



ENVIRONMENTAL FACT SHEET

CITY OF NEW BEDFORD'S ENVIRONMENTAL MONITORING AT THE KEITH MIDDLE SCHOOL

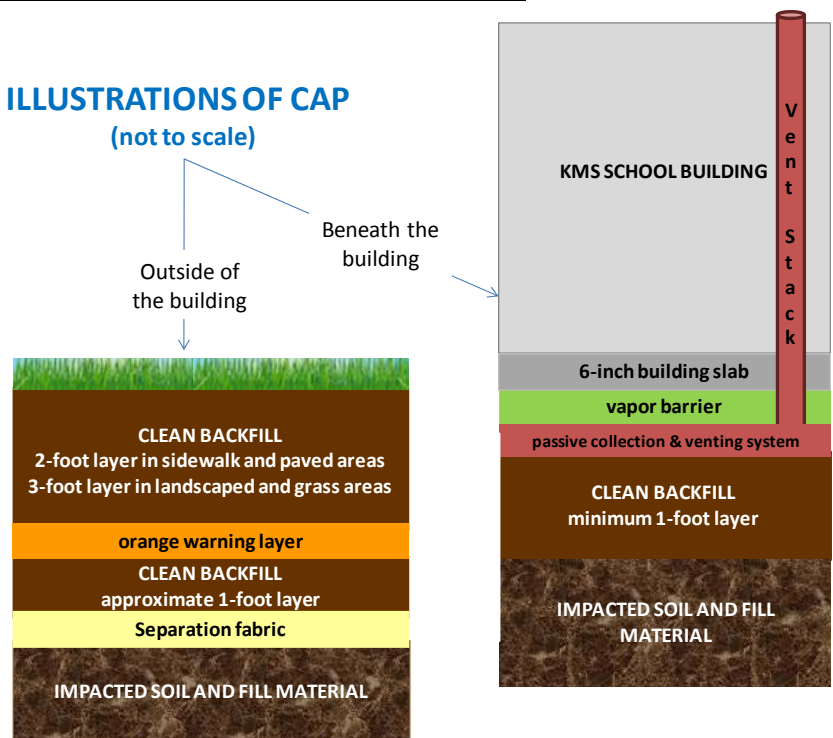
CITY OF NEW BEDFORD/TRC, SEPTEMBER 2010

Keith Middle School was built on a portion of the Parker Street Waste Site. The City monitors school site conditions to ensure the protection of the health of building occupants, as required by the U.S. Environmental Protection Agency (EPA). The City's environmental consultant, TRC Environmental Corporation (TRC), implements the monitoring plan. This fact sheet describes how the **cap** was built, what is monitored at the school and campus, findings from these activities to date, and the next steps to address the findings. Terms in bold are defined in the Glossary of Terms at the end of the Fact Sheet.

It is safe for people to occupy Keith Middle School and use the school's campus.

When Keith Middle School was built, a **cap** was installed beneath and around the building to prevent students, staff, and visitors from being exposed to impacted soil and fill. Under the building, this **cap** includes a vapor barrier that prevents vapors that may accumulate under the building from entering the building and affecting indoor air quality. With this barrier, vapors are vented through vent stacks (pipes that pass safely through the building walls up to the roof) from beneath the **cap** to the outdoor environment. Around the building, the **cap** of clean backfill prevents people from contacting impacted soil and fill. An orange warning barrier installed in the clean backfill provides a warning for anyone performing excavation to stop work.

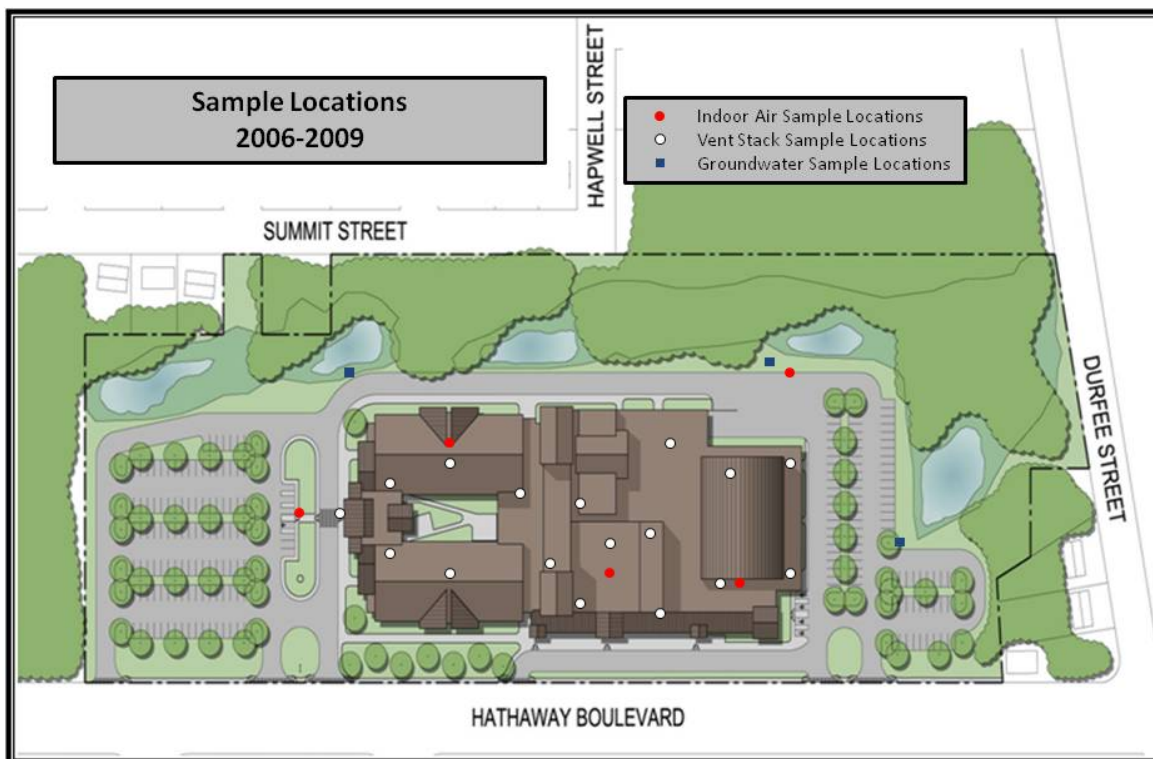
ILLUSTRATIONS OF CAP (not to scale)



Environmental monitoring being conducted

The City prepared and EPA approved a *Long-Term Monitoring and Maintenance Implementation Plan* that requires monitoring of the **cap**, indoor air, vent stacks, groundwater, and wetland sediment. The plan includes maintenance activities to ensure that the **cap** continues to prevent exposure to impacted soil. Under the plan, the City must periodically monitor groundwater, inspect and sample sediment from the wetland, and collect indoor air and vent stack air samples. The indoor air and vent stack air samples are analyzed for **volatile organic compounds (VOCs)** and **polychlorinated biphenyls (PCBs)** to assure that these chemicals are not moving from soil or groundwater beneath the school building to indoor air. The sediment samples are analyzed for **PCBs**.

Indoor air. TRC and BETA Group Inc. (BETA), the City's previous environmental consultant, have collected 21 rounds of indoor air monitoring data prior to and since the school was occupied in December 2006 (5 rounds in 2006, 8 rounds in 2007, 3 rounds in 2008, 3 rounds in 2009, and 2 rounds in 2010; the most recent round was conducted at the end of August 2010 and the samples are being processed at the laboratory). Based on TRC's completed evaluations, these indoor air concentration data indicate that there is no significant risk to the health of building occupants based on criteria established by the Massachusetts Department of Environmental Protection. TRC's evaluation included all chemicals detected in indoor air and was conducted in accordance with Massachusetts Contingency Plan guidelines, which require the assumption that someone spends 8 hours per day, 5 days per week for 27 years in locations where chemicals were detected. All indoor air concentrations of PCBs were detected at low concentrations or not at all, and are below an action level established by the EPA. TRC samples the outdoor air near the school each time that it samples the indoor air, and **VOCs** and **PCBs** have also been detected in outdoor air at very low concentrations or not at all. See the figure for air sample locations.



Vent Stack Air. TRC and a prior consultant have collected 22 rounds of vent gas data prior to and since the school was occupied in December 2006 (6 rounds in 2006, 8 rounds in 2007, 3 rounds in 2008, 3 rounds in 2009, and 2 rounds in 2010; the samples from the most recent round [August 2010] are currently being processed at the laboratory). **VOCs** are consistently detected in the vent stacks. **PCBs** are infrequently detected in the vent stacks. Detections of **VOCs**, and to a lesser extent **PCBs**, in vent stack air are expected due to the nature of soil impacts under the **cap** and the materials that were used to construct the vent stacks. These detections indicate that the passive ventilation system (air is moving

without a fan) is performing as designed. Vent stack air samples are collected from the vent stacks shown on the figure on a rotation so that only some vent stacks are sampled each time.

Groundwater. Groundwater sampling under the plan began in the spring of 2008. TRC has collected 5 rounds of groundwater samples starting in 2008 (2 rounds in 2008, 2 rounds in 2009, and 1 round in 2010). All TRC groundwater samples were analyzed for **VOCs, PCBs,** and metals; all of the results were below state regulatory groundwater standards. See the figure for the groundwater sampling locations.

Wetland Sediment. Sediment samples collected from the wetland adjacent to the Keith Middle School are the subject of a separate fact sheet, which, along with this fact sheet, is posted at the City's website under "Fact Sheets."

The Next Steps

TRC will continue monitoring conditions at the Keith Middle School to protect human health and the environment, and the City will continue to post all results at its website. TRC's monitoring includes updated evaluations based on each new round of monitoring data to ensure protection of the health of people using the building.

For More Information

All monitoring data and inspection reports are posted at the City's website <http://www.newbedford-ma.gov/McCoy/sitemap/sitemap.html>; filed under the "Keith Middle School" heading. The report from the April 2010 monitoring round is expected to be posted on the City's website in September. If you have additional questions, please contact Cheryl Henlin, City of New Bedford Environmental Stewardship Department, at (508) 991-6188 or email cheryl.henlin@newbedford-ma.gov.

GLOSSARY OF TERMS

Cap – The three feet of clean backfill in landscaped areas and the two feet of clean backfill in paved areas, as well as the fabric underneath these soil layers, that was brought to the site when the school was being built in 2006. This fabric and the soil on top of it keep people from coming into contact with soil impacted by PCBs and metals. The cap is inspected three times a year by a qualified engineer, and is maintained according to the EPA-approved Long-Term Monitoring and Maintenance Implementation Plan.

Polychlorinated biphenyls (PCBs) - Mixtures of up to 209 individual chlorinated compounds. There are no known natural sources of PCBs. Some PCBs can exist as vapor in air to a limited extent. PCBs have no known smell or taste. PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they do not burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977. Products made before 1977 that may contain PCBs include: certain building materials, such as caulking, paint, adhesive and fluorescent lighting fixtures; electrical devices containing PCB capacitors and transformers; and hydraulic oils.

Volatile organic compounds (VOCs) - VOCs include a variety of chemical compounds given off as gases from certain solids or liquids. VOCs are given off by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. Fuels/petroleum products contain VOCs. All of these products can release VOCs when in use, and, to some degree, when stored.