

DHSS Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, May 29 – June 2, 2014

The Department of Health and Senior Services (DHSS) has reviewed air quality monitoring data collected by the Department of Natural Resources (DNR) at Bridgeton Landfill from the afternoon of **May 29** to the afternoon of **June 2, 2014**.

DNR provides continuous monitoring data for reduced sulfur compounds (reported as hydrogen sulfide), sulfur dioxide, carbon monoxide, and total volatile organic compounds (VOCs) at three fixed locations as well as routine, twice daily, surveillance of hydrogen sulfide, benzene, and odor levels around the entire periphery of the landfill. 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 occasional light, moderate, and strong odors at various locations during this time period. 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 below levels of public health concern. Hydrogen sulfide levels are measured by the highly sensitive Jerome meter, which detects hydrogen sulfide specifically. Reduced sulfur compounds were periodically detected by AreaRAE monitors, but previous sampling has shown that these detections are primarily due to a reduced sulfur compound with strong odor but lower toxicity.

Sulfur Dioxide

Sulfur dioxide was not detected in ambient air at any of the monitoring locations around the landfill during this time period.

Benzene and Total VOCs

Benzene was not detected in ambient air at any of the surveillance locations around the landfill during this time period, except once in the afternoon of May 31 at a location southwest of the landfill. While monitoring at this location near the property line, readings were taken for an estimated 5 to 7 minutes with the highest reading reaching 250 parts per billion (ppb) benzene. A heavy rain event occurred as DNR staff were collecting additional confirmatory monitoring equipment. After the rain event concluded approximately 30 minutes later, both pieces of monitoring equipment were used and did not detect any benzene. Nearby AreaRAE monitors also did not

detect any elevated VOCs throughout the time period. This initial detection was above a health-based screening level for acute exposures lasting up to two weeks (9 ppb), but it did not exceed an acute screening level for benzene protective for exposures lasting up to six hours (400 ppb). Additionally, the sample was collected near the landfill property line and dispersion is expected to reduce exposure downwind of the sample location. Considering the very short duration of this detection, this is not considered a public health risk.

There are no health-based screening values for total VOCs. However, total VOC data are used to identify the need for compound-specific sampling. To be proactive, DNR is performing weekly VOC compound-specific sampling in locations upwind and downwind of the landfill. The laboratory results are submitted for DHSS review of public health concerns and that analysis is regularly posted online.

Carbon Monoxide

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

Radiation Rates

Gamma radiation rates continue to be indistinguishable from natural background levels and were below levels of public health concern.