPRESENTATIVE: Daisy Nieves
BUILDING ADDRESS: 2401 Neptune Avenue, Brooklyn 11224		SAMPLING AREAS: Room 101

**DIRECT MEASUREMENT FIELD DATA**

LOCATION	NO. OF OCCUPANTS	TIME	CARBON MONOXIDE - CO (ppm)	RESPIRABLE PARTICULATES PM <sub>10</sub> (µg/m <sup>3</sup> )	TVOCs (ppb)
Room 101 - windows opened (near window)	4	11:45 <sub>A</sub>	1.4	47	0
Room 101 - windows closed (near window)	4	11:48 <sub>A</sub>	1.3	46	0
Hallway by room 101	--	11:54 <sub>A</sub>	1.3	52	0
Outside School Building	--	12:21 <sub>P</sub>	1.0	57	0

Guideline levels ASHRAE/AIHA	Temperature (T)	Relative Humidity (RH)	Carbon dioxide (CO <sub>2</sub> )	Carbon Monoxide (CO)	Respirable Particulates (RP)	TVOCs
	68-75°F/Winter 73-79°F/Summer	30-60%	Outdoor level + 700 ppm	9 ppm	150 µg/m <sup>3</sup> 24 hrs average	1 ppm (1000ppb)

See the back of this page for comments      Instruments used:  Q-Trak™ Plus Model 7575, manufactured by TSI, Inc. for T, RH, CO<sub>2</sub> and CO  
 Dust-Trak<sup>II</sup> Aerosol Monitor Model 8532, manufactured by TSI, Inc. for RP  
 RAE Systems, Inc. ppbRAE® 3000 photoionization detector (PID) for TVOCs  
 Other: \_\_\_\_\_

Signature: Daisy Nieves

Date: 10/22/15