



Assessing Outdoor Air Near Schools - St. Helens Elementary School

Madonna Narvaez
Air Toxics Team Lead

St. Helens Elementary 3/15/2011
Final Evaluation Report

Outline

- Background of Study
- Summary of Key Findings
- Next Steps for Key Pollutants
- Summary of Study Approach and Findings
- Additional Information





Background of Study

- School Air Toxics Initiative part of Administrator Lisa Jackson's commitment to assess air toxics levels outside some of the nation's schools
- Selected schools near sources of air toxics in various situations:
 - Large industries,
 - Urban areas with mix of large and small industries and mobile sources, or
 - Highways, airports, or other onroad and nonroad sources

Background of Study

- School selection based on information available from
 - Results from the 2002 National Air Toxics Assessment (NATA),
 - Results from a 2008 *USA Today* analysis of air toxics near schools, and
 - Information from state, local and tribal air agencies



Background of Study

- St. Helens Elementary selected based on following information
 - Potential for elevated ambient concentrations of **acrolein, acetaldehyde, manganese, and nickel**
 - SWCAA recommendation because of previous air toxics monitoring study done in Cowlitz County
 - For this school, EPA chose to look at possible impacts of large industrial source



Summary of Key Findings

- Key Hazardous Air Pollutants (HAPs) for St. Helens
 - Acrolein, acetaldehyde, manganese and nickel
 - Ambient air concentrations for these HAPs on all days during monitoring period (Sep. – Nov. 2009) indicate contributions from a nearby source
 - Acrolein concentrations were not considered in this analysis



Summary of Key Findings

- Although the data indicate the presence of a nearby source, the ambient concentrations found were below screening levels for short-term and long-term exposures developed for this project
- Meteorological data collected indicated that the sample set could be indicative of longer-term air concentrations



Next Steps for Key Pollutants

- Based on the analysis conducted by EPA, we will not extend air toxics monitoring at St. Helens Elementary School, because the levels found here are below our screening levels for this project
- SWCAA and Ecology's Industrial Section will continue to oversee industrial facilities in the area through air permits and other programs



Summary of Approach and Findings

- A monitor collected air samples from August 23, 2009 through November 15, 2009 at the St. Helen's Elementary School in Longview, Washington.
- Individual results posted on www.epa.gov/schoolair throughout the monitoring period.
- Results were evaluated to see if there was a concern from short-term exposures (e.g., several weeks).
- We analyzed the results of the completed monitoring to see if there was a concern from long-term exposures (over a lifetime).
- We also evaluated all the air samples from the on-site monitor:
 - Wind speed and wind direction from a weather monitor at the school,
 - As well as historical weather information and information about nearby source(s) of acetaldehyde, manganese, and nickel emissions.



Summary of Approach and Findings

- **Our analysis found that levels of acetaldehyde, manganese, and nickel in the air at the school are below screening levels for long-term exposure.**
- The concentrations of acetaldehyde, manganese, and nickel measured at the school are lower than those suggested by the information that first helped identify this school for monitoring.
- The process to identify schools for monitoring relied on emissions estimates and other information. Ambient air monitoring at the school allowed measurement of what was actually in the air.
- Information from the nearby pulp and paper mill source indicates that this facility was operating slightly above 2009 annual average levels (3,589 tons per day during the monitoring period versus 3,462 tons per day for all of 2009).
- **Because the analysis shows monitored concentrations of acetaldehyde, manganese, and nickel levels to be below screening levels, EPA will not extend air toxics monitoring at St. Helen's Elementary School.**



Additional Information

- The analysis considered whether the information collected at the school might raise concerns for the health of children or adults at the school. We looked at the following types of information:
 - Measured acetaldehyde, manganese, and nickel concentrations and information on acetaldehyde, manganese, and nickel
 - Measured wind direction and wind speed at the school
 - Information about nearby sources of acetaldehyde, manganese, and nickel emissions



Additional Information

- Measured wind direction and wind speed at the school
 - We found the wind patterns taken on the days we took measurements of acetaldehyde, manganese, and nickel to be somewhat similar to those observed during the entire sampling period.
 - Overall, information suggests that the 3-month sampling period may be representative of year-round wind patterns.



Additional Information

- Information on the nearby source of key HAPs emissions indicated:
 - this facility was operating slightly above 2009 annual average levels (3,589 tons per day production during the monitoring period versus 3,462 tons per day for all of 2009).
 - concentrations of key HAPs measured at the school are lower than those suggested by the information that helped identify this school for monitoring.



What questions do you have?

- Madonna Narvaez, Air Toxics Team Leader
- narvaez.madonna@epa.gov
- 206-553-2117

