DHSS Daily Follow-Up Review of Air Monitoring Data from the Bridgeton Landfill Area, June 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 from the afternoon of June 2 to the afternoon of June 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 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

Odors were reported by DNR as being very strong in the morning today, especially at locations south and southwest the landfill. Winds were light and variable, although predominantly from the north-northwest and northeast.

- The DNR contractor detected moderate odors south and southwest of the landfill 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 6.4 parts per billion (ppb). Hydrogen sulfide concentrations were detected by the Jerome meter, which is highly sensitive and specific to hydrogen sulfide.
- AreaRAE monitors detected low concentrations of reduced sulfur compounds at monitoring locations west and south of the landfill. These compounds are not just hydrogen sulfide but primarily another reduced sulfur compound with lower toxicity.

Sulfur Dioxide

Average sulfur dioxide concentrations did not exceed levels of public health concern, except for a limited time period at one monitoring location near the landfill.

- For approximately 2 hours on the afternoon of June 2nd, the average sulfur dioxide concentration at the monitoring location south of the landfill was 0.05-0.08 parts per million (ppm), exceeding a health-based guideline for acute exposure.
- Exposure to these concentrations of sulfur dioxide may cause irritation and other short-term symptoms.

Benzene and Total VOCs

Benzene was detected in low concentrations in ambient air in several locations, mostly south of the landfill.

- Benzene concentrations of 0.05 ppm were detected today in several surveillance locations and a residential area located approximately one mile south of the landfill. These detections were reported to be intermittent, not lasting longer than 5 minutes at each location.
- Exposure to these concentrations of benzene may cause irritation and other short-term symptoms.
- 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.
- Average total VOC concentrations were not at a level that indicates a need for compound-specific sampling.

Carbon Monoxide

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

Radiation Rates

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

Gamma radiation levels are monitored continuously at three locations around the site using AreaRae instruments equipped with radiation detectors.