



Air Quality Analysis for Lead

To determine if an area surrounding a monitor is in compliance with the national ambient air quality standard (NAAQS) for lead, EPA and the Missouri Department of Natural Resources look at the average of three months of data. Does that average exceed the standard? The lead standard has been 0.15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) since 2008, when EPA tightened the standard by a factor of ten. The standard had been 1.5 micrograms per cubic meter.

Also in 2008, EPA required states to operate source-oriented monitors -- particularly near sources with one ton or more of annual lead emissions. Two years later, EPA strengthened the mandate, requiring states to operate monitors near sources annually emitting a half ton or more of lead. Today, the state of Missouri operates 12 lead monitoring stations near sources of lead emissions. In addition, the department provides oversight and quality assurance for 10 lead monitoring sites operated by the Doe Run Co.

The following table shows three-month average concentrations for airborne lead during the last twelve months. The data become part of EPA's Air Quality System database. Yellow highlighting draws attention to concentrations that exceeded the standard. In the past, data exceeded the lead standard near Doe Run's primary lead smelter in Herculaneum, which closed in 2013; near the Buick secondary smelter and near the Forest City secondary smelter. Data from Glover also exceeded the standard; however, the upswing resulted from demolition of the Glover facility. By modifying its demolition procedure, Doe Run reduced the ambient air concentration of lead.

Since 2014, only air monitoring stations near the Buick facility have produced data exceeding the standard. Both Doe Run and the state operate lead air monitors near the facility. The department's Air Pollution Control Program continues to work with Doe Run to help it come into compliance at all locations.

For more information about lead, see the following EPA website, which includes links to additional information on health effects, standards, implementation and other information:
epa.gov/lead-air-pollution



Preliminary 3-Month Average Lead Concentrations, July 2016-August 2017, micrograms per cubic meter (µg/m³)

Updated 11/14/2017

Site numbers correspond to map legend.

Blue highlight indicates non-ambient sites, i.e., sites within a facility fence-line.
No ambient lead monitoring sites exceeded the National Ambient Air Quality Standard (0.15 microgram per cubic meter) during the time shown.

Samples are collected for 24 hours every sixth day except as noted below.

EPA's Air Quality System (AQS) does not have a report that will calculate and provide three-month rolling averages for each month. The values in this table are calculated from data reported to AQS by the department. These values may differ slightly from subsequent AQS averages if reports of averages become available or from design values (maximum 3-month average in a 3-year period).

State Sites

Area/Site	Jul-Sep 2016	Aug-Oct 2016	Sep-Nov 2016	Oct-Dec 2016	Nov-Jan 2016-17	Dec-Feb 2016-17	Jan-Mar 2017	Feb-Apr 2017	Mar-May 2017	Apr-Jun 2017	May-Jul 2017	Jun-Aug 2017
Forest City Area												
1. Exide Levee	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
St. Louis Area												
2. Blair St.*	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Herculaneum Area												
3. Pevely North	0.01	0.01	0.01	0.01	0.01							
4. Pevely	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5. Sherman^	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02
6. Dunklin High School^	0.04	0.04	0.05	0.05	0.04	0.02	0.01	0.02	0.03	0.04	0.04	0.03
7. Mott St.^	0.07	0.08	0.07	0.07	0.12	0.14	0.12	0.10	0.07	0.06	0.06	0.06
8. Ursuline North	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01
Old Lead Belt Area												
9. St. Joe State Park***	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.03	0.01	0.02	0.03	0.02
New Lead Belt Area												
10. Glover	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01
11. Buick Northeast	0.06	0.04	0.08	0.08	0.08	0.03	0.03	0.04	0.10	0.09	0.13	0.08
12. Oates	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.01	0.02	0.03
13. Bills Creek	0.01	0.01	0.01	0.01	0.01							
14. Fletcher**	0.00	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01

*Blair St. measures PM10 lead by a federal equivalent method as part of the NATTS program. Analysis results are sometimes received later than from other sites.

^Sherman and Dunklin High School sites sample every 3 days. St. Joe State Park site sampled every 3 days through March 2016, then every six days. Averages include all samples.

^^Mott St. site samples every day. Averages include all samples.

***St. Joe State Park collected valid samples on only 2 days out of 5 scheduled in October 2016 and Fletcher collected valid sample on only 1 day out of 5 scheduled in March 2017.

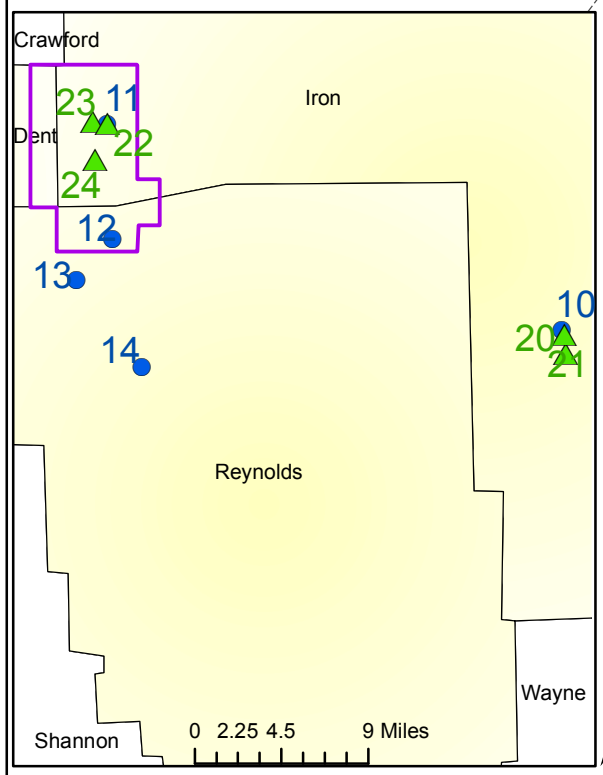
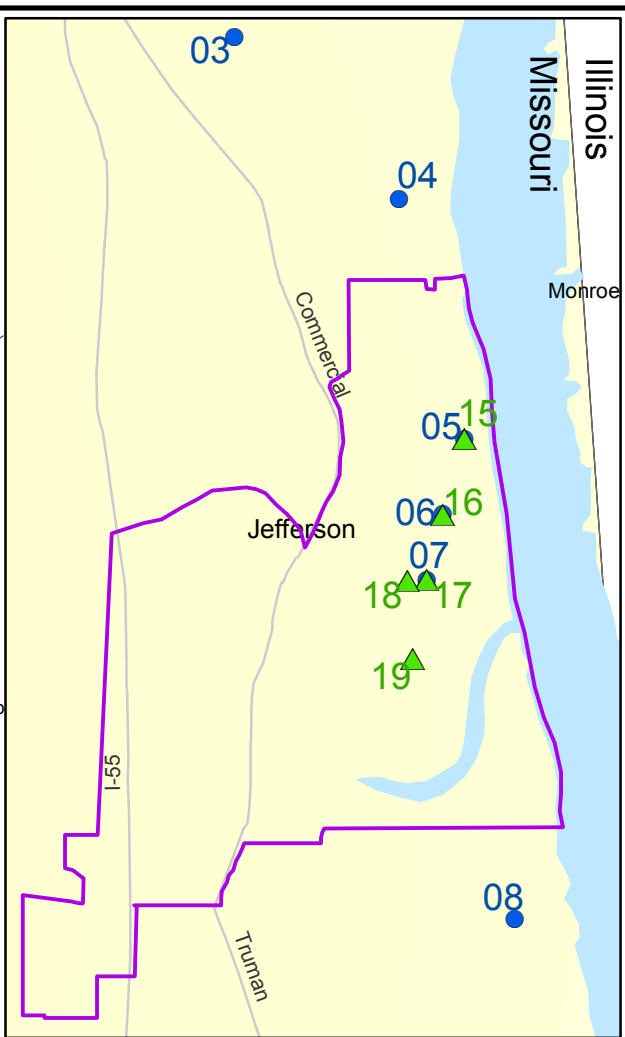
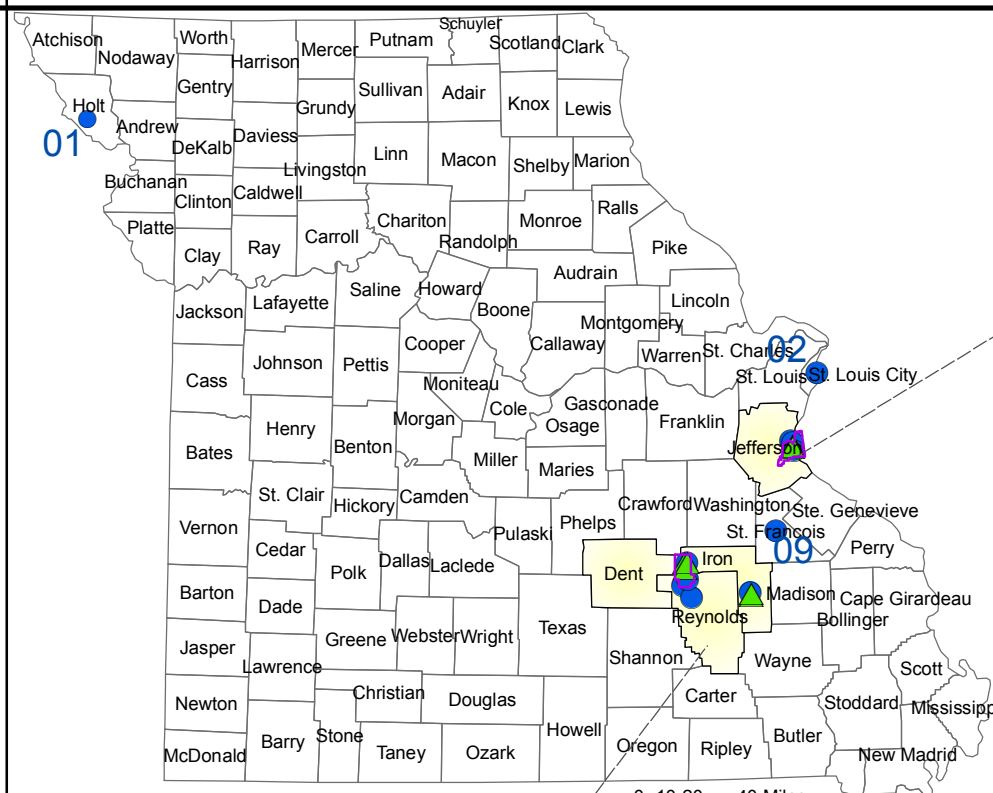
Preliminary 3-month averages above (shown in blue) are therefore based on incomplete data. AQS will calculate final 3-month averages using substitution of earlier data; results may be slightly different.

Doe Run Operated Sites

Area/Site	Jul-Sep 2016	Aug-Oct 2016	Sep-Nov 2016	Oct-Dec 2016	Nov-Jan 2016-17	Dec-Feb 2016-17	Jan-Mar 2017	Feb-Apr 2017	Mar-May 2017	Apr-Jun 2017	May-Jul 2017	Jun-Aug 2017
Herculaneum Area												
15. Sherman	0.02	0.02	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.02	0.02	0.01
16. Dunklin High School*	0.04	0.04	0.04	0.05	0.04	0.03	0.02	0.02	0.05	0.08	0.09	0.05
17. City Hall (Mott St.)**	0.08	0.10	0.08	0.11	0.12	0.14	0.11	0.10	0.07	0.07	0.06	0.06
18. N. Cross**	0.07	0.08	0.06	0.05	0.05	0.09	0.09	0.08	0.04	0.04	0.04	0.05
19. Church St. (non-ambient)	0.03	0.03	0.05	0.04	0.06	0.06	0.06	0.05	0.03	0.03	0.06	0.06
New Lead Belt Area												
20. Glover Post Office (non-ambient)	0.01	0.01	0.07	0.07	0.08	0.02	0.02	0.02	0.04	0.03	0.03	0.01
21. Glover Big Creek (non-ambient)	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.09	0.10	0.09	0.02	0.01
22. Buick Northeast**	0.05	0.04	0.09	0.09	0.09	0.04	0.04	0.05	0.10	0.10	0.12	0.09
23. Buick N (non-ambient)	0.10	0.07	0.11	0.14	0.12	0.15	0.18	0.37	0.29	0.26	0.11	0.11
24. Buick S (non-ambient)	0.05	0.06	0.12	0.17	0.16	0.24	0.33	0.35	0.23	0.12	0.19	0.24

*Doe Run Dunklin High School site samples every 3 days. Averages include all samples.

**Doe Run City Hall (Mott St.) site samples every day. Doe Run N. Cross site samples every day starting 2/11/2017. Doe Run Buick Northeast site samples every day starting 6/1/2017. Averages include all samples.



Lead Air Monitors in Missouri

as of November 2017

- Legend**
- ▲ Industry lead monitor
 - State lead monitor
 - Nonattainment area for lead



- State Sites**
- Forest City Area**
- 01 Exide Levee
- St. Louis Area**
- 02 Blair Street+
- Herculaneum Area**
- 03 Pevely North*
 - 04 Pevely
 - 05 Sherman
 - 06 Dunklin High School
 - 07 Mott St.
 - 08 Ursuline North
- Old Lead Belt Area**
- 09 St. Joe State Park
- New Lead Belt Area**
- 10 Glover
 - 11 Buick Northeast
 - 12 Oates
 - 13 Bills Creek*
 - 14 Fletcher
- Doe Run-Operated Sites**
- Herculaneum Area**
- 15 Sherman
 - 16 Dunklin High School
 - 17 'City Hall' (Mott St.)
 - 18 N. Cross
 - 19 Church St.**
- New Lead Belt Area**
- 20 Glover Post Office**
 - 21 Glover Big Creek**
 - 22 Buick Northeast
 - 23 Buick N**
 - 24 Buick S**
- * Discontinued monitor
 ** Non-ambient monitor
 + PM₁₀ lead -- lead component of particulate matter up to 10 micrometers