

# *Environmental Design Inc.*

*Professional Environmental Consultants*



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## INTERIM REPORT

# PERIODIC MERCURY VAPOR SAMPLING PROGRAM APRIL 2020

CONDUCTED AT:

GOVERNOR CHARLES C. STRATTON SCHOOL

WALTER HILL SCHOOL

CONDUCTED FOR:

SWEDESBORO-WOOLWICH SCHOOL DISTRICT

15 FREDRICK BOULEVARD  
WOOLWICH TOWNSHIP, NJ 08085



Service Disabled Veteran Owned Small Business



## EXECUTIVE SUMMARY

*Environmental Design Inc.* prepared this Interim Report on behalf of the Swedesboro-Woolwich School District, hereafter referred to as the Client, to document the results of the Periodic Mercury Vapor Sampling Program conducted at the Governor Charles C. Stratton School and the Walter Hill School on April 14 & 15, 2020, respectively. The sampling event was conducted to document the level of mercury vapor associated with the mercury-containing, rubberized, synthetic floor in each school's Multi-Purpose Room.

Last year, the Client tasked *EDI* with the collection of bulk samples of the rubberized, synthetic floor material in each Multi-Purpose Room (MPR) to determine if the floors contained mercury. The analytical results for the bulk samples collected in April 2019 indicated the flooring material at both schools contained greater than one part per million (1 ppm) mercury, and thus were considered to be mercury-containing as per the New Jersey Department of Health (NJ DOH). In accordance with the NJ DOH guidelines in effect at the time, *EDI* recommended to the Client that follow-up air samples be collected to document the level of mercury vapor in each MPR, if any. The results of the subsequent air sampling conducted in May 2019 indicated levels of mercury vapor well below the NJ DOH threshold value of 0.80 micrograms of mercury per cubic meter of air (0.80  $\mu\text{g}/\text{m}^3$ ). Therefore, in accordance with the NJ DOH guidelines each Multi-Purpose Room was deemed acceptable for continued use without the need to remove the mercury-containing floor material.

The NJ DOH published updated guidelines related to mercury-containing floors in February 2020 in a document entitled "*Evaluation and Management of Mercury-Containing Floors in New Jersey Schools*" (dated February 6, 2020), however, the threshold level of 0.80  $\mu\text{g}/\text{m}^3$  for mercury vapor exposure did not change. The NJ DOH considers exposure to this level of mercury vapor for 8-hours per day for 180 days per year to be protective student health; note that the level is not zero. The updated guidelines outlined that at least two air samples should be collected in the room/area with the mercury-containing floor and that one air sample should be collected outdoors. In addition, the updated guidelines recommended that school districts consider implementation of a periodic sampling program to record mercury vapor levels at quarterly intervals throughout the calendar year to assess the seasonal climatic effects on mercury vapor concentrations inside the school.

Consequently, the Client initiated a Periodic Mercury Vapor Sampling Program to record mercury vapor levels at each school four times over the course of a year. The first round of periodic sampling was conducted in April 2020. The second round of periodic sampling is scheduled for July 2020 with additional rounds planned for October 2020 and January 2021.

The first round of periodic sampling took place on April 14 & 15, 2020 at the Governor Charles C. Stratton School and Walter Hill School, respectively. The results for all samples from both schools were below the NJ DOH threshold value of 0.80  $\mu\text{g}/\text{m}^3$ . All of the samples were analyzed for mercury vapor concentration per the NIOSH 6009 Method by an independent, third-party laboratory.

Because the analytical results continue to be below the NJ DOH threshold value, it remains the professional opinion of *EDI* that the Multi-Purpose Room at each school can continue to be utilized as per NJ DOH guidelines. The Client is encouraged to follow the recommendations contained in this report regarding the on-going use of the Multi-Purpose Room at each school.

## BACKGROUND & FINDINGS

The New Jersey Department of Health (NJ DOH) has issued guidance documents which detail how some rubberized, synthetic floors manufactured and installed up until early 2000's may contain organic mercury compounds. The mercury compounds were added either during the manufacturing process at the factory or during the installation process in the field. The primary health concern associated with mercury-containing floors is that the mercury compounds may volatilize (i.e. off-gas) under certain conditions, releasing mercury vapor into the air. Inhalation of mercury vapor can cause adverse health effects depending on various individual factors, such as the length of exposure, the concentration of exposure, and personal susceptibility. NJ DOH established a Maximum Contaminant Level (MCL) for mercury vapor applicable to school environments at  $0.80 \mu\text{g}/\text{m}^3$ . NJ DOH considers exposures at or below this level to be protective for children as young as three years old even if they are exposed to this level of mercury vapor at a frequency of 8-hours per day for 180 days per year.

In April 2019, *EDI* collected bulk samples of the rubberized synthetic flooring material in the Multi-Purpose Room at the Governor Charles C. Stratton School and the Walter Hill School. The physical samples were analyzed for mercury content by a certified, third-party laboratory per EPA Method 7471B. The analytical lab report for the bulk samples indicated there was mercury present in each of the MPR floors above one part per million (1 ppm).

**Table 1. Results Summary - Mercury Bulk Sampling (April 2019)**

School	Sample	Result	Average
Governor Charles C. Stratton School	#1	210 ppm	260 ppm
	#2	310 ppm	
Walter Hill School	#1	160 ppm	160 ppm

In accordance with NJ DOH guidelines in effect at the time, *EDI* recommended that air samples be collected in each MPR given that the floor was found to contain more than 1 ppm mercury. The results of the subsequent air sampling conducted in May 2019 indicated levels of mercury vapor in the MPR and adjacent spaces well below the NJ DOH threshold value of  $0.80 \mu\text{g}/\text{m}^3$ . In consideration of the analytical results and the NJ DOH guidance in effect at the time, no action was taken by the Client with respect to removing the mercury-containing floor.

In February 2020, the NJ DOH published updated guidelines related to mercury-containing floors in a document entitled "*Evaluation and Management of Mercury-Containing Floors in New Jersey Schools*" (dated February 6, 2020), however, the Maximum Contaminant Level of  $0.80 \mu\text{g}/\text{m}^3$  for mercury vapor exposure remained the same in the new guidelines. To comply with the updated guidelines, atmospheric measurements of temperature, relative humidity, and barometric pressure were recorded and additional air samples were collected at each school during the April 2020 periodic sampling event as compared to the initial air sampling conducted in May 2019.

A total of five (5) air samples were collected at each school during the April 2020 round of testing: two in the MPR, one in the kitchen, one in the hallway outside the MPR, and one outdoors. The samples were collected in accordance with the NIOSH 6009 Method, which employs a glass sorbent tube attached to a portable sampling pump calibrated to run at 0.2 liters per minute. Each sample was



allowed to run for at least 8 hours. The sorbent tubes were then delivered to a certified, third-party laboratory for mercury analysis per the NIOSH 6009 Method.

The analytical data for the April 2020 periodic sampling event is summarized in the table below and is presented in comparison to the initial sample results from May 2019.

**Table 2. Results Summary - Mercury Vapor Air Sampling**

Sample Location	Stratton School		Hill School	
	May 2019	April 2020	May 2019	April 2020
MPR (3' above floor)	0.16	0.29	0.50	0.22
MPR (5' above floor)	None Detected	0.20	0.18	0.26
Hallway	0.25	0.17	None Detected	0.16
Kitchen	-	None Detected	-	0.16
Outdoors	-	None Detected	-	None Detected

*Results expressed in  $\mu\text{g}/\text{m}^3$ ; reporting limit is  $0.10 \mu\text{g}/\text{m}^3$*

Note that the results for all samples at both schools from April 2020 continue to be several times lower than the NJ DOH recommended Maximum Contaminant Level value of  $0.80 \mu\text{g}/\text{m}^3$ .

The temperature, relative humidity, and barometric pressure in the Multi-Purpose Rooms during the April 2020 sampling event were measured with a TSI IAQ Q-Trak 7575 monitor with data logging set at one minute intervals over the entire sampling period. These parameters were collected during the April 2020 periodic sampling event in accordance with the updated NJ DOH guidelines published in February 2020.

**Table 3. - Atmospheric Parameters**

School	CO <sub>2</sub> (ppm)	Temp (°F)	Humidity (%RH)	Barometric Pressure (inHg)
Stratton School	355	67.8	24.9	29.99
Hill School	362	64.8	23.1	29.92

*Average values; see data sheets for details*

### Results Interpretation

It is important to understand that the NJ DOH Maximum Contaminant Level (MCL) for mercury vapor is based on a risk assessment health model. Understanding how the MCL value of  $0.80 \mu\text{g}/\text{m}^3$  is derived helps to put the level of mercury vapor detected at the school into perspective, and it also serves to explain why the MPR can be considered acceptable for occupancy without the need for additional remedial action, such as removal of the flooring material.

The MCL is derived from a calculation which uses conservative variables to evaluate health risks for young children. The NJ DOH considers a child's health to be protected even if they are exposed up to  $0.80 \mu\text{g}/\text{m}^3$  of mercury vapor at a frequency of 8-hours per day for 180 days per year. Note that the exposure frequency used in the MCL calculation is longer than the typical school day, and that 180 days denotes every day of the typical school year. Thus, the MCL essentially represents an unlikely worst-case scenario as students are realistically never going to spend 8-hours a day in the Multi-Purpose Room every single day of the school year. Consequently, the health risks at each school can be considered substantially reduced because mercury vapor levels are lower than the MCL and exposure is at a frequency much less than 8-hours per day or 180 days per year.

Occupational exposures for teachers and other district employees are governed by the NJ Public Employees Occupational Safety & Health regulations (NJ PEOSH), which establish a statutory Permissible Exposure Limit (PEL) for occupational exposure to mercury vapor at  $100 \mu\text{g}/\text{m}^3$ . Similar to the MCL value, the PEL is a risk-based calculated value that represents a level of exposure at which worker health is considered not to be compromised. The PEL is based on a daily 8-hour time-weighted average factored over a 40-hour work week for a working life-time. A time-weighted average allows for short-term exposures in excess of the PEL provided the overall daily exposure does not exceed the PEL (i.e. average exposure over 8 hours). Because the level of mercury detected at each school was several orders of magnitude lower than the PEL, and because staff are unlikely to be in the MPR for a full 8 hours every day, the potential health risks associated with the conditions at Stratton and Hill can be considered significantly reduced as compared to exposures at the PEL.

## CONCLUSIONS/RECOMMENDATIONS

The level of mercury vapor detected in the Multi-Purpose Room and adjacent areas at the Governor Charles C. Stratton School and the Walter Hill School during the April 2020 periodic sampling event were below the Maximum Contaminant Level set by the NJ Department of Health. In consideration of the NJ DOH recommendations for the protection of student health and the NJ PEOSH Permissible Exposure Limit for occupational exposure to mercury, and based on the NIOSH 6009 analytical laboratory results, it is the professional opinion of *Environmental Design Inc.* that the Multi-Purpose Room at the Stratton School and the Hill School can continue to be utilized in their current condition.

*EDI* encourages the Client to consider the following suggestions regarding the use of the MPR at both schools:

- Maintain the physical condition of the MPR floor. Non-abrasive cleaning methods are recommended by NJ DOH. However, the Client should not encapsulate or cover the floor; this is specifically addressed in the NJ DOH guidelines dated February 6, 2020.
- The HVAC system should to be operated in "occupied" mode with respect to heating, cooling, and ventilation even when the MPR is vacant, including nights, weekends, and holidays. It is important to supply fresh make-up air and to provide sufficient air exchanges to prevent mercury vapor from accumulating, even if temperatures are maintained within ideal parameters. A mechanical contractor can confirm the system is operating properly, if needed.
- Industry guidelines suggest the temperature in the MRP should be kept approximately in the range of 68°F to 70°F throughout the year, including during the summer recess, to minimize the rate of mercury volatilization. The NJ DOH guidelines issued in February 2020 explain that managing temperature and ventilation is an acceptable long-term mitigation strategy for controlling mercury vapor concentrations. However, the most recent NJ DOH do not recommend stress-testing the MPR by heating the space to above 90°F.
- Teachers, staff, custodial, and maintenance personnel should be informed of the nature of the mercury hazards associated with the MPR floor.
- Continue with an annual periodic sampling program to document that mercury vapor levels in the MPR are below the NJ DOH threshold level throughout the year.

*EDI* is neither recommending nor discouraging the removal of the mercury-containing floor at either school. If the Client decides to embark on a floor removal project, then the Client should be prepared to conduct core sampling of the concrete slab and the underlying soil as part of a preliminary investigation to determine the extent of mercury contamination, if any, below the poured floor. It is possible that portions of the concrete slab and even some sub-soil may need to be excavated as part of a floor replacement project. If there are cracks in the slab, then the likelihood of deeper contamination is increased, dictating a more complicated, time-consuming, and costly project. In addition to the direct costs for removal and disposal of a mercury-containing floor (potentially as a classified hazardous waste), the Client will need to factor the cost of a replacement floor and the ancillary engineering, architectural, and environmental services required for such a project.

**LAB REPORTS & DATA TABLES**

DRAFT



**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn:

**Tim Gromen**  
**Environmental Design, Inc.**  
**5434 King Avenue**  
**Suite 101**  
**Pennsauken, NJ 08109**

4/22/2020

Phone: (856) 616-9516

Fax: (586) 616-9517

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 4/15/2020. The results are tabulated on the attached data pages for the following client designated project:

**SWBOE - Stratton School**

The reference number for these samples is EMSL Order #012003948. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry  
Laboratory Director



The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.  
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

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<http://www.EMSL.com>[EnvChemistry2@emsl.com](mailto:EnvChemistry2@emsl.com)

EMSL Order: 012003948

CustomerID: EDI50

CustomerPO:

ProjectID:

Attn: **Tim Gromen**  
**Environmental Design, Inc.**  
**5434 King Avenue**  
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**Pennsauken, NJ 08109**

Phone: (856) 616-9516  
 Fax: (586) 616-9517  
 Received: 04/15/20 12:00 PM

Project: **SWBOE - Stratton School****Analytical Results**

**Client Sample Description** 13-0414-01  
Hallway  
**Collected:** 4/14/2020  
8:25:00 AM  
**Lab ID:** 012003948-0001

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00017	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:21 PV
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**Client Sample Description** 13-0414-02  
MPR - 3' feet  
**Collected:** 4/14/2020  
8:26:00 AM  
**Lab ID:** 012003948-0002

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00029	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:25 PV
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**Client Sample Description** 13-0414-03  
MPR - 5' feet  
**Collected:** 4/14/2020  
8:26:00 AM  
**Lab ID:** 012003948-0003

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00020	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:27 PV
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**Client Sample Description** 13-0414-04  
Kitchen  
**Collected:** 4/14/2020  
8:27:00 AM  
**Lab ID:** 012003948-0004

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	ND	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:30 PV
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**Client Sample Description** 13-0414-05  
Outdoors  
**Collected:** 4/14/2020  
8:29:00 AM  
**Lab ID:** 012003948-0005

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	ND	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:32 PV
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EMSL Order: 012003948

CustomerID: EDI50

CustomerPO:

ProjectID:

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Phone: (856) 616-9516  
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 Received: 04/15/20 12:00 PM

Project: SWBOE - Stratton School

**Analytical Results**

**Client Sample Description** 13-0414-06 **Collected:** 4/14/2020 **Lab ID:** 012003948-0006  
 Blank

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
<b>METALS</b>					
6009	Mercury	ND	0.000010 mg/tube	4/21/2020 PV	04/22/20 12:40 PV

**Client Sample Description** 13-0414-07 **Collected:** 4/14/2020 **Lab ID:** 012003948-0007  
 Blank

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
<b>METALS</b>					
6009	Mercury	ND	0.000010 mg/tube	4/21/2020 PV	04/22/20 12:42 PV

**Definitions:**

- MDL - method detection limit
- J - Result was below the reporting limit, but at or above the MDL
- ND - indicates that the analyte was not detected at the reporting limit
- RL - Reporting Limit (Analytical)
- D - Dilution Sample required a dilution which was used to calculate final results



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**Pennsauken, NJ 08109**

4/22/2020

Phone: (856) 616-9516

Fax: (586) 616-9517

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 4/16/2020. The results are tabulated on the attached data pages for the following client designated project:

**SWBOE-Walter Hill PR-200310-1508**

The reference number for these samples is EMSL Order #012003994. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry  
Laboratory Director



The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.  
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

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<http://www.EMSL.com>[EnvChemistry2@emsl.com](mailto:EnvChemistry2@emsl.com)

EMSL Order: 012003994

CustomerID: EDI50

CustomerPO:

ProjectID:

Attn: **Tim Gromen**  
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**Suite 101**  
**Pennsauken, NJ 08109**

Phone: (856) 616-9516  
 Fax: (586) 616-9517  
 Received: 04/16/20 1:10 PM

Project: SWBOE-Walter Hill PR-200310-1508

**Analytical Results**

**Client Sample Description** 13-0415-01  
MPR - 5' feet  
**Collected:** 4/15/2020  
**Lab ID:** 012003994-0001

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00026	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:44 PV
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**Client Sample Description** 13-0415-02  
MPR - 3' feet  
**Collected:** 4/15/2020  
**Lab ID:** 012003994-0002

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00022	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:46 PV
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**Client Sample Description** 13-0415-03  
Kitchen  
**Collected:** 4/15/2020  
**Lab ID:** 012003994-0003

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	0.00016	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:48 PV
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**Client Sample Description** 13-0415-04  
Hallway  
**Collected:** 4/15/2020  
**Lab ID:** 012003994-0004

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
--------	-----------	--------	----------	---------------------	-------------------------

**METALS**

6009	Mercury	0.00016	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:50 PV
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**Client Sample Description** 13-0415-05  
Outdoors  
**Collected:** 4/15/2020  
**Lab ID:** 012003994-0005

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
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**METALS**

6009	Mercury	ND	0.00010 mg/m <sup>3</sup>	4/21/2020 PV	04/22/20 12:52 PV
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EMSL Order: 012003994

CustomerID: EDI50

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Attn: **Tim Gromen**  
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 Received: 04/16/20 1:10 PM

Project: SWBOE-Walter Hill PR-200310-1508

**Analytical Results**

**Client Sample Description** 13-0415-06 **Collected:** 4/15/2020 **Lab ID:** 012003994-0006  
 Blank

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
<b>METALS</b>					
6009	Mercury	ND	0.000010 mg/tube	4/21/2020 PV	04/22/20 12:54 PV

**Client Sample Description** 13-0415-07 **Collected:** 4/15/2020 **Lab ID:** 012003994-0007  
 Blank

Method	Parameter	Result	RL Units	Prep Date & Analyst	Analysis Date & Analyst
<b>METALS</b>					
6009	Mercury	ND	0.000010 mg/tube	4/21/2020 PV	04/22/20 12:56 PV

**Definitions:**

- MDL - method detection limit
- J - Result was below the reporting limit, but at or above the MDL
- ND - indicates that the analyte was not detected at the reporting limit
- RL - Reporting Limit (Analytical)
- D - Dilution Sample required a dilution which was used to calculate final results

Swedesboro-Woolwich School District  
 Periodic Mercury Vapor Sampling Program - April 2020  
 Governor Charles C. Stratton School

TrakPro Version 4.70 ASCII Data File

Model: VelociCalc/Q-Trak 7575  
 Model Number: 7575-X  
 Serial Number: 7575X1844002  
 Probe Model Number: 982  
 Probe Serial Number: P18440066  
 Test ID: 1  
 Test Abbreviation: Test 001  
 Start Date: 4/14/2020  
 Start Time: 7:30:42  
 Duration (dd:hh:mm:ss): 0:08:10:59  
 Log Interval (mm:ss): 1:00  
 Number of points: 491  
 Notes: Stratton School

Data	Temperature	Relative Humidity	Barometric Pressure	Carbon dioxide	Carbon monoxide
Units:	deg F	%rh	inHg	ppm	ppm
Average:	67.8	24.9	29.99	355	0
Minimum:	66.7	23.8	29.9	349	0
Time of Minimum:	8:58:42	13:14:41	15:37:41	15:04:41	7:31:42
Date of Minimum:	4/14/2020	4/14/2020	4/14/2020	4/14/2020	4/14/2020
Maximum:	69.3	27.1	30.04	383	0
Time of Maximum:	15:39:41	7:42:42	9:59:41	7:42:42	7:31:42
Date of Maximum:	4/14/2020	4/14/2020	4/14/2020	4/14/2020	4/14/2020

**Swedesboro-Woolwich School District**  
**Periodic Mercury Vapor Sampling Program - April 2020**  
**Walter Hill School**

TrakPro Version 4.70 ASCII Data File

Model: VelociCalc/Q-Trak 7575  
 Model Number: 7575-X  
 Serial Number: 7575X1844002  
 Probe Model Number: 982  
 Probe Serial Number: P18440066  
 Test ID: 2  
 Test Abbreviation: Test 002  
 Start Date: 4/15/2020  
 Start Time: 7:20:12  
 Duration (dd:hh:mm:ss): 0:08:09:59  
 Log Interval (mm:ss): 1:00  
 Number of points: 490  
 Notes: **Walter Hill School**

Data	Temperature	Relative Humidity	Barometric Pressure	Carbon dioxide	Carbon monoxide
Units:	deg F	%rh	inHg	ppm	ppm
Average:	64.8	23.1	29.92	362	0
Minimum:	63.2	18.2	29.87	354	0
Time of Minimum:	9:06:11	15:30:11	15:24:11	14:38:11	7:21:12
Date of Minimum:	4/15/2020	4/15/2020	4/15/2020	4/15/2020	4/15/2020
Maximum:	66.4	32.7	29.96	383	0
Time of Maximum:	10:52:11	7:31:11	8:35:11	7:33:11	7:21:12
Date of Maximum:	4/15/2020	4/15/2020	4/15/2020	4/15/2020	4/15/2020



## LIMITATIONS AND SERVICE CONSTRAINTS

*Environmental Design Inc. (EDI)* has presented professional opinions in this report based on information provided to us by the Client and gathered by *EDI* personnel on site. Conditions described in this report are as found at the time of the investigation, unless stated otherwise. The Client selected the date and time of our evaluation.

Sample results represent a snapshot of environmental conditions at a specific time. Indoor and outdoor environmental conditions can change daily, weekly, monthly, and even throughout the day. *EDI* has done nothing to create or contribute to the presence of any hazardous waste, pollutants, chemicals, or other hazardous materials at the Client's property. A full and complete determination as to whether a certain property is or is not free from environmental hazards cannot be made with 100% certainty.

The Client retained *EDI* for the sole purpose of assisting them in evaluating mercury levels at select indoor and outdoor locations. *EDI* is only responsible for the limited evaluation of specific areas of the school that the Client requested *EDI* to assess, and only for the specific samples collected.

The evaluation conducted by *EDI* was non-destructive (i.e. walls were not broken open, drop ceilings were not removed, etc.). *EDI* did not evaluate nor are we qualified to assess the operational effectiveness of the mechanical systems providing heating and air conditioning. Mechanical systems that are not operating properly or that do not adequately provide sufficient fresh air or air exchanges can be a significant contributing factor in any indoor quality problem.

The tests *EDI* conducted were based on the problem described by the Client and site conditions at the time of our evaluation. These tests may not be the only testing methodologies available for this type of evaluation. Further, the test results represent a "snap shot in time" of the conditions at the site and are reflective of the conditions at the time of the evaluation only. *EDI* receives no remuneration for any products suggested for use in cleaning or remediation.

*EDI* will not be held liable for any disclosures, notifications, or reports that may be required to be made to third parties, including the governmental agencies.

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