ENVIRONMENTAL HEALTH & ENGINEERING

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Frequently Asked Questions

Estabrook Elementary School
Lexington, Massachusetts
November 10, 2010

Are results from the most recent air testing below the public health targets suggested by the U.S. Environmental Protection Agency (EPA)?

Yes, polychlorinated biphenyl (PCB) concentrations in indoor air of occupied areas measured in the most recent rounds of testing (Rounds 7 and 8) are within the public health levels suggested by EPA for children older than 6 years and adults were less than 200 nanograms per cubic meter (ng m^{-3}). Moreover, the PCB concentrations were either less than or very close to EPA's suggested levels for children less than 6 years old. In addition, these PCB concentrations are within the most conservative public health levels for all ages suggested by the site-specific assessment.

Where can I find a complete listing of the testing results for indoor air of the School?

The results of the most recent air testing are available in the Project Update dated November 10, 2010 and posted under the Superintendent's Advisory Committee section of the School Health and Safety Information section of the Lexington Public School website (http://lps.lexingtonma.org/health.html#PCB).

How were the mechanical systems in the School operating during the most recent rounds of air testing (Rounds 7 and 8)?

Results were obtained during ventilation and heating conditions in class rooms that approximated winter conditions: room air thermostat set point of 70 degrees Fahrenheit (°F), boiler operating, unit ventilator dampers modulating outdoor air flow based on demand for heating and cooling, and average outdoor air ventilation of approximately 300 cubic feet per minute (cfm).

I've heard the term 'curtain wall' used to describe the school building. What is a curtain wall?

A curtain wall is an exterior wall of a building that is non-structural (i.e., non-load bearing). At Estabrook, curtain walls are the metal-framed sections of the building that contain the windows and colored panels along the bottom and top. A section of curtain wall at the school is shown in the following photograph.

Photograph of a Curtain Wall at Estabrook Elementary

What has the air testing shown about contributions from the curtain walls to PCB levels in indoor air?

Testing in Rounds 7 and 8 showed that PCB levels decreased substantially when the curtain wall was isolated from the classroom.

What parts of the curtain wall are contributing to PCB levels in indoor air?

PCB-containing caulk around the perimeter of the colored panels at the base of the curtain walls is believed to be a primary source of PCBs in indoor air of classrooms at this time. PCB vapors released from the caulk are suspected to be moving through channels in the metal framing of the curtain wall as well.

I read that I-beams were part of the building investigation. What is an I-beam?

An I-beam is a post made of steel that has the shape of a capital 'I' when viewed from an end. In contrast to curtain walls, I-beams are a structural component of a building.

Where are I-beams located at Estabrook?

At Estabrook, I-beams support the roof of the school building. They run from the concrete floor to the roof. They can be found between sections of curtain wall and concrete block around the perimeter of the building.

Why were I-beams a part of the building investigation?

Based on our understanding of the building construction, I-beams are covered by transite or colored panels on the outside face of the building. From experience in the building, we believe that caulk around the edges of the transite panels contains PCBs. Air pressure differentials that we measured between the I-beam area and classrooms indicate that emissions of PCBs from those panels could enter the building.

Are transite panels near the I-beams a source of PCBs in indoor air of the school?

Testing has not demonstrated that transites panels near the I-beams are an important source of PCBs in the school. Nonetheless, we believe it remains a likely possibility.

What conclusions can be drawn from the latest rounds of air testing?

The primary conclusion from testing in Round 7 and Round 8 is that emissions from the curtain wall are an important source of PCBs remaining in indoor air of the school. A secondary conclusion is that heating in the vicinity of PCB-containing caulk appears to increase levels of PCBs in indoor air.

What can be done to control impacts of emissions from the curtain walls and I-beam areas on PCB concentrations in the school?

Impacts of emissions from the curtain walls and I-beam areas can be controlled by isolating those portions of the building from the classrooms. A barrier between those components and indoor air will prevent PCB vapors from moving into occupied areas of the school.

What is being done to separate curtain walls and I-beam areas from the classrooms?

Three steps are being taken to separate the areas of PCB-containing caulk from classroom air. First, interior walls, termed 'mini-walls', are being built to cover portions of the curtain walls known to contain PCB caulk. Second, metal-to-metal joints in aluminum framing of the curtain walls are being filled with new sealant. Third, gaps between metal covers over the I-beams are being sealed with new caulk.

What is a "mini-wall"?

"Mini-wall" is the name given to the encapsulating wall that covers the lower panels of the curtain wall at Estabrook School. The construction of a mini-wall (before and after from two different locations) is depicted in Photographs 1 and 2. The construction process involves installing a foil coated foam board on top of the existing wall panel followed by applying new caulking to seal the edges, and then covering this with drywall and paint to match the room.

Photograph 1

Photograph 2

Who is installing the "mini-walls"?

The Town of Lexington facilities department is constructing the mini-walls. The walls will be installed after regular school hours to minimize disruption to students and staff. PCB-containing materials will not be disturbed during this process.

What did the latest rounds of air testing show about the effect of radiators on levels of PCBs in indoor air?

Testing in Rounds 7 and 8 demonstrated that PCB levels decreased substantially when radiators were not used to heat the rooms.

I understand that unit ventilators are a source of heat in most classrooms. Are heated unit ventilators a source of PCBs?

Testing in Rounds 7 and 8 indicate that heated unit ventilators are not an important source of PCBs in indoor air of the school.

Are unit ventilators a source of PCBs in the air at all?

Test results obtained during Rounds 7 and 8 indicate that the unit ventilators, whether heated or not heated, are not an important source of PCBs in indoor air at Estabrook.

What is being done to control the effect of heating on PCB emissions?

Heating with steam radiators, other than unit ventilators, was suspended in the school during the week of October 31, 2010. There is no evidence that heated unit ventilators need to be addressed at this time.

I understand that testing was done to see if portable air cleaners would lower PCB levels in air. Did the portable air cleaners actually remove PCBs?

Yes, the portable air cleaners tested in Round 7 did appear to remove PCBs from indoor air of the School. PCB levels in rooms with portable air cleaners (Rooms 3 and 5) were among the lowest measured during that round of testing.

Will portable air clears be used in the classrooms?

Portable air cleaners will be used in classrooms for which other mitigation actions fail to bring the air concentration of PCBs below the target levels.

What is happening with the cove base?

The existing cove base on the curtain wall will be covered with the mini-wall to encapsulate and limit the potential for contact. Other existing cove base will either be covered and encapsulated with a larger cove base and sealed at the top and bottom using caulking, or will be removed. Remedies for cove base not located along the curtain wall will be included in the forthcoming operations and maintenance plan for the school. Periodic wipe sample testing of the exterior of the new cove base will be conducted to ensure the barrier remains effective.

When will the mitigation work be done in my classroom or my child's classroom?

Table 1 provides the scheduled dates for installation and construction activities. Air sampling will be completed in each classroom within one week of completing the mitigation work.

Table 1 Scheduled Dates for Installation of Additional Encapsulation and Wall Construction

Room	Grade	"Mini-Wall" Construction	Air Sampling
1	2	11/03/2010	11/11
2	2	11/03/2010	11/11
3	4	10/31/2010	11/11
4	4	10/31/2010	11/03
5	1	11/04/2010	11/11
6	4	10/31/2010	11/03
7a	1	NA	11/27
7b	K	NA	11/27
7c	K	NA	11/27
11	1	11/06/2010	11/11
13	1	11/07/2010	11/11
19	2	11/07/2010	11/11
Art	All grades	NA	12/03
Music	All grades	NA	12/03
20	3	11/10/2010	11/20
21a		11/08/2010	11/11
21b		11/08/2010	11/11
22	3	11/09/2010	11/20
23	3	11/08/2010	11/11
24	3	11/09/2010	11/20
25	All grades	11/08/2010	11/20
26	K	NA	11/27
27	K	NA	11/27
31A	5	11/12/2010	11/20
31B	2	11/13/2010	11/20
39B	5	11/14/2010	11/20
39C	5	11/14/2010	11/20
Teachers lounge	Staff	11/14/2010	11/20
Kitchen	Staff	11/15/2010	11/20
Gym	All grades	11/18/2010	11/27
Library	All grades	11/19/2010	11/27
Work area	Staff	11/20/2010	11/27
Administration	Staff	11/21/2010	11/27
Sped OF		–	12/03
A		–	12/03
B	Conference	–	12/03
C		–	12/03
D		–	12/03
Offices (A/M)	Staff	–	12/03

Is the heat and ventilation ever shut down?

Typically the heating system is shut down at night and is turned on early in the morning prior to the start of the school day. An operating schedule is being developed to ensure that an appropriate amount of heat and ventilation will be provided to the School during the heating season. Engineers are working to develop this operating sequence.

Have the Round 7 and Round 8 tests results been shared with the EPA?

Yes, the Round 7 and Round 8 test results, as well as all other sampling results at Estabrook, have been shared with Kimberly Tisa, PCB Coordinator, EPA New England region.

Have the interim measures (i.e., mini-walls, sealing penetrations) been shared with EPA?

Yes, the interim measures have been shared with the EPA. The ongoing performance of these measures will be evaluated as part of the Operations and Management (O&M) plan that is being developed for review and approval with EPA.

What PCB-related work remains to be done at the school?

Work activities that are in progress and/or remain to be completed, include the following tasks:

- Soil
  - Development of soil remediation work plan (Spring 2011)
  - Soil remediation (Summer 2011)
- Development of an O&M Plan (December 2011)
  - Confirmatory wipe and air sampling plan
  - Building system inspection plan
- Outreach and Reporting
  - Continued communications with EPA
  - Superintendent's Estabrook Advisory Committee meetings
  - Reports to Town and EPA