

West Morgan-East Lawrence Water and Sewer Authority 2016 Annual Water Quality Report

To better communicate with you our customer we have prepared this Consumer Confidence Report as authorized by the Environmental Protection Agency through amendments to the Safe Drinking Act. This report is designed to inform you of the good quality water and system services provided to you during 2016. The West Morgan-East Lawrence Water System had no violations of the Alabama Safe Drinking Water Law during 2016. We are committed to ensuring the quality of your water.

General Information about Drinking Water Contaminants

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground it dissolves naturally occurring minerals, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (A) **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or the result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- (D) **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
- (E) **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to insure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

The 1996 Amendments

The 1996 Amendments to the Safe Drinking Water Act created the need for showing consumers detected amounts of contaminants and the plain language definitions on the following page. The amendments recognized that some people might be more vulnerable to contaminants in drinking water than the general population. These are people who are immune-compromised, such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or individuals with other immune system disorders. Particularly the elderly as well as infants can be at risk from infection. Those at risk should seek advice about drinking water from their health care provider. EPA/CDC guidelines on appropriate measures to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Variances and Waivers

In 1998 the West Morgan-East Lawrence Water Authority completed lead and copper monitoring without exceeding any action level. The W.M.E.L. Water Authority will continue to monitor for lead and copper every three years.

Based on a study conducted by ADEM with the approval of the EPA, a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus, monitoring for these contaminants is not required.

Board Members

Barry Stephens, Chairman * Mark Clark, Vice Chairman * Edward Kirby, Secretary
William Fowler, Member * David Hayes, Member

Don Sims, General Manager

Contacts

For information concerning this report or water quality, please contact Jeaniece Slater at (256) 637-2969

For information about our office or daily operations, please contact Carleen White at (256) 355-3746

Board Meeting Time

The regularly scheduled meeting of the West Morgan-East Lawrence Water and Sewer Authority is held on the first Thursday of the month, at 8:00 am in the **Authority Office Board Room**, at 2547 Kirby Bridge Road.

P.O. Box 2254 Decatur, Alabama 35609

(256) 355-3746

Office Hours: 7:30 a.m. – 4:30 p.m. Mon.-Fri.

Plain Language Definitions

MCL - Maximum Contaminant Level - the highest level of a contaminant that is allowed in drinking water
MCLG - Maximum Contaminant Level Goal - the level of a contaminant in drinking water below which there is no known or expected health risk
MRDLG - Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants
MDRL - Maximum Residual Disinfectant Level Goal - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants
AL - Action Level - the concentration of a contaminant which if exceeded triggers treatment or other requirements, which the water system must follow
TT - Treatment Technique - a required process intended to reduce the level of a contaminant in drinking water
Variations and Exemptions - State permission not to meet a MCL or a treatment technique under certain conditions
PPM - parts per million or milligrams per liter - one part per million corresponds to one minute in 2 years or a single penny in \$10,000
PPB - parts per billion or micrograms per liter - one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000
PPT - parts per trillion or nanograms per liter - One part per trillion corresponds to one minute in 2,000,000 years or a single penny in \$10,000,000,000
NR - Not required - laboratory analysis not required due to waiver
ND - Non Detects - laboratory analysis indicates the constituent is not present
NTU - Nephelometric Turbidity Unit - a measurement of the clarity of water, Turbidity in excess of 5 NTU is just noticeable to the average person
pCi/L - Picocuries per Liter - Picocuries per liter is a measure of radioactivity in water
Mrem/yr - Millirems per Year - measure of radiation absorbed by the body

Water Source

Our water source is surface water from the Wheeler Lake Reservoir on the Tennessee River, which is processed at the **Robert Milton Hames Water Treatment Plant**, located at Lock A, near Hillsboro in Lawrence County. We also have connections with Decatur Utilities for an emergency supply if needed.

We have completed our source water protection plan as required by EPA. This plan provides information about potential sources of contamination in our source water area and is available in our office.

Treatment Techniques

Our raw water is treated with dissolved organic removal process, then Chlorine Dioxide, Lime, and Alum in the process of removing contaminants by causing them to stick together and settle out in the settling basins. The water is then filtered through Ultra Membrane Filters and activated carbon filters. Then Sodium Hypochlorite is added for disinfection, and Lime to adjust the pH.

Table of Detected Contaminants

CONTAMINANT	MCLG	MCL	Range	Amount Detected	unit	Likely Source of Contamination
Bacteriological (January 1 – December 31)						
Turbidity	0	TT		.034	NTU	Soil runoff
Inorganic						
Lead and Copper (June-September 2016)						
Copper August 24, 2016	0	AL=1.3	No. Of Sites above action level 0	0	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead August 24, 2016	0	AL=15	No. Of Sites above action level 0	0	ppb	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate As NO3-N	1.45	10	ND - .21	.21	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Organic (2016)						
HAA5's Feb. -Nov. 2016	0	60	0 - 25.5	21.3	ppb	By-product of drinking water chlorination
TTHM Feb. -Nov. 2016	0	80	0 - 69.6	38.8	ppb	By-product of drinking water chlorination
Chlorine	MDRL 4	MDRL 4	.50 - 1.83	1.83	ppm	Water additive used to control microbes
Chlorite		1.0	0 - .91	.91	ppm	Water additive used to control microbes
Chlorine Dioxide		0.8	0 - .18	.18	ppm	Water additive used to control microbes

**Detected Unregulated Contaminants
2016**

CONTAMINANT	Average	Range	Unit Measurement
PFHpA	.001	0 - 0.003	ppb
PFOA	0.010	0 - 0.033	ppb
PFOS	.001	0 - 0.010	ppb
Perfluorohexanesulfonic acid	.0028	0 - 0.007	ppb
Perfluorobutanesulfonic acid	.0057	0 - 0.0057	ppb
Chloroform	21.1	0 - 42.6	ppb
Dibromochloromethane	7.8	0 - 11.6	ppb
Bromodichloromethane	10.9	0 - 17.50	ppb
Bromoform	0.8	0 - 2.27	ppb
Dichloroacetic Acid	9.1	0 - 14	ppb
Trichloroacetic Acid	4.7	0 - 6.50	ppb
Dibromoacetic Acid	1.6	0 - 2.03	ppb
Chloroacetic Acid	1.2	0 - 2.6	ppb
Strontium	0.059	0.049 - 0.070	ppm
Vanadium	0.0004	0.0003 - 0.0004	ppm
Chromium-6	0.00009	0.00007 - 0.00014	ppm
Chlorate	0.270	0.000 - 0.690	ppm
1,4-Dioxane	0.0002	0.000 - 0.0004	ppm
Total Organic Carbons 2016	1.16	0.39 - 1.67	ppm

Detected Secondary Contaminants(January 1-December 31, 2016)

CONTAMINANT	AMOUNT DETECTED	MCL	UNIT MEASUREMENT
Aluminum	0.092	0.2	PPM
Chloride	20.9	250	PPM
Color	4	15	PPM
Iron	0.02	0.3	PPM
Manganese	0.029	0.05	PPM
Odor	<1	3	PPM
Total Dissolved Solids	112	500	

Detected Special Contaminants(January 1-December 31, 2016)

CONTAMINANT	DETECTED	MCL	UNIT MEASUREMENT
Sodium	10.8	N/A	PPM
Calcium	25.8	N/A	PPM
Magnesium	4.58	N/A	PPM
PH	7.3-8.9	N/A	PPM
Total Hardness (as CaCO3)	56 - 100	N/A	PPM
Carbon Dioxide	<1.0	N/A	PPM
Sulfate	21.9	250	PPM
Specific Conductance	240	N/A	Umhos/cm
Langelier Index	-71	NA	PPM
Total Alkalinity	43-73	NA	PPM

Other Contaminants Tested For But Not Detected In Our Drinking Water

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants (January 1 – December 31)						
1. Total Coliform Bacteria	No	ND	Total Coliform Present CP	0	Presence of Coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and <i>E. coli</i>	No	N/D	<i>E. coli</i> Absent ECA	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
Radioactive Contaminants (June 23 2011)						
4. Beta/Photon emitters	No	Waived	mrem/yr	0	4	Decay of natural and man-made deposits
5. Alpha emitters	No	N/D	PCI/L	0	15	Erosion of natural deposits
6. Radium-228, mCi/l	No	N/D	mCi/L	0	5	Erosion of natural deposits
Inorganic Contaminants						
7. Antimony	No	N/D	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic	No	N/D	ppb	N/A	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Asbestos	No	waiver	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
10. Barium	No	N/D	ppm	2	2	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits
11. Beryllium	No	N/D	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium	No	N/D	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium	No	N/D	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
15. Cyanide	No	N/D	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Mercury (inorganic)	No	N/D	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
21. Nitrogen, Nitrite, as NO ₂ -N	No	N/D	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
22. Selenium	No	N/D	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
23. Thallium	No	N/D	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticides and Herbicides						
23. 2,4-D	No	N/D	Ug/L	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	No	N/D	ppb	50	50	Residue of banned herbicide
25. Acrylamide	No	N/A		0	TT	Added to water during sewage/wastewater treatment

Synthetic Organic Contaminants including Pesticides and Herbicides (Cont.)

26. Alachlor	No	N/D	ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	No	N/D	ppb	3	3	Runoff from herbicide used on row crops
28. Benzo(a)pyrene (PAH)	No	N/D	nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
29. Carbofuran	No	N/D	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane	No	N/D	ppb	0	2	Residue of banned termiticide
31. Dalapon	No	N/D	ppb	200	200	Runoff from herbicide used on rights of way
32. Di(2-ethylhexyl) adipate	No	N/D	ppb	400	400	Discharge from chemical factories
33. Di(2-ethylhexyl) phthalate	No	N/D	ppb	0	6	Discharge from rubber and chemical factories
34. Dibromochloropropane	No	N/D	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb	No	N/D	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat	No	N/D	ppb	20	20	Runoff from herbicide use
37. Dioxin [2,3,7,8-TCDD]	No	N/D	picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
38. Endothal	No	N/D	ppb	100	100	Runoff from herbicide use
39. Endrin	No	N/D	ppb	2	2	Residue of banned insecticide
40. Epichlorohydrin	No	N/A		0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
41. Ethylene dibromide	No	N/D	nanograms/l	0	50	Discharge from petroleum refineries
42. Glyphosate	No	N/D	ppb	700	700	Runoff from herbicide use
43. Heptachlor	No	N/D	nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide	No	N/D	nanograms/l	0	200	Breakdown of heptachlor
45. Hexachlorobenzene	No	N/D	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene	No	N/D	ppb	50	50	Discharge from chemical factories
47. Lindane	No	N/D	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor	No	N/D	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]	No	N/D	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs	No	N/D	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol	No	N/D	ppb	0	1	Discharge from wood preserving factories
52. Picloram	No	N/D	ppb	500	500	Herbicide runoff
53. Simazine	No	N/D	ppb	4	4	Herbicide runoff
54. Toxaphene	No	N/D	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle

Volatile Organic Contaminants						
55. Benzene	No	N/D	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride	No	N/D	ppb	0	5	Discharge from chemical plants and other industrial activities
57. Chlorobenzene	No	N/D	ppb	100	100	Discharge from chemical and agricultural chemical factories
58. 1,2-Dichlorobenzene	No	N/D	ppb	600	600	Discharge from industrial chemical factories
59. 1,4-Dichlorobenzene	No	N/D	ppb	75	75	Discharge from industrial chemical factories
60. 1,2 - Dichloroethane	No	N/D	ppb	0	5	Discharge from industrial chemical factories
61. 1,1 - Dichloroethlene	No	N/D	ppb	7	7	Discharge from industrial chemical factories
62. cis-1,2-ichloroethlene	No	N/D	ppb	70	70	Discharge from industrial chemical factories
63. trans - 1,2 - Dichloroethlene	No	N/D	ppb	100	100	Discharge from industrial chemical factories
64. Dichloromethane	No	N/D	ppb	0	5	Discharge from pharmaceutical and chemical factories
65. 1,2-Dichloropropane	No	N/D	ppb	0	5	Discharge from industrial chemical factories
66. Ethylbenzene	No	N/D	ppb	700	700	Discharge from petroleum refineries
67. Styrene	No	N/D	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethlene	No	N/D	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4 - Trichlorobenzene	No	N/D	ppb	70	70	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane	No	N/D	ppb	200	200	Discharge from metal degreasing sites and other factories
71. 1,1,2 - Trichloroethane	No	N/D	ppb	3	5	Discharge from industrial chemical factories
72. Trichloroethlene	No	N/D	ppb	0	5	Discharge from metal degreasing sites and other factories
74. Toluene	No	N/D	ppm	1	1	Discharge from petroleum factories
75. Vinyl Chloride	No	N/D	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
76. Xylenes	No	N/D	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories

Unregulated Contaminants Table

CONTAMINANT	Average	Range	CONTAMINANT	Average	Range
1,1 - Dichloropropene	ND	0.000 - 0.000	Chloromethane	ND	0.000 - 0.000
1,1,1,2-Tetrachloroethane	ND	0.000 - 0.000	Chloroethane	ND	0.000 - 0.000
1,1,2,2-Tetrachloroethane	ND	0.000 - 0.000	Dibromomethane	ND	0.000 - 0.000
1,1-Dichloroethane	ND	0.000 - 0.000	Dicamba	ND	0.000 - 0.000
1,2,3 - Trichlorobenzene	ND	0.000 - 0.000	Dichlorodifluoromethane	ND	0.000 - 0.000
1,2,3 - Trichloropropane	ND	0.000 - 0.000	Dieldrin	ND	0.000 - 0.000
1,2,4 - Trimethylbenzene	ND	0.000 - 0.000	Hexachlorobutadiene	ND	0.000 - 0.000
1,3 - Dichloropropane	ND	0.000 - 0.000	Isopropylbenzene	ND	0.000 - 0.000
1,3 - Dichloropropene	ND	0.000 - 0.000	M-Dichlorobenzene	ND	0.000 - 0.000
1,3,5 - Trimethylbenzene	ND	0.000 - 0.000	Naphthalene	ND	0.000 - 0.000
2,2 - Dichloropropane	ND	0.000 - 0.000	n-Propylbenzene	ND	0.000 - 0.000
Bromobenzene	ND	0.000 - 0.000	n - Butylbenzene	ND	0.000 - 0.000
Bromomethane	ND	0.000 - 0.000	2-Chlorotoluene	ND	0.000 - 0.000
bromochloromethane	ND	0.000-0.000	chlorodifluoromethane	ND	0.000 - 0.000
chlormethane	ND	0.000-0.000			

Unregulated Contaminants Table (cont.)							
4-Chlorotoluene	ND	0.000 – 0.000	Bromochloromethane	ND	0.000	-	0.000
Sec - Butylbenzene	ND	0.000 – 0.000	Chlorodifluoromethane	ND	0.000	-	0.000
Tert - Butylbenzene	ND	0.000 – 0.000	Perfluorobutanoic acid	ND	0.000	-	0.000
Trichlorfluoromethane	ND	0.000 – 0.000	Perfluorodecane sulfonate	ND	0.000	-	0.000
Chromium (total)	ND	0.000 – 0.000	Perfluorodecanoic acid	ND	0.000	-	0.000
Cobalt	ND	0.000 – 0.000	Perfluorododecanoic acid	ND	0.000	-	0.000
Molybdenum	ND	0.000 – 0.000	Perfluorononanoic acid	ND	0.000	-	0.000
1,3Butadiene	ND	0.000 – 0.000	Perfluoropentanoic acid	ND	0.000	-	0.000
Perfluorotridecanoic Acid	ND	0.000 – 0.000	Perfluorotetradecanoic acid	ND	0.000	-	0.000
Perfluoroundecanoic acid	ND	0.000 – 0.000	Perfluorotetradecanoic acid	ND	0.000	-	0.000

**Secondary Contaminants
(January 1-December 31)**

CONTAMINANT	AMOUNT DETECTED	MCL	UNIT MEASUREMENT
Fluoride	ND	2	PPM
Copper	ND	1	PPM
Carbon Dioxide	ND	N/A	PPM
Silver	ND	0.1	PPM
MBAS	ND	0.5	PPM
Zinc	ND	5	PPM
Nickel	ND	0.1	PPM

Non-Compliance	Microbiological			Long Term 2 Enhanced Surface Water Treatment Rule			Likely Source of Contamination
	MCLG	MCL	Range	Amount Detected	unit		
Cryptosporidium	0	TT	0 3	3	ocysts/L	Wildlife and / or human activity	
Giardia	0	TT	0 5	5	Cysts/L	Wildlife and / or human activity	

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Total Coliform: The total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found special follow-up test are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public by newspaper, television or radio.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. West Morgan-East Lawrence Water and Sewer is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all our customers. These improvements are sometimes reflected as structure adjustments. Thank you for understanding.

We at the West Morgan – East Lawrence Water and Sewer Authority work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

If you have any questions please call our office at (256) 355-3746.

**Jeaniece Slater
Plant Operations Manager**