

**WATER TREATMENT PLANT, EAST LIVERPOOL, OHIO  
MANGANESE PM10 CONCENTRATIONS 2009, 2011-2016**

2009		2011		2012		2013		2014		2015		2016	
Date	µg/m3	Date	µg/m3	Date	µg/m3	Date	µg/m3	Date	µg/m3	Date	µg/m3	Date	µg/m3
2009-01-01	0.014	2011-06-26	0.011	2012-01-04	0.011	2013-01-04	0.014*	2014-01-05	1.200	2015-01-06	0.079	2016-01-01	0.520
2009-01-07	0.071	2011-07-02	0.262	2012-01-10	0.145	2013-01-10	0.260	2014-01-11	0.016*	2015-01-12	0.210	2016-01-07	0.016*
2009-01-13	0.014*	2011-07-08	0.344	2012-01-16	0.326	2013-01-16	0.014*	2014-01-17	0.016	2015-01-18	0.053	2016-01-13	0.017
2009-01-19	0.036	2011-07-14	0.985	2012-01-22	0.019	2013-01-22	0.017	2014-01-23	0.014*	2015-01-24	0.040	2016-01-19	0.500
2009-01-25	0.014*	2011-07-20	0.279	2012-01-28	0.008	2013-01-28	0.018	2014-01-29	1.000	2015-01-30	0.031	2016-01-25	1.100
2009-01-31	0.014*	2011-07-26	0.152	2012-01-04	0.014*	2013-02-03	0.014*	2014-02-04	0.250	2015-02-05	0.043	2016-01-31	0.021
2009-02-06	0.610	2011-08-01	0.180	2012-01-10	0.056	2013-02-09	0.110	2014-02-10	0.048	2015-02-11	0.150	2016-02-06	0.032
2009-02-12	0.014*	2011-08-07	0.010	2012-01-16	0.130	2013-02-15	0.570	2014-02-16	0.031	2015-02-17	0.096	2016-02-12	0.072
2009-02-18	0.470	2011-08-13	0.118	2012-01-22	0.014*	2013-02-21	0.130	2014-02-22	0.031	2015-02-23	0.050	2016-02-18	BA
2009-02-24	0.260	2011-08-19	1.540	2012-01-28	0.015*	2013-02-27	0.015*	2014-02-28	0.680	2015-03-01	0.120	2016-02-24	0.160
2009-03-02	0.058	2011-08-25	0.026	2012-02-03	0.410	2013-03-05	1.000	2014-03-06	0.430	2015-03-07	0.760	2016-03-01	0.260
2009-03-08	0.049	2011-08-31	1.230	2012-02-09	0.040	2013-03-11	0.340	2014-03-12	0.022	2015-03-13	0.041	2016-03-07	0.160
2009-03-14	0.017	2011-09-06	1.530	2012-02-15	0.099	2013-03-17	0.014	2014-03-18	0.290	2015-03-19	1.000	2016-03-13	0.016*
2009-03-20	0.050	2011-09-12	0.993	2012-02-21	0.210	2013-03-23	0.026	2014-03-24	0.029	2015-03-25	0.270	2016-03-19	0.015
2009-03-26	0.540	2011-09-18	0.030	2012-02-27	0.022	2013-03-29	0.120	2014-03-30	0.015*	2015-03-31	0.280	2016-03-25	0.015*
2009-04-01	0.470	2011-09-24	0.012	2012-03-04	0.015*	2013-04-04	0.460	2014-04-05	0.015	2015-04-06	0.930	2016-03-31	0.083
2009-04-07	0.015*	2011-09-30	0.007	2012-03-10	0.014*	2013-04-10	0.086	2014-04-11	0.047*	2015-04-12	0.096	2016-04-06	0.520
2009-04-13	0.460	2011-10-06	0.928	2012-03-16	0.025	2013-04-16	0.200	2014-04-17	0.170	2015-04-18	0.170	2016-04-12	0.054
2009-04-19	0.022	2011-10-12	2.450	2012-03-22	0.170	2013-04-22	0.220	2014-04-23	0.020	2015-04-24	0.190	2016-04-18	0.340
2009-04-25	0.032	2011-10-18	0.295	2012-03-28	0.026	2013-04-28	AV	2014-04-29	0.082	2015-04-30	0.200	2016-04-24	0.025
2009-05-01	0.015*	2011-10-24	0.123	2012-04-03	0.230	2013-05-04	0.230	2014-05-05	AN	2015-05-06	0.430	2016-04-30	0.032
2009-05-07	0.015*	2011-10-30	0.010	2012-04-09	0.015*	2013-05-10	0.130	2014-05-11	0.040	2015-05-12	0.023	2016-05-06	0.560
2009-05-13	0.190	2011-11-05	0.076	2012-04-15	0.015*	2013-05-16	0.028	2014-05-17	0.015*	2015-05-18	0.180	2016-05-12	AN
2009-05-19	0.033	2011-11-11	0.020	2012-04-21	0.015*	2013-05-22	0.017*	2014-05-23	0.050	2015-05-24	0.230	2016-05-18	0.200
2009-05-25	0.031	2011-11-17	0.017	2012-04-27	0.015*	2013-05-28	0.120	2014-05-29	0.140	2015-05-30	0.059	2016-05-24	0.045
2009-05-31	0.043	2011-11-23	0.035	2012-05-03	0.075	2013-06-03	0.120	2014-06-04	0.130	2015-06-05	0.140	2016-05-30	0.021
2009-06-06	0.028	2011-11-29	0.030	2012-05-09	0.016	2013-06-09	0.020	2014-06-10	0.120	2015-06-11	0.047	2016-06-05	0.016*
2009-06-12	0.036	2011-12-05	0.524	2012-05-15	0.032	2013-06-15	0.019	2014-06-16	0.048	2015-06-17	1.500	2016-06-11	0.019
2009-06-18	0.023	2011-12-11	0.029	2012-05-21	0.160	2013-06-21	0.060	2014-06-22	0.024	2015-06-23	0.310	2016-06-17	0.170
2009-06-24	0.042	2011-12-17	0.007	2012-05-27	0.015*	2013-06-27	0.026	2014-06-28	0.180	2015-06-29	0.099	2016-06-23	0.030
2009-06-30	0.015*	2011-12-23	0.004	2012-06-02	0.015*	2013-07-03	0.059	2014-07-04	0.025	2015-07-05	0.036	2016-06-29	0.026
2009-07-06	0.220	2011-12-29	1.850	2012-06-08	0.015*	2013-07-09	0.015*	2014-07-10	0.080	2015-07-11	0.036	2016-07-05	0.016*
2009-07-12	0.015*	2011-10-05	AG	2012-06-14	AN	2013-07-15	0.026	2014-07-16	0.070	2015-07-17	0.880	2016-07-11	0.140
2009-07-18	0.015*	2011-10-12	0.081	2012-06-20	0.022	2013-07-21	0.015*	2014-07-22	0.065	2015-07-23	0.790	2016-07-17	0.016*
2009-07-24	0.016	2011-10-13	1.580	2012-06-26	0.110	2013-07-27	0.024	2014-07-28	0.016*	2015-07-29	0.160	2016-07-23	0.016*
2009-07-30	0.081	2011-10-14	AV	2012-07-02	0.110	2013-08-02	0.035	2014-08-03	0.015*	2015-08-04	0.064	2016-07-29	0.016*
2009-08-05	0.260	2011-10-15	0.003	2012-07-08	0.015*	2013-08-08	0.057	2014-08-09	0.140	2015-08-10	2.600	2016-08-04	0.170
2009-08-11	0.270	2011-10-16	0.002	2012-07-14	0.016*	2013-08-14	0.015*	2014-08-15	0.081	2015-08-16	0.033	2016-08-10	0.330
2009-08-17	0.140	2011-10-17	0.006	2012-07-20	0.064	2013-08-20	0.053	2014-08-21	0.015	2015-08-22	0.130	2016-08-16	0.016*
2009-08-23	0.015*	2011-10-18	0.032	2012-07-26	0.460	2013-08-26	0.280	2014-08-27	0.110	2015-08-28	0.250	2016-08-22	0.041
2009-08-29	0.015*	2011-10-19	1.210	2012-08-01	0.070	2013-09-01	0.049	2014-09-02	0.016*	2015-09-03	0.076	2016-08-28	0.016*
2009-09-04	0.120	2011-10-20	0.007	2012-08-07	0.099	2013-09-07	0.032	2014-09-08	0.840	2015-09-09	0.160	2016-09-03	0.017
2009-09-10	1.100	2011-10-21	0.001	2012-08-13	0.310	2013-09-13	0.020	2014-09-14	0.034	2015-09-15	0.130	2016-09-09	0.026
2009-09-16	0.680	2011-10-22	0.002	2012-08-19	0.016*	2013-09-19	0.096	2014-09-20	0.084	2015-09-21	0.210	2016-09-15	0.130

2009-09-22	0.500	2011-10-23	0.002	2012-08-25	0.016*	2013-09-25	AV	2014-09-26	3.600	2015-09-27	1.100	2016-09-21	0.230
2009-09-28	AN	2011-10-24	0.012	2012-08-31	0.089	2013-10-01	0.067	2014-10-02	0.270	2015-10-03	0.840	2016-09-27	0.032
		2011-10-25	0.021	2012-09-06	0.018	2013-10-07	0.015*	2014-10-08	0.020	2015-10-09	2.000		
		2011-10-26	0.135	2012-09-12	1.400	2013-10-13	0.170	2014-10-14	0.870	2015-10-15	0.400		
		2011-10-27	0.045	2012-09-18	0.016*	2013-10-19	0.063	2014-10-20	0.026	2015-10-21	0.260		
		2011-10-28	0.427	2012-09-24	0.045	2013-10-25	0.096	2014-10-26	0.020	2015-10-27	3.400		
		2011-10-29	0.001	2012-09-30	0.019	2013-10-31	0.059	2014-11-01	0.022	2015-11-02	0.280		
		2011-10-30	0.001	2012-10-06	0.015*	2013-11-06	0.270	2014-11-07	0.015*	2015-11-08	0.100		
		2011-10-31	0.024	2012-10-12	0.120	2013-11-12	0.024	2014-11-13	0.015*	2015-11-14	0.015*		
		2011-11-01	0.010	2012-10-18	0.087	2013-11-18	0.015*	2014-11-19	0.015*	2015-11-20	0.210		
		2011-11-02	0.028	2012-10-24	0.220	2013-11-24	0.015*	2014-11-25	0.100	2015-11-26	0.650		
		2011-11-03	0.034	2012-10-30	0.230	2013-11-30	0.140	2014-12-01	0.320	2015-12-02	0.049		
		2011-11-04	0.094	2012-11-05	0.020	2013-12-06	0.046	2014-12-07	0.230	2015-12-08	0.230		
		2011-11-05	0.012	2012-11-11	0.043	2013-12-12	0.014*	2014-12-13	0.015*	2015-12-14	0.140		
		2011-11-06	0.035	2012-11-17	0.025	2013-12-18	0.710	2014-12-19	0.015*	2015-12-20	0.290		
		2011-11-07	0.016	2012-11-23	0.023	2013-12-24	0.015*	2014-12-25	0.015*	2015-12-26	0.049		
		2011-11-08	0.038	2012-11-29	0.110	2013-12-30	0.050	2014-12-31	0.014*				
		2011-11-09	0.036	2012-12-05	0.019								
		2011-11-10	0.012	2012-12-11	0.014*								
		2011-11-11	0.002	2012-12-17	0.230								
		2011-11-12	0.002	2012-12-23	0.014*								
		2011-11-13	0.002	2012-12-29	0.430								
		2011-11-14	0.004										
		2011-11-15	0.004										
		2011-11-16	0.028										
		2011-11-17	0.003										
		2011-11-18	0.020										
		2011-11-19	0.006										
		2011-11-20	0.001										
		2011-11-21	0.039										
		2011-11-22	0.018										
		2011-11-23	0.006										
		2011-11-24	0.002										
		2011-11-25	0.128										
		2011-11-26	0.131										
		2011-11-27	0.002										
		2011-11-28	0.013										
		2011-11-29	0.003										
		2011-11-30	0.002										
		2011-12-01	0.007										

<b>AQS Qualifier Code</b>	<b>Qualifier Description</b>
*MD	Value less than MDL
AN	Machine Malfunction
AV	Power Failure
BA	Maintenance/Routine Repairs
AG	Sample Time out of Limits
	School Air Toxics Project: <a href="https://www3.epa.gov/air/sat/schools.html">https://www3.epa.gov/air/sat/schools.html</a>