2017 ANNUAL WATER QUALITY REPORT

Testing Performed January - December 2016

HUNTSVILLE UTILITIES

ELECTRICITY • NATURAL GAS • WATER

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Excellence Awards

Huntsville Utilities has been recognized numerous times over the past two decades for outstanding service, receiving several excellence awards over the years. The most recent awards are:

- AWPCA best operated plant for the South Parkway Plant
- AWPCA best operated plant for the Lincoln-Dallas Plant (2nd consecutive year)
- AWPCA best operated distribution system (2nd consecutive year)
- AWPCA Award of Excellence for the Southwest Plant
- ADEM 2016 plant optimization award for the South Parkway Plant (5th consecutive year) and the Southwest Plant (9th consecutive year)

Office Hours: Monday - Friday, 8 a.m. to 5 p.m.
www.hsvutil.org

Huntsville Utilities Water Department is pleased to provide you with this year's Annual Water Quality Report. This publication is our commitment to keep you, our customer, informed on issues related to water service. This report provides information concerning the source of your drinking water, treatment techniques, test results, as well as an explanation of the numbers and terms used in it.

Huntsville Utilities Water Department works diligently to provide high quality water at the lowest possible price. We are committed to providing a quality drinking water that meets or exceeds all state and federal drinking water standards.

WATER SOURCES

Huntsville Utilities supplies drinking water to approximately 90,000 customers from both surface water and groundwater sources. Surface water from the Tennessee River is processed through two conventional surface water treatment plants, the South Parkway facility and Southwest Treatment Plant. Groundwater is supplied from the Lincoln and Dallas Well Treatment Plant, the Hampton Cove Well Treatment Plant, and Williams Well. All the groundwater wells produce from limestone aquifers.

The 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 radioactive material, and it can pick up substances resulting from the presence of animals or from human activity.

SOURCE WATER ASSESSMENT

In compliance with the Alabama Department of Environmental Management (ADEM), Huntsville Utilities Water Department has developed a Source Water Assessment plan that will assist in protecting our water sources. This plan provides additional information such as potential sources of contamination. It includes a susceptibility analysis, which classifies potential contaminants as high, moderate, or non-susceptible to contaminating the water source. In 2015 we updated the Source Water Assessment. These reports are available for review in our office during normal business hours by appointment.

Please help us make these efforts worthwhile by doing what you can to protect our source water. For example, carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints and waste oil. Please inform the Water Department if you observe actions that might compromise the quality of our drinking water.

LEAD AND DRINKING WATER

As required by federal and state agencies, we also have an outside laboratory monitor our distribution system for lead. Levels of lead in our system have always been well below the minimum standard. Even though we do not have a problem with lead, the following information about lead is required to be in this report: 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. Huntsville Utilities 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 on the EPA's website (www.epa.gov/safewater/lead).

QUESTIONS?

Public interest and participation in decisions affecting drinking water or other utility issues is encouraged. If you have any questions about this report or concerning your water utility, please contact Jim Reynolds in the Water Quality Lab at (256) 650-6374 or by email at waterlab@hsvutil.org.

If you would like to attend one of our regularly scheduled board meetings, you may check our website (www.hsvutil.org) for the meeting schedule. They are usually held on the second Tuesday of every month at 8:00 a.m. at Huntsville Utilities, 112 Spragins Street. Board members include Mr. Stanley Statum, Dr. Dorothy W. Huston, and Dr. James S. Wall, Jr.

More information about contaminants in drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Definitions

Action Level - the concentration of a contaminant that, if exceeded, triggers some follow-up action
ADEM - Alabama Department of Environmental Management - Alabama's environmental regulatory agency.
AWPCA - Alabama Water Pollution Control Association
Coliform Absent (ca) - Laboratory analysis indicates coliform bacteria not present.
Disinfection byproducts are formed when disinfectants used in water treatment plants react with natural organic matter present in the source water and produce byproducts.
Distribution System Evaluation (DSE) - a one-year study conducted by water systems to monitor disinfection byproducts.
EPA - Environmental Protection Agency - the nation's environmental regulatory agency.
Maximum Contaminant Level (MCL) - highest level of contaminant allowed in drinking water.
Maximum Contaminant Level Goal (MCLG) - the level of a contaminant in drinking water below which there is no known or expected risk to health.
Millirems per year (mrem/yr) - measure of radiation absorbed by the body.
Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water.
Not Applicable (NA) - Not applicable to water system because not required.
Non-Detects (ND) - laboratory analysis indicates that the contaminant is not present at a detectable level.
Not Required (NR) - laboratory analysis not required due to waiver.
Parts per billion (ppb) or Micrograms per liter (µg/l) - corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Parts per million (ppm) or Milligrams per liter (mg/l) - corresponds to one minute in two years or a single penny in $10,000.
Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - corresponds to one minute in 2,000,000,000 years, or a single penny in $10,000,000,000,000.
Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
Picocuries per liter (pCi/L) - a measure of the radioactivity in water.
Running annual average (RAA) - the required method of calculating compliance on disinfection byproducts, TTHM and HAA5.
Threshold Odor Number (TON) - the greatest dilution of a sample with odor-free water that yields a barely detectable odor.
Treatment Technique (TT) - a required process to reduce a contaminant.
Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

DRINKING WATER INFO

All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. MCL's, defined in a List of Definitions in this report, 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.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or from urban storm water run-off, wastewater discharges, oil/gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water run-off, and residential uses.

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.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 infants can be particularly at risk from infections. People at risk should seek advice about drinking water from their health care providers.

Huntsville Utilities also tests your source water for pathogens, such as *Cryptosporidium* and *Giardia*. These pathogens can enter the water from animal or human waste. 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/crypto.html or from the Safe Drinking Water Hotline at (800) 426-4791. This language does not indicate the presence of *cryptosporidium* in our drinking water.

Huntsville Utilities also tests your source water for unregulated contaminants not listed in the tables contained in this report. Please refer to our website at www.hsvutil.org for results on pharmaceuticals, personal care products, endocrine disruptors, and perchlorate.

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 was not required.

Water systems using surface sources or groundwater under the influence of surface water must provide a filtration process to produce filtered water turbidity no greater than 0.3 turbidity units (NTU) in 95% of filtered water samples analyzed each month and at no time exceeds 1.0 NTU. Groundwater sources must produce treated water which at no time exceeds 5.0 NTU.

MONITORING SCHEDULE

The EPA or ADEM requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. This report contains results from the most recent monitoring which was performed in accordance with the regulatory schedule.

Constituents Monitored	Date Monitored
Inorganic Contaminants	2016
Lead/Copper	2015
Microbiological Contaminants	current
Nitrates	2016
Radioactive Contaminants	2011
Synthetic Organic Contaminants	2014
Volatile Organic Contaminants	2016
Disinfection By-products	2016
Cryptosporidium	2016
Unregulated Contaminant Monitoring Rule 3 (UCMR3)	2015
Distribution System Evaluation (DSE) Contaminants	2016

UCMR3

The EPA's Unregulated Contaminant Monitoring Rule 3 (UCMR3) required some water systems to monitor for 30 unregulated contaminants during 2013-2015. Our system was scheduled to monitor during 2014 and 2015. The table below shows results of the monitoring.

Unregulated Contaminant Monitoring Rule 3 (UCMR3) Contaminants 2014-2015				
	Violation	Level	Unit	Likely Source
Contaminants	Y/N	Detected	Msmt	of Contamination
Chromium	NO	ND-0.90	ppb	Naturally occurring or as a result of industrial discharge
Molybdenum	NO	ND-1.10	ppb	Naturally occurring or as a result of runoff from mining or industrial discharge
Strontium	NO	62.0-150	ppb	Naturally occurring or as a result of discharge
Vanadium	NO	ND-0.70	ppb	Naturally occurring or as a result of runoff from mining or industrial discharge
Chromium, Hexavalent	NO	0.03-0.71	ppb	Naturally occurring or as a result of industrial discharge
Chlorate	NO	50.0-380	ppb	Naturally occurring or from water treatment
1,4-Dioxane	NO	ND-0.21	ppb	Industrial discharge; leachate from landfills

As you can see by the Table of Detected Drinking Water Contaminants below, our system had no violations. We have learned through our monitoring and testing that some constituents have been detected. We are pleased to report that our drinking water meets federal and state requirements.

TABLE OF DETECTED DRINKING WATER CONTAMINANTS						
Contaminants	Violation Y/N	Level Detected	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Chlorine	NO	2.3-3.9	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
Total Organic Carbon	NO	1.03-1.73	ppm	n/a	TT	Soil runoff
Turbidity (filtered)	NO	Highest 0.10	NTU	n/a	TT	Soil runoff
Alpha emitters	NO	1.2 ± 0.8	PCi/l	0	15	Erosion of natural deposits
Copper	NO	0.290 * 0 > AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from preservatives
Fluoride - WTP	NO	0.63-0.71	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from factories
Lead	NO	ND ** 1 > AL	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	NO	0.62-2.01	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHM [Total trihalomethanes]	NO	RAA 30.4 ND-53.0	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	RAA 24.2 ND-61.0	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform	NO	0.62-17.6	ppb	n/a	n/a	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Bromodichloromethane	NO	ND-7.54	ppb	n/a	n/a	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Chlorodibromomethane	NO	ND-2.14	ppb	n/a	n/a	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Secondary Contaminants						
Chloride	NO	7.85-8.08	ppm	n/a	250	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Hardness, as $CaCO_3$	NO	60.7-63.2	ppm	n/a	n/a	Naturally occurring in the environment or from industrial discharge or agricultural runoff
pH	NO	7.48-7.56	S.U.	n/a	n/a	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Sodium	NO	11.5-13.6	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	29.1-29.8	ppm	n/a	250	Naturally occurring in the environment or from industrial discharge or agricultural runoff
Total Dissolved Solids	NO	92.0-104	ppm	n/a	500	Naturally occurring in the environment or from industrial discharge or agricultural runoff
TABLE OF DETECTED DSE CONTAMINANTS						
TTHM [Total trihalomethanes]	NO	ND-44.0	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	ND-55.4	ppb	0	60	By-product of drinking water chlorination

* Figure shown is 90th percentile and # of sites above action level (1.3 ppm) = 0

** Figure shown is 90th percentile and # of sites above Action Level (15.0 ppb) =1

Huntsville Utilities has chosen to provide our water customers with a table of all contaminants for which the Environmental Protection Agency and the Alabama Department of Environmental Management require testing. These contaminants were *not detected* in your drinking water unless they are also listed in the Table of Detected Drinking Water Contaminants elsewhere in this report.

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	**MCL**	**Unit of Msmt**	**Contaminant**	**MCL**	**Unit of Msmt**
Bacteriological Contaminants			trans-1,2-Dichloroethylene	100	ppb
Total Coliform Bacteria	<5%	present or absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present or absent	1,2-Dichloropropane	5	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)adipate	400	ppb
Cryptosporidium	TT	Calculated organisms/liter	Di (2-ethylhexyl)phthalate	6	ppb
Radiological Contaminants			Dinoseb	7	ppb
Beta/photon emitters	4	mrem/yr	Dioxin [2,3,7,8-TCDD]	30	ppq
Alpha emitters	15	pCi/l	Diquat	20	ppb
Combined radium	5	pCi/l	Endothall	100	ppb
Uranium	30	pCi/l	Endrin	2	ppb
Inorganic Chemicals			Epichlorohydrin	TT	TT
Antimony	6	ppb	Ethylbenzene	700	ppb
Arsenic	10	ppb	Ethylene dibromide	50	ppt
Asbestos	7	MFL	Glyphosate	700	ppb
Barium	2	ppm	Heptachlor	400	ppt
Beryllium	4	ppb	Heptachlor epoxide	200	ppt
Cadmium	5	ppb	Hexachlorobenzene	1	ppb
Chromium	100	ppb	Hexachlorocyclopentadiene	50	ppb
Copper	AL=1.3	ppm	Lindane	200	ppt
Cyanide	200	ppb	Methoxychlor	40	ppb
Fluoride	4	ppm	Oxamyl [Vydate]	200	ppb
Lead	AL=15	ppb	Polychlorinated biphenyls (PCBs)	0.5	ppb
Mercury	2	ppb	Pentachlorophenol	1	ppb
Nitrate	10	ppm	Picloram	500	ppb
Nitrite	1	ppm	Simazine	4	ppb
Selenium	.05	ppm	Styrene	100	ppb
Thallium	.002	ppm	Tetrachloroethylene	5	ppb
Organic Contaminants			Toluene	1	ppm
2,4-D	70	ppb	Toxaphene	3	ppb
Acrylamide	TT	TT	2,4,5-TP(Silvex)	50	ppb
Alachlor	2	ppb	1,2,4-Trichlorobenzene	.07	ppm
Benzene	5	ppb	1,1,1-Trichloroethane	200	ppb
Benzo(a)pyrene [PAHs]	200	ppt	1,1,2-Trichloroethane	5	ppb
Carbofuran	40	ppb	Trichloroethylene	5	ppb
Carbon tetrachloride	5	ppb	Vinyl Chloride	2	ppb
Chlordane	2	ppb	Xylenes	10	ppm
Chlorobenzene	100	ppb	Disinfectants & Disinfection Byproducts		
Dalapon	200	ppb	Chlorine	4	ppm
Dibromochloropropane	200	ppt	Chlorine Dioxide	800	ppb
o-Dichlorobenzene	600	ppb	Chloramines	4	ppm
p-Dichlorobenzene	75	ppb	Bromate	10	ppb
1,2-Dichloroethane	5	ppb	Chlorite	1	ppm
1,1-Dichloroethylene	7	ppb	HAA5 [Total haloacetic acids]	60	ppb
cis-1,2-Dichloroethylene	70	ppb	TTHM [Total trihalomethanes]	80	ppb

UNREGULATED CONTAMINANTS			
1,1 – Dichloropropene	Aldicarb	Chloroform	Metolachlor
1,1,1,2-Tetrachloroethane	Aldicarb Sulfone	Chloromethane	Metribuzin
1,1,2,2-Tetrachloroethane	Aldicarb Sulfoxide	Dibromochloromethane	N - Butylbenzene
1,1-Dichloroethane	Aldrin	Dibromomethane	Naphthalene
1,2,3 - Trichlorobenzene	Bromobenzene	Dicamba	N-Propylbenzene
1,2,3 - Trichloropropane	Bromochloromethane	Dichlorodifluoromethane	O-Chlorotoluene
1,2,4 - Trimethylbenzene	Bromodichloromethane	Dieldrin	P-Chlorotoluene
1,3 – Dichloropropane	Bromoform	Hexachlorobutadiene	P-Isopropyltoluene
1,3 – Dichloropropene	Bromomethane	Isopropylbenzene	Propachlor
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene
2,2 – Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorfluoromethane

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Huntsville Utilities 2017 Water Quality Report
Esta información acerca de su agua potable es muy importante.
Le recomendamos que alguien traducirlo para usted.