DHSS Review of Air Monitoring Data from the Bridgeton Landfill Area
April 23 – May 3, 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 between April 23 and May 3, 2013. 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.

Reduced Sulfur Compounds

DNR monitors intermittently detected reduced sulfur compounds at two of the monitoring locations, south and west of the landfill, particularly during periods of moderate to strong odors. While average concentrations exceeded acute, short-term health-based guidelines for hydrogen sulfide on several occasions, the compounds being detected were not primarily hydrogen sulfide but were other reduced sulfur compounds. In fact, all readings with the Jerome meter, which specifically detects hydrogen sulfide only, were well below acute levels of public health concern. Based on recent lab analysis, the primary reduced sulfur compound in the landfill gas is a compound with similar strong “rotten egg” odor, but much lower toxicity. Given this information, it is unlikely that reduced sulfur concentrations were above a level of public health concern during this time period, even though odors were often strong.

Sulfur Dioxide

Concentrations of sulfur dioxide continued to exceed health-based guidelines for short-term exposure at the monitoring location west of the landfill property line, near the Metropolitan Sewer District (MSD) lift station. Sewer gas from the lift station may have contributed to the sulfur dioxide readings at this location. On April 30, hourly average sulfur dioxide concentrations detected at the monitoring location south of the landfill also exceeded acute guidelines. While exposure to sulfur dioxide at these concentrations may cause short-term symptoms, considerable dispersion is expected to reduce potential exposure levels at nearby residential areas. Sulfur dioxide concentrations did not approach levels that could result in more serious short-term or long-lasting effects.

Odors

Strong odors were identified at some surveillance locations around the landfill on a daily basis, generally depending on the wind direction. Symptoms associated with exposure to strong odors include headache, nausea, and fatigue. 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 generally associated with strong odors typically disappear once the odors dissipate.

Benzene, Total VOCs and Carbon Monoxide

Benzene was not detected in ambient air at any of the surveillance locations around the landfill. Hourly average concentrations of carbon monoxide and total VOCs did not exceed levels of health concern.