
2017 Annual

Water Quality Report



Message from Ray Hardin, General Manager

Decatur Utilities is proud to present you this year's Annual Water Quality Report. This report is designed to inform you about the source and quality of your drinking water. We have prepared this report using the data from water quality testing conducted for the water system from January through December 2016.

At Decatur Utilities, we deliver more than high quality water. We deliver a key resource for public health, fire protection, industry, the economy and the overall quality of life we enjoy in Northern Alabama. We also deliver great value. Our current residential rates continue to be one of the lowest in the state. We take great pride in ***“providing safe, reliable utility service at the lowest possible rates while meeting the needs of customers and employees”***.

If you have any questions about our water quality or what this report means, please contact our Water Treatment Plant at (256) 552-1480.

To obtain additional copies of this report please call Customer Service at 256-552-1440 or visit us online at:

www.decaturutilities.com

Respectfully,

A handwritten signature in black ink that reads 'Ray Hardin'.

Ray Hardin, General Manager

Source Water Information – About Your Water Supply

Decatur Utilities serves approximately 25,000 customers in all portions of the city of Decatur and routinely provides water to the city of Hartselle, Northeast Morgan County Water District, Limestone County and the town of Trinity. West Morgan East Lawrence Water District has the capability to buy water from Decatur Utilities upon request.

The Water Treatment Plant is located at 1900 Market St. NE. We obtain 100% of our water from the Wheeler Reservoir on the Tennessee River.

Our goal is to protect our water supply from any future contamination. The Alabama Department of Environmental Management (ADEM) and the Tennessee Valley Authority prepared a Source Water Assessment Program (SWAP) report on our water supply in 2000. The SWAP report assesses the susceptibility of our untreated water sources to potential contamination. Our water system has been rated as having a moderate risk from contamination.

To learn more about Decatur Utilities and your water supply, we encourage you to attend any of our regularly scheduled Board Meetings. Municipal Utilities Board Meetings are normally held on the third Wednesday of each month at 8:00 am in our main office on 1002 Central Parkway SW.

Board Members are:

Chairman - Neal A. Holland, Jr., Term: July 1, 2014 - June 30, 2023

Secretary - Richard Grace, PE, Term: July 1, 2008 - June 30, 2017

Member – James R. Thompson, III, Term: July 1, 2011 – June 30, 2020

About the Treatment Process

The Water Treatment Plant has the capacity to treat 68 million gallons per day (MGD) of raw water. Chemical treatment consists of using sodium permanganate for oxidation, fluoride to promote dental health, polyaluminum chloride for coagulation, lime for pH adjustment, poly-orthophosphate for stabilization, and chlorine for disinfection. There are four in-ground water storage tanks and six elevated storage tanks which provide a combined capacity of 23,967,000 gallons of water.

Substances Expected to be in Drinking Water

Sources of drinking water (both tap water 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, and, 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 the 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 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 byproducts of industrial processes and petroleum production, can also come from gas stations, urban storm water runoff, and septic systems.
- e) *Radioactive Contamination*, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that the water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 water poses a health risk. More

information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or by accessing their website at water.epa.gov/drink.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infections by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Important Information about Lead

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 private service lines and home plumbing. DU 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 two minutes before using the 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 (800-426-4791) or at <http://www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water>

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water quality information with water users at their location.

How to Read the Tables

Decatur Utilities conducts extensive monitoring to ensure that your water meets all water quality standards. The results of our monitoring are included in the following tables. While most monitoring was conducted in 2016, certain substances are monitored less than once per year because the levels do not change frequently. When interpreting the "Table of Detected Contaminants", begin with **Substance** and read across. **MCL** is the Maximum Contaminant (substance) Level allowed. **MCLG** is the Maximum Contaminant Level Goal for that substance (this value may be lower than what is allowed). **Amount Detected** represents the measured amount (lower is better). **Range** is the highest and lowest amounts measured. **Number of Analyses** is how many times this substance was tested in the calendar year. A "Yes" under **Compliance Achieved** means that the ADEM and EPA requirements were met. **Typical Source** tells where the substance usually originates. For additional assistance interpreting these tables, reference the "Table Definitions and Abbreviations" section below.

Waiver Information

The Environmental Protection Agency (EPA) Safe Drinking Water Act (SDWA) and the State of Alabama Department of Environmental Management (ADEM) regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals (VOCs), lead and copper, and synthetic organic chemicals (SOCs). Decatur Utilities has been granted a waiver to reduce sampling for lead and copper and SOCs to once every three years. This is based on prior sampling events not detecting these contaminants. Based on a study conducted by ADEM with EPA approval, a statewide waiver for monitoring of asbestos and dioxin was issued. Therefore, these contaminants were not sampled.

Table Definitions and Abbreviations

- **AL (Action Level):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- **HRAA:** Highest Running Annual Average
- **MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.
- **MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **MFL (million fibers per liter):** The measure of the presence of asbestos fibers that is longer than 10 micrometers.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **mrem/year (Millirems per year):** A measure of radiation absorbed by the body.
- **NA:** Not applicable.
- **ND:** None detected.
- **NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.
- **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter, explained in terms of money as one penny in \$10,000.
- **ug/L (micrograms per liter):** Micrograms per liter is equal to parts per billion (ppb) since one liter of water is equal in weight to one billion micrograms.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per

liter, explained in terms of money as one penny in \$10,000,000.

- **ppt (parts per trillion):** One part substance per trillion parts water, or nanograms per liter, explained in terms of money as one penny in \$10,000,000,000.
- **ppq (parts per quadrillion):** One part substance per quadrillion parts water, or pictogram per liter, explained in terms of money as one penny in \$10,000,000,000,000.
- **Primary Contaminant:** Primary standards are legally enforceable standards that apply to public water systems. These standards protect drinking water quality by limiting the levels of specific contaminants that can adversely affect public health and which are known or anticipated to occur in public water supplies.
- **RAA: (Running Annual Average):** Average based on the past 12 months of testing.
- **Secondary Contaminant:** Secondary standards are non-mandatory guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor. These contaminants are not considered to present a risk to human health.
- **SU:** Standard units
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water

Contaminant	MCL	Amount Detected
Bacteriological		
Total Coliform Bacteria	<5%	ND
Turbidity	TT	0.099
Fecal Coliform and E.coli	0	ND
Radiological		
Alpha emitters	15 pCi/L	ND
Beta/photon emitters	4 mrem/yr	waived
Radium-228		ND
Uranium	30 ppb	waived

Contaminant	MCL	Amount Detected
Inorganic Chemicals		
Antimony	6 ppb	ND
Arsenic	10 ppb	ND
Asbestos	7 MFL	waived
Barium	2,000 ppb	ND
Beryllium	4 ppb	ND
Bromate	10 ppb	ND
Cadmium	5 ppb	ND
Chloramines	4 ppm	ND
Chlorine (RAA)	4 ppm	2.67
Chromium	100 ppb	ND
Copper	AL 1.3 ppm	0.387
Cyanide	200 ppb	ND
Fluoride	4 ppm	1.04
Lead	AL 15 ppb	ND
Mercury	2 ppb	ND
Nitrate	10 ppm	0.58
Nitrite	1 ppm	ND
Selenium	50 ppb	ND
Thallium	2 ppb	ND
Organic Chemicals		
2,4-D	70 ppb	ND
2,4,5-TP (Silvex)	50 ppb	ND
Acrylamide	TT	NA
Alachlor	2 ppb	ND
Atrazine	3 ppb	ND
Benzo(a)pyrene [PAHs]	200 ppt	ND

Contaminant	MCL	Amount Detected
Carbofuran	40 ppb	ND
Chlordane	2 ppb	ND
Dalapon	200 ppb	ND
Di(2-ethylhexyl)adipate	400 ppb	ND
Di(2-ethylhexyl)phthalates	6000 ppt	ND
Dibromochloropropane	200 ppt	ND
Dinoseb	7 ppb	ND
Diquat	20 ppb	ND
Dioxin [2,3,7,8-TCDD]	30 ppq	waived
Chloramines	4 ppm	ND
Chlorite	1 ppm	ND
Endothall	100 ppb	ND
Endrin	2 ppb	ND
Epichlorohydrin	TT	NA
Glyphosate	700 ppb	ND
Heptachlor	400 ppt	ND
Heptachlor epoxide	200 ppt	ND
Hexachlorobenzene	1 ppb	ND
Lindane – Gamma BHC	200 ppt	ND
Methoxychlor	40 ppb	ND
Oxamyl [Vydate]	200 ppb	ND
PCBs	500 ppt	ND
Pentachlorophenol	1 ppb	ND
Picloram	500 ppb	ND
Simazine	4 ppb	ND
Toxaphene	3 ppb	ND
Benzene	5 ppb	ND
Carbon Tetrachloride	5 ppb	ND
Chlorobenzene (VOC – Mono, Di or Tri)	100 ppb	ND

Contaminant	MCL	Amount Detected
Dibromochloropropane	200 ppt	ND
o-Dichlorobenzene	600 ppb	ND
p-Dichlorobenzene	75 ppb	ND
1,2-Dichloroethane	5 ppb	ND
1,1-Dichloroethylene	7 ppb	ND
cis-1,2-Dichloroethylene	70 ppb	ND
trans-1,2-Dichloroethylene	100 ppb	ND
Dichloromethane	5 ppb	ND
1,2-Dichloropropane	5 ppb	ND
Ethylbenzene	700 ppb	ND
Ethylene Dibromide	50 ppt	ND
Styrene	100 ppb	ND
Tetrachloroethylene	5 ppb	ND
1,2,4-Trichlorobenzene	70 ppb	ND

Contaminant	MCL	Amount Detected
1,1,1-Trichloroethane	200 ppb	ND
1,1,2-Trichloroethane	5 ppb	ND
Trichloroethylene	5 ppb	ND
TTHM (System-wide Average) HRAA	80 ppb	24.4
HAA5 (System-wide Average) HRAA	60 ppb	21.2
Toluene	1 ppb	ND
Vinyl Chloride	2 ppb	ND
Xylenes	10 ppb	ND
TOC	TT	1.4
Chlorine Dioxide	800 ppb	ND
Bromate	10 ppt	ND
Bromodichloromethane	NA	3.65
Chloroform	NA	5.34
Dibromochloromethane	NA	1.33

TABLE OF DETECTED UNREGULATED CONTAMINANTS

Contaminant	Amount Detected (ug/L)	Range (ug/L)
UNREGULATED CONTAMINATES —EPA uses the Unregulated Contaminant Monitoring (UCM) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Testing for unregulated contaminants was not required in 2016. The data below is from 2014 testing.		
Entry Point Data (Water Treatment Plant)		
1,4-dioxane	0.14	0.1-0.2
Strontium	66	57-74
Chromium-6	0.06	0.05-0.07
Chlorate	83	27-130
Vanadium	0.4	0-0.7
Distribution System Data		
Strontium	68	58-74
Chromium-6	0.10	0.08-0.12
Chlorate	85	30-130
Vanadium	0.4	0-0.8

TABLE OF DETECTED CONTAMINANTS

Substance (units)	Year Sampled	MCL	MCLG	Amount Detected	Range	Number of Analyses	Compliance Achieved	Typical Source
MICROBIOLOGICAL CONTAMINANTS – Directly related to the safety of drinking water.								
Filtered Water Turbidity (NTU) ¹	2016	TT	NA	0.099	0.022 – 0.099	²	YES	Soil runoff
Total Organic Carbon (ppm)	2016	TT	NA	1.4 (RAA)	1.0 - 1.7	12	YES	Soil runoff
DISINFECTANTS & DISINFECTION BYPRODUCTS - On February 15, 2006, EPA instituted a new rule for water systems called the Stage 2 Disinfectant and Disinfection Byproducts Rule that deals with trihalomethanes (TTHM) and haloacetic acids (HAA5). The rule changed some existing sample sites and added additional sites as well as changing the ways that averages will be calculated. DU has been actively sampling the distribution system to verify that we are 100% in compliance with the new rules that were implemented on January 1, 2012.								
Chlorine (ppm)	2016	4.0	NA	2.67 (RAA)	2.06 – 3.07	³	YES	Added during the treatment process as a disinfectant
Total Trihalomethanes (ppb)	2016	80	NA	24.4 (HRAA)	6.5 – 39.0	32	YES	Disinfection byproduct
Haloacetic Acid (ppb)	2016	60	NA	21.2 (HRAA)	12.3 – 26.8	32	YES	Disinfection byproduct
2016 Sites Total Trihalomethanes (ppb)	2016	NA	NA	21.4 ⁴	5.1 – 50.0	80	NA	Disinfection byproduct
2016 Sites Total Haloacetic Acid (ppb)	2016	NA	NA	18.1 ⁵	9.2 – 30.5	80	NA	Disinfection byproduct
STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS (Inorganic Chemicals). We detected the following substances in this category.								
Fluoride (mg/L)	2016	4	4	1.04	0.0 - 1.04	365	YES	Water additive which promotes strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories
Nitrate (mg/L)	2016	10	10	0.58	0.58	1	YES	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits

¹ Turbidity is a measurement of the cloudiness of the water. DU monitors this parameter because it is a good indicator of the effectiveness of the filtration system.

² DU has 40 filters where finished water turbidity is measured continuously and recorded every 15 minutes.

³ Chlorine in finished water is measured continuously. Chlorine Residuals in the distribution system are measured approximately 20 times per week at various locations.

⁴ This is an average of all the 2016 sites TTHM sample results.

⁵ This is an average of all the 2016 sites HAA5 sample results.

TABLE OF DETECTED CONTAMINANTS

Substance (units)	Year Sampled	MCL	MCLG	Amount Detected	Range	Number of Analyses	Compliance Achieved	Typical Source
STANDARD LIST OF SECONDARY DRINKING WATER CONTAMINANTS⁶. We detected the following substances in this category.								
Alkalinity (mg/L)	2016	NA	NA	60	35 -69	365	YES	Naturally occurring
Aluminum (mg/L)	2016	0.2	NA	<0.050	<0.050	1	YES	Natural mineral, byproduct of treatment process
Calcium (mg/L)	2016	NA	NA	24.2	24.2	1	YES	Natural mineral
Carbon Dioxide (mg/L)	2016	NA	NA	<1.0	<1.0	1	YES	Naturally occurring
Chloride (mg/L)	2016	250	NA	14.3	14.3	1	YES	Natural mineral, salt
Color	2016	15	NA	3.0	0 – 3.0	365	YES	Naturally occurring
Hardness	2016	NA	NA	80.5	80.5	1	YES	Natural mineral
Iron (mg/L)	2016	0.3	NA	0.05	0 – 0.05	365	YES	Natural mineral
Magnesium (mg/L)	2016	NA	NA	4.86	4.86	1	YES	Natural mineral
pH (su)	2016	NA	NA	7.20	6.80 – 7.30	⁷	YES	Treatment process
Sodium	2016	NA	NA	4.66	4.66	1	YES	Natural mineral, salt
Specific Conductance	2016	NA	NA	196	196	1	YES	Naturally occurring
Sulfate (mg/L)	2016	500	NA	9.94	9.94	1	YES	Natural mineral
Total Dissolved Solids	2016	500	NA	148	148	1	YES	Natural mineral
Foaming Agents (MBAS)	2016	0.5	NA	<0.05	<0.05	1	YES	Surfactants, detergents

⁶ Secondary standards are non-mandatory guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor. These contaminants are not considered to present a risk to human health.

⁷ Finished water pH is monitored continuously.

Long Term 2 Enhanced Surface Water Treatment Rule

April 2015 – December 2016

Substance (units)	Year Sampled	MCL	MCLG	Amount Detected	Range	Number of Analyses	Compliance Achieved	Typical Source
Cryptosporidium (Organisms/L) ¹	2016	TT	0	ND	ND	21	YES	Wildlife and / or human activity
Giardia (Organisms/L) ²	2016	TT	0	0.32	0.09-0.32	21	YES	Wildlife and / or human activity

¹ Decatur Utilities tests your untreated, raw source water (Tennessee River) for Cryptosporidium. **Cryptosporidia** are microscopic organisms found in surface water throughout the United States. These pathogens can enter the water from animal or human waste and are common in surface water because of vulnerability to sewage discharges and runoff. Ingesting cryptosporidium can cause gastrointestinal illness with potential increased risk of infection for immunocompromised persons such as individuals with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly, and infants. For people who may be immuno-compromised, a guidance document developed jointly by the Environmental Protection Agency and the Center for Disease Control is available online at www.epa.gov/safewater/cryptocrypto.html or from the Safe Drinking Water Hotline at 800-426-4791. Cryptosporidium was *not* detected in your source water as shown in the table above.

² Decatur Utilities tests your untreated, raw source water (Tennessee River) for Giardia. **Giardia** (je-ar'-de-ah) are protozoan parasites which occur in a trophozoite and an oval-shaped cyst form. These pathogens can enter the water from animal or human waste and are common in surface water because of vulnerability to sewage discharges and runoff. Giardia is distributed worldwide in lakes, ponds, rivers, and streams. All surface waters probably contain Giardia. Giardia is frequently spread directly from person to person, especially among young children in day-care centers, nurseries, or institutions and among persons living in areas with poor sanitation and hygiene. **How effective is water treatment?** When operated under appropriate conditions, commonly used water treatment filtration technologies can effectively remove *Giardia* cysts from water. The highest removal by granular filters is achieved when coagulation is optimized. Decatur Utilities operates an optimized water treatment facility. For more information about Giardia, visit <https://www.epa.gov/sites/production/files/2015-10/documents/giardia-factsheet.pdf>.