



ENVIRONMENTAL STEWARDSHIP DEPARTMENT /
NEW BEDFORD CONSERVATION COMMISSION

CITY OF NEW BEDFORD
SCOTT W. LANG, MAYOR

Massachusetts Department of Public Health
Bureau of Environmental Health
Attn: Community Assessment Program
250 Washington Street, 7th Floor
Boston, MA 02108

November 8, 2011

RE: *Health Consultation: Evaluation of Indoor Environmental Conditions and Potential Health Impacts, New Bedford High School, September 27, 2011.*

To whom it may concern:

Thank you for providing the opportunity for public comment on the above-referenced document prepared by the Massachusetts Department of Public Health (MDPH). The City of New Bedford's (City) Department of Environmental Stewardship, in collaboration with the City's consultant and risk assessor, has organized its review into the following general comments and specific comments, all of which are also available on the City's website. We look forward to your prompt response.

General Comments

The City was pleased to learn that PCB serum concentrations among current and former staff members at New Bedford High School (NBHS), the Keith Middle School (KMS), and the former Keith Junior High School and among current and former students at NBHS are within typical variation seen in the U.S. population. The City was also encouraged by MDPH's conclusion that employment at NBHS is not a primary predictor of PCB concentrations in serum. These findings will no doubt help to answer many of the questions that have been raised regarding the safety of the continued use of the high school by staff, students, and visitors. The City has worked to control or eliminate the potential for building occupants to directly contact PCB-containing material on indoor surfaces, as indicated by surface wipe samples that are nearly all below laboratory detection limits. Also, the City's evaluation of campus soil shows that exposure to the top foot does not contribute either to cumulative cancer risks or to noncancer hazards that exceed Massachusetts Department of Environmental Protection (MassDEP) benchmarks. For these reasons, the City has recommended continued use of the high school.

The City is concerned that MDPH's use of a cancer risk evaluation guide (CREG) to characterize the results of PCB indoor air monitoring presents a potential source of confusion to the community. For the past five years, the City has compared PCB indoor air monitoring results to risk-based, site-specific concentrations approved by the Environmental Protection Agency (EPA). These site-specific values are the Action Level

(AL; $0.05 \mu\text{g}/\text{m}^3$), used as an initial indicator that PCB air concentrations above background levels have been detected, and the Acceptable Long-Term Average Exposure Concentration (ALTAEC; $0.3 \mu\text{g}/\text{m}^3$), indicative of the maximum acceptable air concentration that should not be exceeded for an extended period of time. As with the CREG (cancer effects) and the environmental media evaluation guides (noncancer effects) used by MDPH, the AL and ALTAEC account for both cancer and noncancer effects, but both the AL and ALTAEC are based on noncancer endpoints as the most sensitive endpoint. The vast majority of PCB concentrations detected in indoor air are below these risk-based concentrations. The City's own technical findings have shown that PCBs, including dioxin-like PCBs, and volatile organic compounds (VOCs) in the indoor air of the high school do not contribute either to cumulative cancer risks or to noncancer hazards that exceed MassDEP benchmarks (except in rooms that have been closed) for staff, students, day care attendees, or any other occupants of the high school. The introduction of another comparison criterion (the CREG) in this report, based on a 70-year lifetime of daily exposure in a residential setting, far exceeds actual exposure at NBHS. This then could unjustifiably raise concern where none is warranted. The City strongly recommends that all references to the CREG be replaced with the risk-based concentrations approved by the EPA for consistency in comparing MDPH's data with data that has been collected by the City.

The sampling and analytical methods used for wipe sampling in the high school by the City were designed to meet all EPA requirements applicable to the high school, including those set forth in the Toxic Substances Control Act (TSCA). Results do not exceed the applicable EPA wipe standard of $10 \mu\text{g}/\text{m}^3$, a standard which takes into account unrestricted use of the building. On page 7 and elsewhere in the report, MDPH compares wipe sample results to the California Department of Toxic Substance Control's clean up guideline of $0.1 \mu\text{g}/\text{m}^3$. This proposed introduction of alternative comparison values presents a source of potential confusion, especially when the City's existing program is in compliance with federally-recognized standards.

In several places throughout the report, the text states that the indoor air results for total PCBs from the BETA April 2006 sampling round ranged from $0.0043 - 0.0519 \mu\text{g}/\text{m}^3$. The lowest concentration detected during the BETA April 2006 sampling round was $0.000013 \mu\text{g}/\text{m}^3$ at location IAQ-4 (House 2 Hallway). Please revise accordingly.

The use of the carbon dioxide concentrations measured in 2008 to explain indoor air concentrations of PCBs in 2006, 2007 and 2011 is inappropriate as significant changes occurred before and after the 2008 sampling period. The City requests that MDPH revise the report accordingly. Also, the comparison of the CO_2 levels to the CREG is not necessarily straightforward and does not always show a similar pattern. For instance, several rooms sampled in 2008 had PCB concentrations above the CREG with CO_2 levels above 800 ppm, but there were also two rooms (A-307-3 and B-242) with concentrations of PCBs above the CREG despite having CO_2 concentrations less than 800 ppm with recorded occupancy. In addition, there were also several rooms (A-205-1, A-110-4, and Cafeteria) where the concentrations of PCBs were below the CREG despite the fact that CO_2 concentrations were above 800 ppm. The report also indicates inadequate ventilation when the CO_2 levels are below 800 ppm with low or no occupancy. This was used to explain PCB concentrations above the CREG in rooms A-212/213, B-240, and B-

288. But, PCB concentrations were below the CREG in rooms A-303-1, A-105-2, and D-116, and CO₂ levels were below 800 ppm with low occupancy. Hence, the use of CO₂ measurements to explain increases or decreases in PCB concentrations may not be appropriate based on these inconsistencies.

Specific Comments

The City's specific comments are listed by page number and not necessarily in order of importance.

Page 1 –

- Paragraph 1: References to the “former city burn dump” taken from the *Interim Phase II CSA for NBHS and Walsh* – Further research by the City has indicated that the historic disposal activities which occurred at the former Parker Street Dump cannot be accurately characterized as a “burn dump.” Fires were sporadic, and much of the ash that is present was generated elsewhere in the City and deposited at the site.
- Paragraph 1: It may help reduce confusion to readers if the school building which previously existed at 70 Hathaway Boulevard is referenced as the former Keith Junior High School rather than the former Keith Middle School. The school was renamed to a “middle school” with the new construction at 225 Hathaway Boulevard (note: this comment applies to multiple references throughout the report).
- Page 1, paragraph 1, states that NBHS was constructed between 1968 and 1971, whereas page 2, paragraph 3, states that it was constructed in 1973. Construction occurred between 1968 and 1972, and the school opened in 1972.

Page 3 –

- Paragraph 3: The text states that the 23 indoor air samples collected included 1 co-located pair. The 23 indoor air samples actually include 2 co-located pairs, one at Hallway Locker 1579 and one at A-110-4. Please revise accordingly.
- Paragraph 3: The text states that there were 5 outdoor/background samples collected. However, only three background samples were collected (one was collected using TO-10A and two were collected using TO-4A with separate analyses of the PUF and particulate filter for comparison purposes at the request of EPA). Please revise accordingly.
- Paragraph 3: The text states that 14 of the 22 wipe samples had detectable PCBs. This should state that 13 of the 22 wipe samples had detectable PCBs. Please revise accordingly.

Page 4 – The text states that the “J” values indicate that PCBs were present but could not be quantified. This is an incorrect interpretation of the “J” qualifier, and the statement should be deleted. In general, the “J” qualifier indicates that the result is estimated. However, the reasons for the estimation may vary from sample to sample (i.e., surrogate recoveries, calibration issues, field duplicate results, dual column comparisons, etc.). Although the results may be estimated, they were still quantified. The effect on the usability of the data will vary depending on the reason for the qualification and the evaluation of the result in comparison to the screening criteria. All data were validated

and evaluated for usability and determined to be acceptable for achieving project objectives.

Page 5 –

- Paragraph 1: Please revise the text to clarify that the 33 indoor air samples included 6 co-located pairs.
- Paragraph 1: The text states that there were 8 outdoor air samples collected. However, only six outdoor air samples were collected (four were collected using TO-10A and two were collected using TO-4A with separate analyses of the PUF and particulate filter for comparison purposes at the request of EPA). Please revise accordingly.
- Paragraph 1: The text states that 14 bulk samples were collected from rooms A-114-3 and B-240. However, one of these 14 samples was also collected from room D-143. Please revise accordingly.
- Paragraph 3: The text states that some of the 63 bulk samples exceeded the Toxic Substances Control Act (TSCA) PCB Bulk Product Waste Standard. Since there were only two samples (both of laminate adhesive), the text should be revised to specify “two samples” instead of “some”, which could be misleading to the reader.
- Paragraph 4: EPA approved the March 2010 *Removal and Abatement Plan* (RAP) for remediation work that was conducted in the summer of 2010 (May 2009 RAP is listed). The March 2010 RAP superseded the May 2009 version.

Page 6 –

- Since the MDPH study in April 2008, the City has significantly upgraded the school’s HVAC system, including the installation of a digital Building Management System, which has integral carbon dioxide (CO₂) probes installed in all heating/ventilation units, all air conditioning units, and the 31 unit ventilators that were installed in B-Block in 2010. These probes are tied into the air supply system to automatically provide additional outside air and reduce CO₂ accumulation when CO₂ levels exceed a set point between 800-1500 ppm (most units are currently set at 900 ppm, below the Occupational Safety and Health Administration’s recommended maximum level of 1000 ppm).
- Paragraph 1: The text states that 25 of the 48 indoor air samples had detectable PCBs ranging from 0.00266 – 1.45 µg/m³. The lowest concentration detected was 0.00252 µg/m³ at location A-105-4. Please revise accordingly.

Page 10 – Under “Results: Indoor Air Quality”, the first sentence should specify that the student and staff numbers were valid at the time of MDPH’s assessment (they have changed since 2008).

Page 11 – “Ventilation” – Please explain what steps, if any, MDPH took to communicate carbon dioxide levels to the City. If no steps were taken, please explain why, particularly since MDPH was reviewing the City’s ongoing indoor air PCB sampling results and noted a potential correlation between carbon dioxide levels and the efficiency of the ventilation system.

Page 15 – Paragraph 4 – The statement “To maximize air exchange, the MDPH recommends that both supply and exhaust ventilation operate continuously during periods of school occupancy” is slightly different from the statement in the 5th paragraph that, per the Massachusetts Building Code, “The ventilation must be on at all times that the room is occupied.” The third paragraph implies that the auto shop (D-116) was in active use during the assessment but that the exhaust ventilation was not turned on. Table 1 shows that there were no occupants for D-116 during MDPH’s assessment.

Page 20 – Note that substantial effort was undertaken by the City to address the seepage of water into the mechanical room in 2010 and 2011, with significant reductions in seepage volume and seepage area.

Page 27 –

- Please also note that only one of the results from the April 2006 PCB indoor air monitoring undertaken by BETA was above the site-specific $0.05 \mu\text{g}/\text{m}^3$ action level established by EPA in 2006 for investigative activities at NBHS.
- MDPH does not acknowledge that most of the results (75 out of 84 results including duplicates) were below the EPA defined risk-based cleanup goal of $0.3 \mu\text{g}/\text{m}^3$ established for this project.
- Paragraph 2: The text states that TO-4A is a generally more sensitive method than TO-10A. In order to avoid being misleading to the reader, it would be helpful to also note that although TO-4A is more sensitive, TO-10A is sensitive enough to achieve the project screening criteria and was utilized with the concurrence of EPA.
- Paragraph 4: The text states that 4 samples (B-113, B-114, D-237, and E-117) were non-detect for PCBs in indoor air out of the 89 samples collected from 2006-2008. Please revise the text to state 5 samples were non-detect for PCBs and include location D-116 (Auto Shop) also from February 2008.

Page 28 –

- Top of page: The report states that rooms B-113 and B-114 were not measured for CO_2 since they are not occupied classrooms. However, many other rooms were measured for CO_2 that were not occupied. Please clarify the rationale for the difference in the data collection methodology.
- Paragraph 1: The discussion should include D-116 (Auto Shop), which was also non-detect for PCBs.
- Paragraph 1: The text refers to 11 rooms with CO_2 levels below 800 ppm. However, the text incorrectly states that 8 of the 11 rooms had no or low occupancy. This should be 7 of the 11 rooms instead as rooms A-3-205, A-3-307, B-309 and B-242 had occupants.
- Paragraph 1: The final sentence indicates that the PCB data for the 11 rooms discussed indicate that the lack of ventilation is likely contributing to the accumulation of PCBs in the indoor air. The CO_2 data may only support this conclusion for 9 of the 11 rooms as rooms A-3-205 and A-3-307 have adequate CO_2 and occupants. The supply/exhaust issues for rooms B-242 and B-309 noted on Table 1 might also warrant reference in the report text for added clarity.
- Paragraph 3: The text states that 25 of the 48 samples had detectable PCBs ranging from $0.00266 - 1.45 \mu\text{g}/\text{m}^3$. The lowest concentration detected was

0.00252 $\mu\text{g}/\text{m}^3$ at location A-105-4. Please revise accordingly. Also, MDPH does not acknowledge that most of the results (40 out of the noted 48) were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.

- Paragraph 3: MDPH comments that 11 additional indoor air samples analyzed for dioxin-like PCB congeners were about at or less than the EPA Regional Screening Levels (RSLs). The report should state whether residential or industrial RSLs were used for this comparison and confirm whether the most recent WHO toxic equivalency factors were used to convert dioxin-like PCB congener concentrations to a single dioxin toxic equivalent (TEQ) concentration. Comparison to industrial RSLs based on exposures of 8 hours per day, 250 days per year for 25 year is more applicable to exposures occurring at NBHS than the residential RSLs. The City performed its own comparison of TEQ from dioxin-like PCB congeners to the RSLs and concurs with the MDPH finding that they are about at or less than EPA's industrial RSLs, therefore indicating that dioxin-like PCB congeners are not contributing to cumulative cancer risk above MassDEP's benchmark.

Page 29 –

- Paragraph 1: The text refers to room A-3-307 having a higher concentration of PCBs in February 2011 (0.139 $\mu\text{g}/\text{m}^3$) than February 2008 (0.085 $\mu\text{g}/\text{m}^3$). These two concentrations are not significantly different under the accuracy and precision limits of the analytical method. It is inappropriate and misleading to highlight this as a significant increase or to try to explain the reasoning for this very slight increase.
- Paragraph 2: MDPH used 2008 CO₂ data to compare to 2011 PCB indoor air data. Given the improvements previously noted with the installation of the Building Management System, more recent CO₂ readings should have been collected for this comparison. Also, the 2011 PCB data were collected under unoccupied room conditions.

Page 30–

- MDPH does not acknowledge that most of the results were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.
- A-House 1 (Green):
 - Results for sample A-1-205 should be noted as ranging from 0.0041 – 0.045 $\mu\text{g}/\text{m}^3$ instead of 0.0082 – 0.045 $\mu\text{g}/\text{m}^3$.
 - There is a reference to room A-1-227. However, no data were reported for this location. There are data reported for location A-2-227 but this is appropriately discussed in the A-House 2 (Gold) section. Please clarify.
 - The last sentence states that the result for A-1-205 exceeded the CREG when resampled in February 2008. However, the concentration of this sample was 0.0041 $\mu\text{g}/\text{m}^3$, which is below the CREG. Please revise accordingly.

Page 31 –

- MDPH notes that loadings for all but 4 wipe samples were below laboratory detection limits, or “ND.” MDPH should also note that all detected loadings were

below the 10 $\mu\text{g}/100\text{ cm}^2$ total PCBs EPA wipe regulatory cleanup standard for unrestricted use settings.

- MDPH does not acknowledge that many of the results were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.
- A-House 1 (Green):
 - The text states that supply and exhaust vents were noted as off or malfunctioning in rooms A-1-117, A-1-205 and A-1-227. Table 1 shows that only the exhaust vent was noted as off in room A-1-117, only the supply vent was noted as blocked in room A-1-205, and only the supply vent was noted as off at A-1-227 (note there are no PCB air data for room A-1-227). Please clarify the text.
 - The use of the supply/exhaust vents and the CO₂ for explaining malfunctioning ventilation in these rooms may not be appropriate. These results are not evident of significant PCB buildup in the indoor air.

Page 32–

- MDPH notes that 2 wipe samples had detected PCBs. MDPH should also note that all detected loadings were below the 10 $\mu\text{g}/100\text{ cm}^2$ total PCBs EPA wipe regulatory cleanup standard for unrestricted use settings.
- MDPH does not acknowledge that many of the results were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.
- A-House 2 (Gold): The text refers to the fact that the IAQ staff noted some malfunctioning of the ventilation system for rooms A-2-227 and A-2-311. However, there was nothing noted for room A-2-311 in Table 1. Please clarify.

Page 33–

- MDPH does not acknowledge that many of the results were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.
- A-House 3 (Tan): The text states that while the CO₂ concentration in room A-3-307 was less than 800 ppm, the room was unoccupied at the time of testing. However, as per Table 1, there were 10 occupants. Please clarify.
- A-House 4 (Blue): Paragraph 2: The text incorrectly refers to the remaining 9 samples with PCB levels above CREG. There were 6 samples from A-4-110 with PCBs above 0.01 $\mu\text{g}/\text{m}^3$ and 2 samples from A-4-103 with PCBs above 0.01 $\mu\text{g}/\text{m}^3$. Please revise accordingly.

Page 34– The discussion of results for room A-4-110 in February 2008 should be revised to show a concentration of 0.0056 $\mu\text{g}/\text{m}^3$ in the duplicate instead of 0.056 $\mu\text{g}/\text{m}^3$.

Page 35–

- MDPH comments that PCB concentrations dropped to 0.13 $\mu\text{g}/\text{m}^3$ and were still above the CREG, but MDPH does not acknowledge that this result is well below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.
- A-House 4 (Blue): The final sentence of this section states that it is plausible that disturbing materials for bulk sampling in 2006 may have impacted PCB levels measured in air in room A-4-212. Since PCBs were not measured in this room in 2006 and there is therefore no pre-bulk sampling baseline, this statement should not be made for this room. The City further disagrees with MDPH's statement

that it is plausible that any measurable impact from bulk sampling activities would be evident in facility spaces of this size.

- B-Core: Paragraph 2: As stated above for Page 4, the reference to “J” values not being quantifiable should be removed (see prior comments in this regard).

Page 36– B-Core: The text is misleading by generally stating that exhaust vents were noted as “weak” by IAQ staff throughout the B-Core. According to Table 1, only 3 of the 51 exhaust vents were noted as “weak”. Please revise accordingly.

Page 37–

- D-Block:
 - The text states that PCB levels in room D-116 ranged from 0.0024 to 0.013 $\mu\text{g}/\text{m}^3$. This should state ND ($<0.0031\mu\text{g}/\text{m}^3$) to 0.013 $\mu\text{g}/\text{m}^3$.
 - The text states that of the 10 samples collected for PCBs in air in the 4 locations, 8 had concentrations above the CREG, but the correct number of samples is 5.
 - The text states that no CO₂ concentrations were taken in the auto shop. However, as per Table 1, CO₂ was measured in room D-116 (Auto Shop) at 425 ppm. Please revise accordingly.
 - MDPH does not acknowledge that most of the results were below the EPA defined risk-based cleanup goal of 0.3 $\mu\text{g}/\text{m}^3$.

Page 38–

- Note that the duct work in the firing range was remediated in 2007 during the vent cleaning project and the lead impacted material was removed from the exhaust vent system.
- F-Block: The text states that there were no occupants at the time of CO₂ testing in room F-109. However, as per Table 1, there were 15 occupants. Please revise accordingly.

Pages 38 and 39 – MDPH should note that the 8 wipe samples that were ND were also indicative of successful cleanup per the EPA wipe standard applicable to the project.

Page 39 – Outdoor/Background: The text incorrectly states that the background sample collected outside of the auto shop immediately post-cleaning had a non-detect duplicate result. This was not a duplicate sample; the non-detect result was representative of the particulate filter from this sample while the detected result was representative of the polyurethane foam (PUF) sampling medium. Please revise accordingly.

Pages 39 through 41 and Appendix D –Theoretical cancer risk calculations were performed by MDPH to “further evaluate opportunities for exposure or health concerns”. A worst-case scenario was evaluated that assumed exposure to the highest PCB concentration measured in a single room to date at NBHS of 1.45 $\mu\text{g}/\text{m}^3$ (presently closed for further evaluation). Since individuals at NBHS move throughout the building, it is unlikely that an individual’s exposure at NBHS would be solely at the maximum detected concentration. Evaluation of a more reasonable case exposure scenario would have been helpful to provide additional perspective on the potential for exposure and health concerns. Some metric of an average air concentration for NBHS (e.g., a 95 percent

upper confidence limit on the arithmetic mean or other estimate of central tendency) could have been used to frame the theoretical risk estimates rather than only providing worst-case estimates. In addition to the fact that people do not remain in one room of the high school each working day for their entire occupational tenure, PCB concentrations also might not be constant over time. (Note: The report text refers to Appendix D for documentation of risk calculations; however, Appendix D reports risks associated with an indoor air concentration of PCBs of $0.31 \mu\text{g}/\text{m}^3$. However, the cancer risks presented in the text correspond to the maximum detected concentration of $1.45 \mu\text{g}/\text{m}^3$.)

The MDPH risk calculation incorporates other assumptions that differ from those used in the risk-based concentration approved by EPA: 1) an upper bound estimate of cancer potency that is higher than what EPA recommends for use in evaluating inhalation exposures; 2) inclusion of body weights and inhalation rates; and 3) occupancy for 180 days per year instead of the 250 days per year assumed in the EPA-approved risk-based concentration. Using the assumptions approved by EPA along with the exposure duration of 37 years, the risk-based concentration of $0.3 \mu\text{g}/\text{m}^3$ corresponds to a cancer risk of 4×10^{-6} (six in one million), which is lower than the cancer risk presented in Appendix D for a very similar concentration ($0.31 \mu\text{g}/\text{m}^3$) and also does not exceed the MassDEP cancer benchmark of 1×10^{-5} , or one in one hundred thousand.

Page 58 – “Environmental Testing” –

- The City notes that the BETA sampling results, noted as “the lowest” were also the smallest data set (6 samples). Later sampling efforts conducted by the City were larger and representative of more of the interior space than the initial work undertaken by BETA.
- The City disagrees with MDPH’s conclusion that bulk sampling “is likely” to have affected PCB levels in indoor air, given that a very small quantity of material is collected during bulk sampling. Based on mass transfer theories, the rate of pollutant emission from a solid material is strongly influenced by a chemical’s partitioning behavior, a function of vapor pressure, and ability to diffuse out of the bulk solid, related to the size of the molecule and surrounding matrix. PCBs are low volatility materials, and the bulk sampling conducted in the school affects small amounts of material (less than 10 grams). To suggest that a “release” of PCBs to the air from a less than 10 gram sample with small affected surface area can have a significant impact on air monitoring results, given the air volume in an over 500,000 square foot building, is implausible.

Recommendations (pages 61-66) –

- #2 – All PCB-impacted fixtures (including any remaining PCB-containing ballasts) were removed from the building as part of remedial work during summer 2011.
- #4 and #6 – Access to the firing range (D-143) has been limited to accessing the storage locker since mid-October until sampling indicates whether remediation is necessary.
- #7 – NBHS’ headmaster stated that a school-wide removal of mercury-containing products has occurred since MDPH’s 2008 visits.
- #14 – The mold shown in Picture 22 has already been removed. Other mold in the building is addressed as soon as it is identified.

- #15 – All unit ventilators, HVAC, and AC units operate during the school day; NBHS staff adjust programming for ventilation during after-school activities daily to ensure adequate airflow.
- #21 – All AC units have filters; these filters are changed at least twice per year.
- #24 – NBHS’ engineers check the 111 exhaust fans on the roof twice a year and when problems are noted.
- #26 – All exhaust ventilation units in the labs and shops are working and are programmed to run continuously. Each unit can be manually shut off as needed.
- #27 – Any expanding tile mastic is cleaned when floors are stripped and re-waxed (note that typically, mastic is covered by two coats of floor sealer and two coats of wax and is therefore inaccessible to building personnel).
- #31 and #37 – Chalk dust trays, pencil sharpeners, air diffusers, exhaust vents, and ceiling fan blades are cleaned periodically by building staff.
- #36 – Gym mats that were damaged or no longer in usable condition were replaced as part of remediation work during the summer of 2009.
- #40 – NBHS’ engineers have worked on replacing roof flashing in 2010 and 2011, which has addressed the majority of leaks. Other leaks are repaired as they are identified.
- #42 – A vendor was hired by the City in 2010 to seal all accessible cracks in cement where groundwater was infiltrating the Mechanical Room. This work has significantly decreased the amount of water present in this area.
- #45 – The aquarium shown in Picture 34 is no longer present in that classroom.
- Recommendations 8, 10, 16, 20, 23, 25, 30, 34, 35, 41, 43, 44, 46, and 49 are items which are addressed on an ongoing or case-by-case basis by the School Department. The remaining 19 recommendations are under review by the School Department and the Department of Environmental Stewardship.

Page 76 (Figure 2) and page 80 (Figure 6) – Gymnasiums should be labeled as E-Block (currently labeled as D-Block)

Table 4: Please revise the room for the maximum concentration in the E Block to E-117 (Girls gym) [currently listed as E-136 (Boys gym)].

Table 5:

- April 2006:
 - Revise the range of PCBs detected to 0.000013 – 0.0519 $\mu\text{g}/\text{m}^3$. The lowest concentration detected during the BETA April 2006 sampling round was 0.000013 $\mu\text{g}/\text{m}^3$ at location IAQ-4 (House 2 Hallway).
- August 2006:
 - Revise to show 2 co-located pairs for indoor air.
 - Revise to show 1 field duplicate for wipes.
 - Revise to show 3 background samples collected, as discussed above.
 - Revise the range of wipe concentrations to 0.419 – 8.996 $\mu\text{g}/\text{wipe}$ (0.419 $\mu\text{g}/\text{wipe}$ was detected in the Auditorium sample).

- Revise the maximum wipe concentration to be in room D-116 (Auto Shop) instead of room B-240.
- Clarify that TO-4A was utilized for background samples only; TO-10A was used for all field samples.
- July - August 2007:
 - Revise to show 6 background samples, as discussed above,
 - Revise the units of the wipe samples to $\mu\text{g}/100\text{ cm}^2$.
 - Clarify that TO-4A was utilized for background samples only; TO-10A was used for all field samples.
- February 2008: Revise to show 26/28 detects in indoor air.
- July 2008:
 - Revise the units of the wipe samples to $\mu\text{g}/100\text{ cm}^2$.
 - Revise the lower concentration detected for the wipe samples to $1.35\mu\text{g}/100\text{ cm}^2$.
- December 2008 - March 2009: Revise the units of the wipe samples to $\mu\text{g}/100\text{ cm}^2$.
- August 2010: Revise the units of the indoor air samples to $\mu\text{g}/\text{m}^3$.
- February 2011: Revise the range of indoor air concentrations to $0.00252 - 1.45\text{ }\mu\text{g}/\text{m}^3$ as $0.00252\text{ }\mu\text{g}/\text{m}^3$ was detected in room A-105-4.

Please contact me if you have any questions.

Respectfully,



Cheryl Henlin
Environmental Planner