West Lake Update

August 30, 2017

In this edition of West Lake Update we will bring you up to date on federal and state efforts to monitor air quality and Clean Air Act compliance efforts around the Bridgeton area.

As you may remember, in late 2016, we wrote extensively on the subject in a three part series you can find online:

Air Monitoring Continues in Bridgeton

Part 1 of 3: Clean Air Act Compliance | Part 2 of 3: EPA Air Monitoring | Part 3 of 3: MDNR Air Monitoring

EPA and State Actions Reduce Landfill Odors and Complaints

Since 2013, EPA and the Missouri Department of Natural Resources have taken a number of actions to reduce landfill odors and control landfill gas emissions from the West Lake/Bridgeton landfills and from the Champ Landfill to the south.

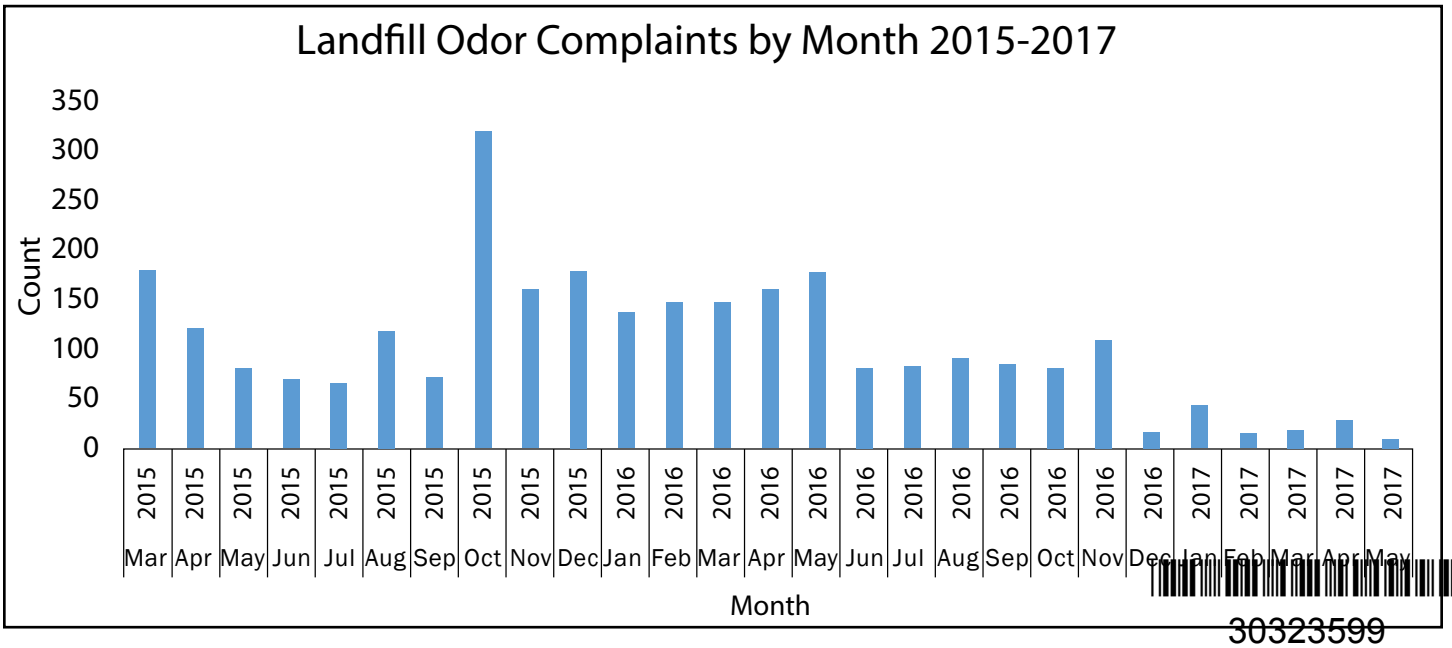
In August 2013, contractors under EPA oversight completed the ethylene vinyl alcohol (EVOH) cover in the South Quarry of the Bridgeton Landfill to, among other things, direct the landfill gases toward the gas extraction wells and ultimately to the flares for combustion. Work is nearly complete on the cover for the North Quarry portion of the landfill, which is expected to result in greater control of landfill gas and odors. From 2014 to 2016, Republic Services with oversight from MDNR made a number of improvements to its landfill gas collection system.

The greatest reduction seen in the odor complaints occurred in December 2016 when Champ Landfill completed numerous measures designed to minimize odors and landfill gas air emissions. Modification of its existing gas collection system and the installation of 33 additional gas extraction wells resulted in significantly lower landfill gas emissions and odors to the surrounding community. In August 2016, Champ Landfill owners agreed to complete this work after inspections identified the need for air quality improvement.

Since 2015, MDNR has collected and investigated odor complaints surrounding the West Lake and Bridgeton Landfills. Below is an analysis of the frequency of odor complaints by month.

The odor complaint data demonstrates a positive trend in the reduction of odors and improved air quality management at both nearby landfills.

Occasionally, ongoing work at the landfills may cause a temporary increase in odors. The MDNR posts alerts to its Bridgeton Landfill website when such work is taking place. The Missouri Department of Health and Senior Services recommends 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.



EPA, MDNR, and Potentially Responsible Party Air Monitoring

In order to assess air quality at the West Lake and Bridgeton Landfills and the surrounding area, EPA, MDNR, and Bridgeton Landfill, LLC have conducted both continuous real-time and sensitive, low detection level air sampling from 2013 to the present.

In 2013, MDNR initiated an ambient air sampling program designed around detecting and responding to landfill odors at the Bridgeton Landfill. MDNR continues to collect continuous air data for sulfur dioxide (SO2), hydrogen sulfide (H2S), total Volatile Organic Compounds (VOCs), carbon monoxide (CO) and gamma radiation. MDNR also collects weekly air samples that are analyzed in a laboratory for individual VOCs at low detection levels. These sample results are collected on-site and are intended to represent higher concentrations with a shorter duration of exposure to landfill gases and other chemicals that may be present.

Daily surveillance is conducted by MDNR at commercial and residential locations surrounding the Bridgeton Landfill for H2S and benzene using more specific and sensitive hand-held instruments. These data are real-time, of short duration and represent higher chemical concentrations from locations selected on the basis of reported or observed odors.

In 2014, EPA began conducting ambient air monitoring at five locations surrounding the West Lake and Bridgeton Landfills. EPA conducted sampling for VOCs and radionuclides, including alpha, beta, and gamma radiation, and radon. These samples were analyzed by a combination of real-time and fixed laboratory methods to provide both continuous and sensitive data with low levels of detection. The intent of the EPA ambient air sampling was to establish a baseline of area air quality for future comparison during remedy construction at the West Lake Landfill.

From May 2015 to the present, Bridgeton Landfill, LLC has operated 13 on-site air monitors for radionuclides; five of these stations collect 14-day composite samples for VOCs. The purpose of these data are to measure and establish a baseline of on-site emission of radionuclides and VOCs.

From August 2016 to the present, Bridgeton Landfill, LLC has conducted baseline air monitoring for SO2 at two locations: one near the water tower in Spanish Village and another near St. Charles Rock Road just north of the Bridgeton Landfill. MDNR conducts sampling for SO2 at its "Rider Trail" monitor located just south of the Bridgeton Landfill. The data from these three monitors may be directly compared with the 1-hour SO2 National Ambient Air Quality Standard (NAAQS) which is 75 parts per billion (ppb).

Air Monitoring Results

The ambient air sampling conducted by MDNR and EPA for radionuclides indicates that the results are all consistent with background levels. No levels of public health concern have been detected. All areas of the country have a natural level of background radiation. The background radiation of St. Louis is no different than other similar areas of the country. The Bridgeton Landfill, LLC and MDNR SO2 monitors are consistently reporting hourly average levels of less than 10 parts per billion in the Bridgeton area. The results are well below the 75 ppb air quality standard and are comparable with the SO2 levels collected by MDNR at its Blair Street monitor in downtown St. Louis.

EPA air sampling for VOCs at the five monitoring stations surrounding the West Lake/Bridgeton Landfill completed in 2014 and 2015 concluded that only one chemical, trichloroethylene (TCE), was detected at levels greater than the reference monitoring station in downtown St. Louis. Although concentrations of TCE were detected at levels greater than the reference St. Louis monitor, the measured levels are in line with other monitored areas throughout the country. EPA's air program conducted inspections and examined TCE emissions reported for Bridgeton area facilities to identify possible sources. Area sources of TCE inspected were found to be in compliance with air permits. To date, EPA has not found an off-site source for the TCE. Bridgton Landfill, LLC air sampling indicates that on-site VOCs are consistent with the levels EPA found in its off-site effort.

EPA and MDNR will continue monitoring, and inspections as necessary, to continue to improve air quality in the Bridgeton area.

Find Us On

www.facebook.com/WestLakeLandfillSuperfundSite
www.twitter.com/WestLakeSite
www.scribd.com/eparegion7
www.epa.gov/mo/west-lake-landfill

Community Inquiries

Ben Washburn
913-551-7364
Washburn.Ben@epa.gov

EPA air monitoring data is available online:
www.epa.gov/mo/west-lake-landfill

MDNR air monitoring data is available on their website:
dnr.mo.gov/bridgeton/

There are many sources available to the public to learn more about background radiation levels.

EPA background radiation information sources:
www.epa.gov/radiation/radiation-sources-and-doses
www.epa.gov/radiation/calculate-your-radiation-dose

Health Physics Society:
hps.org/documents/background_radiation_fact_sheet.pdf

USGS maps with cosmic and terrestrial exposure rates:
pubs.usgs.gov/of/2005/1413/maps.htm