

DHSS Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, June 27-July 1, 2013

The Department of Health and Senior Services (DHSS) has reviewed air quality screening data collected by the Department of Natural Resources (DNR) at Bridgeton Landfill from the afternoon of June 27 to the afternoon of July 1, 2013. On June 7, DHSS began issuing follow-up reviews of the daily air quality screening data on a twice-weekly basis.

On April 23, DNR began routine, twice daily, surveillance of hydrogen sulfide, benzene, and odor levels around the entire periphery of the landfill. In addition, DNR has provided continuous monitoring of reduced sulfur compounds (reported as hydrogen sulfide), sulfur dioxide, carbon monoxide, and total volatile organic compounds (VOCs) at three fixed locations. DHSS has reviewed both sets of data to identify potential public health concerns for short-term health effects. Generally, samples are collected near the property boundary and dispersion is expected to reduce exposure downwind of the sample locations.

Odors

DNR reported moderate to strong odors at locations south and southeast of the landfill during this time period.

- Winds were predominantly from the south, west, northwest, and southwest.
- The DNR contractor detected moderate odors south and southeast of the landfill on June 27 and 28, strong odors south of the landfill on June 29, light odors south of the landfill on June 30, and moderate odors south of the landfill on July 1 using a Nasal Ranger olfactometer.
- DHSS continues to recommend that during periods of objectionable odor, sensitive individuals should stay indoors as much as possible, avoid outdoor exercise, and seek medical advice for any acute symptoms. Symptoms associated with exposure to strong odors include headache, nausea, and fatigue. Symptoms generally associated with strong odors typically disappear once the odors dissipate.

Hydrogen Sulfide and Other Reduced Sulfur Compounds

Hydrogen sulfide concentrations were well below levels of public health concern.

- The maximum concentration of hydrogen sulfide detected was 7.3 parts per billion (ppb) during routine monitoring. Hydrogen sulfide concentrations were detected by the Jerome meter, which is highly sensitive and specific to hydrogen sulfide.
- For three hours on June 27 at the AreaRAE monitoring location east of the landfill, average concentrations of reduced sulfur compounds exceeded a health-based guideline for acute exposure to hydrogen sulfide. These compounds detected by AreaRAE monitors are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

Sulfur Dioxide

Average sulfur dioxide concentrations were below levels of public health concern.

- Sulfur dioxide was periodically detected at the monitoring location south of the landfill. However, average concentrations were below 0.01 parts per million (ppm) and did not exceed health-based guidelines for acute exposure.

Benzene and Total VOCs

Benzene was not detected in ambient air at any of the surveillance locations around the landfill.

- Previous sampling has shown that, while several VOCs are present in the landfill source gas, benzene may be a primary VOC of public health concern.
- For three hours on June 30 and two hours on July 1 at the monitoring location east of the landfill, total VOC concentrations slightly exceeded a level that indicates the need for compound-specific sampling.
- DNR is performing VOC compound-specific sampling in locations upwind and downwind of the landfill on a routine basis. The laboratory results are submitted for DHSS review of public health concerns.

Carbon Monoxide

Average carbon monoxide concentrations were well below levels of public health concern.

Radiation Rates

Gamma radiation rates were well below levels of public health concern.

- Gamma radiation rates continue to be at levels that are at or near natural background levels.