

Royalton-Hartland School District

Village of Middleport Campus

March 2006 Air Testing Results

Sampling completed by FMC Corporation



FMC Corporation collected a total of 54 air samples from the Middle School and Administration Building and the High School on March 19, 2006 and March 26, 2006, respectively. In addition, four samples were collected by New York State as quality assurance/quality control to the FMC sampling effort. The samples were collected as part of the ongoing environmental investigation of the FMC Middleport Plant site by the New York State Department of Health (NYSDOH), the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA), hereafter collectively referred to as the Agencies. Groundwater on- and off-site is contaminated with trichloroethene (TCE) and other volatile organic compounds (VOCs). The goal of the sampling was to assess the potential for students, faculty and staff of the Middleport campus to be exposed to vapors from contaminants in groundwater. These vapors can enter a building and affect the indoor air through a process referred to as soil vapor intrusion (see enclosed fact sheet for additional information). This information sheet describes the sampling that was performed, the results of the sampling, and our conclusions.

OVERALL CONCLUSION

TCE contamination from vapor intrusion was not detected in classrooms. However, low levels of other VOCs were detected in all samples collected. In general, these low levels are consistent with typical background concentrations for indoor air and do not represent a health concern. Based on the sampling results, we will recommend that FMC to resample some areas of the school buildings during the 2006-2007 heating season to confirm that existing building conditions (e.g. positive pressure heating, ventilation and/or air conditioning systems) are maintaining the desired endpoint (i.e., minimizing vapor intrusion into classroom areas).

SAMPLING OVERVIEW

When we sample indoor air, we expect to find VOCs because they are part of our everyday lives. They are present in the products we store and use in buildings and in the outdoor air brought into buildings either by open doors and windows or ventilation systems. To help assess whether VOCs are present in your indoor air due to soil vapor intrusion, off-gassing from indoor sources (e.g. cleaning products, school art supplies, chemical building maintenance products, etc.), and/or the infiltration of outdoor air, the Agencies requested FMC to perform the following:

- Collect four indoor air samples from basement areas of the buildings, where we would expect to see the highest indoor air concentrations if soil vapor intrusion were occurring,
- Collect twenty-three indoor air samples from classrooms, kitchens, dining areas, gymnasiums, hallways and office areas where students, faculty, and staff spend time and could be exposed. (NYSDEC collected four additional indoor air samples for quality assurance/quality control to the FMC sampling effort),
- Collect twenty-four air samples from beneath the slabs (referred to as the sub-slab vapor sample) or crawl space areas to determine if VOCs are present directly below occupied areas of the buildings,
- Collect three outdoor air samples to determine if outdoor sources of contamination could be affecting indoor air,

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- Submit air samples to an NYSDOH Environmental Laboratory Approval Program certified laboratory to test for TCE and other VOCs,
 - Complete campus building and product inventories, which includes a list of products present in your buildings that might contain VOCs and identifies potential points of entry for soil vapor (e.g., floor drains). This information is not included as an enclosure in this packet. However, it is available in the Middleport Village Library's document repository for the FMC site. (NYSDEC and NYSDOH accompanied FMC on a walk-through of buildings to determine appropriate sampling locations and subsequently recommended removal of some chemical products from the buildings prior to sample collection due to potential interference from product off-gassing) and,
 - Record real-time readings with sensitive air monitoring equipment around the VOC-containing products present in the buildings to determine if the products stored and used in the buildings are affecting indoor air.

 - **HIGH SCHOOL BUILDING RESULTS**
 - TCE, the groundwater contaminant found in monitoring wells at the FMC/School District property line and on School property, was not detected in the indoor air of the high school classrooms.
 - Low levels of TCE were detected in crawl space air. Some limited additional sampling will be recommended to determine whether concentrations have changed and to confirm that existing building conditions (e.g. positive pressure heating, ventilation and air conditioning systems) are maintaining the desired endpoint (i.e., minimizing soil vapor intrusion into classroom areas).
 - Low levels of other VOCs were detected in classrooms. The concentrations of these chemicals, in general, are at or below typical background concentrations and do not represent a health concern.
 - In addition to the VOCs discussed above, low levels of some other VOCs were detected in one classroom (designated 16A-classroom on Table 1); however, these VOCs are most likely from products used and stored in the classroom. During our pre-sampling walk-through of the building, we observed industrial art-related products (i.e., paints, paint thinners, solvents, etc.) stored in and near this classroom. The low levels of VOCs do not represent a health concern. However, to reduce exposures, we suggest that containers be tightly capped and efforts taken to minimize the number of products stored in this area to only those needed at that time, in addition to proper storage and use of any VOC-containing products.
 - Two VOCs, dichlorodifluoromethane (Freon 12) and trichlorofluoromethane (Freon 11) were detected at low concentrations in all sample locations from the High School. Both of these compounds are refrigerants and are also commonly found in hair products, cleaning and sanitation products and sealants. It appears that dichlorodifluoromethane and trichlorofluoromethane are likely coming from products or operations (heating, ventilation, and refrigeration systems) in the building or in the community as these compounds were found in the outdoor air too. The concentrations of these chemicals, in general, were

Royalton-Hartland School District

Village of Middleport Campus

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generally similar to typical background concentrations and do not represent a health concern.

- Low levels of petroleum-related chemicals (i.e., trimethylbenzenes, benzene, toluene, xylenes, etc.) were detected in sub-slab samples. Based on our experience with similar investigations, we would not expect the low concentrations of petroleum-related chemicals detected in the sub-slab vapor samples to have a meaningful effect on the indoor air quality of the building, but it is prudent to further evaluate this issue.
- Boiler rooms – some TCE was detected below the slab and in the air of one of the boiler rooms. Some additional sampling will be recommended to determine whether concentrations have changed. No TCE was detected below the slab of the other boiler room.
- We understand that students and faculty do not have access to the boiler rooms or crawl spaces and therefore, would not be exposed to the TCE detected there. Custodial and/or maintenance staff accessing the boiler rooms and/or crawl spaces are there for a short period of time and concentrations of TCE detected in the indoor air of either place are not expected to result in health effects.
- Low levels of TCE were detected in three other sub-slab samples, however, no TCE was detected in areas directly above these sample locations. Based on our experience with similar investigations, we would not expect the concentrations of TCE detected in the sub-slab vapor samples to have a meaningful effect on the indoor air quality of the school building.

MIDDLE SCHOOL BUILDING RESULTS

- Trace levels of TCE, close to the detection limit, were detected in two classrooms but not found in crawl spaces directly below these two classrooms. The results suggest that TCE is more likely to be coming from a source other than contaminated soil vapor and is not likely due to vapor intrusion from contaminated groundwater. The reported levels do not represent a health concern.
- Trace levels of TCE, close to the detection limit, were detected in three other crawl spaces; however, no TCE was detected in areas directly above these sample locations.
- We understand that students and faculty do not have access to the crawl spaces and, therefore, would not be exposed to the TCE detected there. Custodial and/or maintenance staff accessing these areas are there for a very short period of time and concentrations of TCE detected in these areas are not expected to result in health effects.
- Low levels of other VOCs were detected in all classrooms tested. The concentrations of these chemicals, are below or slightly above typical background concentrations and do not represent a health concern.
- Two VOCs, dichlorodifluoromethane (Freon 12) and trichlorofluoromethane (Freon 11) were detected at low concentrations in all sample locations from the Middle School. Both of these compounds are refrigerants and are also commonly found in hair products, cleaning and

Royalton-Hartland School District

Village of Middleport Campus

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sanitation products and sealants. It appears that dichlorodifluoromethane and trichlorofluoromethane are likely coming from products or operations (heating, ventilation, and refrigeration systems) in the building or in the community as these compounds were found in the outdoor air too. The concentrations of these chemicals were generally similar to typical background concentrations and do not represent a health concern.

- Based on our experience with similar investigations, we would not expect the low concentrations of TCE and other VOCs detected in the crawl space samples to have a meaningful effect on the indoor air quality in your building.

- **ADMINISTRATION BUILDING (a.k.a. the WHITE HOUSE) RESULTS**

- Low levels of TCE were detected in the indoor air of the Administration building. TCE was not detected beneath the slab of the building but was detected in the outdoor air. These results suggest that the TCE in the indoor air is more likely the result of outdoor air contamination or possibly products used in or near the building and less likely due to vapor intrusion from contaminated groundwater.
- We understand that students and faculty do not use this building and therefore would not be exposed to the low levels of TCE in indoor air. Although we did not find any products that contain TCE in the building at the time of sampling, we do know that the building is adjacent to the bus garage where old TCE-containing products may still be used (i.e., brake or engine cleaners).
- Two VOCs, dichlorodifluoromethane (Freon 12) and trichlorofluoromethane (Freon 11) were detected at low concentrations in all samples collected from the Administration building. Both of these compounds are refrigerants and are also commonly found in hair products, cleaning and sanitation products and sealants. It appears that dichlorodifluoromethane and trichlorofluoromethane are likely coming from products or operations (heating, ventilation, and refrigeration systems) in the building or in the community as these compounds are found in the outdoor air too. The concentrations of these chemicals were generally similar to typical background concentrations and do not represent a health concern.

- **OUTDOOR AIR RESULTS**

- VOCs were detected in the outdoor air samples. Most were detected at or slightly above typical outdoor air background levels and do not represent a health concern.
- TCE was detected above typical background concentrations in one sample. This sample was obtained from a location near the Administration and adjacent bus maintenance garage. As stated above, we believe that the source of the TCE may be due to products previously used or stored in the bus garage.
- TCE was not detected in the outdoor air upwind of the High school or the Middle school. In addition, the outdoor air sample collected near the Administration building was collected at the same day and time as that of the Middle school sample. Therefore, it appears that the TCE detected in outdoor air at the Administration building is not indicative of a wide-spread outdoor air issue.

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- CONTACT INFORMATION

- If you wish to discuss your results or any other information provided in this packet, please contact Ms. Charlotte Bethoney of the NYSDOH at 1-800-458-1158, extension 27860.

- ENCLOSURES

- Laboratory reports in tabular form. Please note that these tables include detected compounds only.
- Table 1 – High School data
- Table 2 – Middle School data
- Table 3 – Administration Building and Outdoor Air data
- Maps of indoor air, outdoor air, crawl space, and sub-slab sampling locations.
- *What is Exposure?* – an information sheet describing how a person may come into contact with chemicals in the environment.
- *Soil Vapor Intrusion: Frequently Asked Questions* – an information sheet describing the process referred to as “soil vapor intrusion.”
- *Trichloroethene (TCE) in Indoor and Outdoor Air* – an information sheet providing information on trichloroethene and the NYSDOH’s guideline for TCE in air.