



# QUALITY in EVERY DROP

ANNUAL WATER QUALITY REPORT 2019

 BIRMINGHAM  
WATER WORKS

# TABLE OF CONTENTS

Directors and Managers .....	3
FAQ .....	4
Awards .....	5
For Your Health/Customer Resources .....	6
BWVB Water Sources and System Information .....	7
The Water Treatment Process .....	8
Definitions and Abbreviations .....	9
2018 Water Quality Data .....	10-19

## CCR: Government Mandated

The Birmingham Water Works Board (BWVB), like all water utilities across the U.S., is required by the EPA to send its customers a Consumer Confidence Report (CCR) each year.

In 1996, Congress amended the Safe Drinking Water Act (SDWA) by adding a provision requiring all community water systems to deliver to their customers an annual water quality report, which contains information on the water system's source water, levels of any detected contaminants, compliance with drinking water rules and other educational information.

In 2018, as in years past, the BWVB met all state and federal regulations for water quality.

The BWVB has open meetings monthly at its main office located at 3600 First Avenue N., Birmingham, AL 35222. Meeting dates and times are posted on our website and at our main office. The Board welcomes public input and comments during its meetings. For questions please call 205-244-4000 or visit [www.bwvb.org](http://www.bwvb.org).



## Board of Directors

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EnviroLab, Water Quality, and  
Regulatory Compliance

**Stacy Littleton, CESCO, REM**  
Chief Chemist

**Derrick Felton**  
QA/QC Supervisor

**Will T. Moore, II**  
Water Quality Superintendent

**Jarrold Shotts, MSEM, CESCO**  
Regulatory Compliance Specialist

## FAQ

**What is the Consumer Confidence Report?**

The CCR is an annual report – on the water quality of a particular water system such as the BWWB – required by the Environmental Protection Agency (EPA). The report details and outlines contaminants and their levels in drinking water.

**Why am I getting this report?**

The BWWB is federally mandated by the EPA to provide this information to you. The Alabama Department of Environmental Management (ADEM) enforces these rules for the EPA. Regulated drinking water substances that were detected during the 2018 calendar year are provided in the report.

**Where can I get additional copies of this report?**

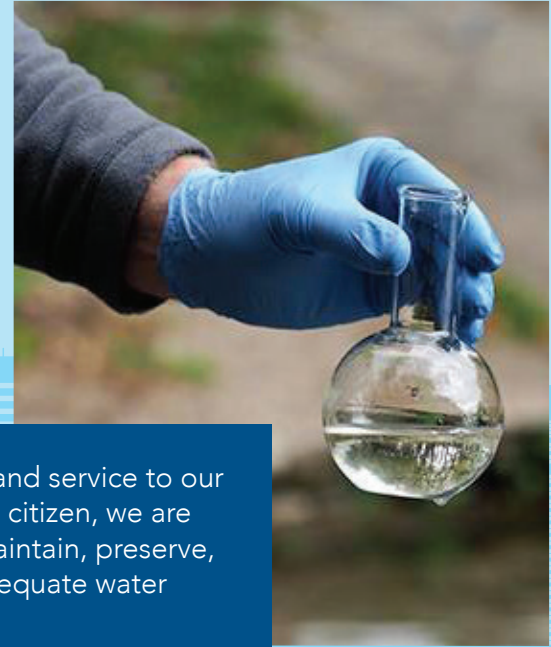
You may obtain additional copies of the CCR in person at the BWWB's Customer Service Center, by mail (upon request), or online by visiting [www.bwwb.org](http://www.bwwb.org). For questions concerning the CCR, please call *Jarrod Shotts* at *205-244-4206*.

**Why authorities regulate contaminant levels?**

In order to ensure that tap water is safe to drink, the EPA and ADEM prescribe regulations that limit the amount of certain substances in water provided by public water systems.

**For whom is this report produced?**

The CCR is produced for customers and wholesalers of the BWWB. It provides water quality data that confirms regulatory compliance of our water.



## MISSION

The BWWB is committed to providing the highest quality water and service to our customers and our entire service area. As a concerned corporate citizen, we are responsive to the needs of the entire community and strive to maintain, preserve, and conserve our precious water resources in order to ensure adequate water quality and supply for future generations.

## CARSON FILTER PLANT

AWPCA Best Operated Plant Award 20.1 – 30 MGD  
 Partnership for Safe Drinking Water President’s Award for 3rd consecutive year  
 Water Quality Fluoridation Award from the CDC

## PUTNAM FILTER PLANT

AWPCA Award of Excellence for Surface Water Plant Category 20.1 – 30 MGD  
 Water Quality Fluoridation Award from the CDC  
 ADEM AWOP 7 Year Optimized Plant Award  
 Partnership for Safe Drinking Water President’s Award for 2nd consecutive year  
 AWWA Alabama/Mississippi Section Operator of the Year Award: Bill Shikle for the 2nd time

## WESTERN FILTER PLANT

Water Quality Fluoridation Award from the CDC  
 Partnership Award of Excellence Award for 4th consecutive year

## SHADES MOUNTAIN FILTER PLANT

ADEM AWOP 7-year Optimized Plant Award  
 AWPCA Award of Excellence for Surface Water greater than 60 MGD  
 Water Quality Fluoridation Award from the CDC

## TRAINING DEPARTMENT

Birmingham Water Works earned the 7th spot from Training Magazine’s Training Top 125 Awards.

## SECURITY DEPARTMENT

For the 7th consecutive year, the Birmingham Water Works Board Security Department ranks among the top in the country. This year, BWWB was ranked 17th in the Utilities Category.



## For Your 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 **Environmental Protection Agency's Safe Drinking Water Hotline** at 1-800-426-4791.

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.

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline** (1-800-426-4791). For further information, contact the **Jefferson County Health Department** at 205-933-9110.

## Customer Resources

### CUSTOMER SERVICE, BILLING & LEAKS:

205-244-4000

### WATER QUALITY:

205-244-4381

### H2O FOUNDATION:

205-244-4390

### BIRMINGHAM WATER WORKS BOARD WEBSITE:

[WWW.BWWB.ORG](http://WWW.BWWB.ORG)



Cover emergency home repairs with HomeServe. Plumbing repair plans include:

Exterior Water Service Line Coverage, Exterior Sewer/Septic Line Coverage, as well as Interior Plumbing and Draining System Coverage.

[www.bwwbcoverageplans.com](http://www.bwwbcoverageplans.com)

1-855-709-6268

## BWWB Water Sources

- Black Warrior Basin
  - Sipsy Fork
  - Mulberry Fork
  - Inland Lake/Blackburn Fork
- Cahaba Basin
  - Big Cahaba River
  - Little Cahaba River
  - Lake Purdy

## System Information

- Average gallons of water delivered in 2018: 106.5 MGD
- People Served: 600,000\*
- Square miles in service area: 759\*
- Miles of water main (pipes) in system: 4,000\*

\*Approximations

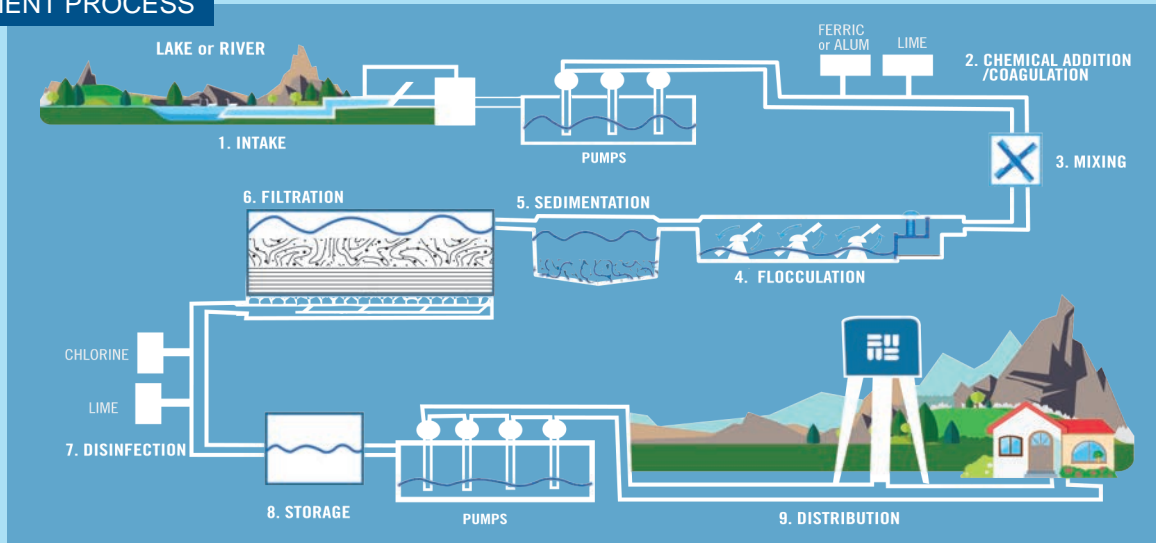
## Source Water Assessment

A source water assessment has been updated for the water system. It is available for review at the BWWB's main office during normal business hours. The following is a list of the sources of raw water along with the susceptibility rating of the contaminant source and the contaminant sources:

- Inland Lake - low susceptibility (septic tanks); moderate susceptibility (boat launch)
- Cahaba River - moderate susceptibility (highways, secondary roads, and railroad)
- Mulberry Fork - moderate susceptibility (septic tanks); high susceptibility (strip mining, bridges, industry, and highways)
- Sipsy Fork - moderate susceptibility (storm water runoff, industry)

The BWWB is making a maximum effort to physically protect all of our critical assets.





## The Water Treatment Process:

- 1. Intake** - Water is taken from the source. Fish, plants, and other debris are screened out and water is drawn into the treatment plant.
- 2. Chemical Addition/Coagulation** - Chemicals are added to cause particles in the water to stick together.
- 3. Mixing** - Water and chemicals are rapidly mixed.
- 4. Flocculation** - The larger particles are called floc.
- 5. Sedimentation** - The water and floc particles flow into a sedimentation basin. The floc then settles to the bottom and is removed from the water.
- 6. Filtration** - Water flows through filters. The filters are made of layers of anthracite, sand, and gravel.
- 7. Disinfection** - A small amount of chlorine or other disinfecting chemical is added to kill any remaining germs and keep the water safe as it travels to your house.
- 8. Storage** - Water is placed in a closed tank or clearwell.
- 9. Distribution** - Water is transported to your home. The BWWB delivered an average of 106.5 million gallons of water per day in 2018.



# DEFINITIONS & ABBREVIATIONS

**Action Level (AL)** - The concentration of contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Contaminant** - Any substance other than water. Note that contaminants, as defined, include dissolved minerals, purifying and dental health promotion additives.

**Locational Running Annual Average (LRAA)** - The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

**Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG)** - 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.

**Maximum Residual Disinfectant Level (MRDL)** - 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.

**Maximum Residual Disinfectant Level Goal (MRDLG)** - 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.

**Running Annual Average (RAA)** - Compliance period where an average of four consecutive quarterly samples are used.

**Total Haloacetic Acids (HAA)** - By-product of drinking water chlorination.

**Total Trihalomethanes (TTHM)** - By-product of drinking water chlorination.

**Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

**Turbidity (NTU)** - Measure of the clarity of water as it relates to its particle content. Turbidity is measured to determine the amount of particulate matter present in water.

**Variance and exemptions** - ADEM or EPA permission not to meet an MCL or treatment technique under certain conditions.

**ADEM** - Alabama Department of Environmental Management

**CDC** - Centers for Disease Control

**EPA** - Environmental Protection Agency

**°F** - Degrees Fahrenheit

**MGD** - Million Gallons per Day

**mg/L** - Milligrams per liter or parts per million (ppm)

**µS/cm** - Microsiemens per centimeters

**N/A** - Not Applicable

**ND** - Not Detected

**NTU** - Nephelometric Turbidity Unit

**pCi/L** - Picocuries per liter

**SU** - Standard Unit

**TOC** - Total Organic Carbon

**TON** - Threshold Odor Number

**µg/L** - Micrograms per liter or parts per billion (ppb)

## 2018 Chemical Analysis

Standard List Of Primary Drinking Water Contaminants for CCR  
Primary Drinking Water Standards - Limits are set based on public health effects.

### Bacteriological

	MCL	Distribution System Microbiological Substance (Regulated)
Total Coliform Bacteria	TT	The highest percentage of bacteria in the distribution system for one month was 0.57% (2 out of 353 samples). All locations that tested total coliform - positive were tested for <i>E. coli</i> . <i>E. coli</i> was not detected in any of these samples. All locations that tested total coliform - positive were resampled and all resamples were negative.
<i>E. coli</i>	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	

### Inorganic Chemicals and Radiological

Parameters (mg/L)	MCL	Carson Highest	Putnam Highest	Shades Mountain Highest	Western Highest
Antimony	0.006	ND	ND	ND	ND
Arsenic	0.01	ND	ND	ND	ND
Barium	2	<b>0.015</b>	<b>0.014</b>	<b>0.032</b>	<b>0.021</b>
Beryllium	0.004	ND	ND	ND	ND
Cadmium	0.005	ND	ND	ND	ND
Chlorine	MRDL = 4	<b>2.74</b>	<b>2.12</b>	<b>2.54</b>	<b>2.60</b>
Chromium	0.1	ND	ND	ND	ND
Copper	AL = 1.3	<b>0.002</b>	<b>0.002</b>	<b>0.046</b>	<b>0.002</b>
Cyanide	0.2	ND	ND	ND	ND
Fluoride	4	<b>0.51</b>	<b>0.65</b>	<b>0.71</b>	<b>0.72</b>
Gross Alpha (pCi/L)	15	ND	ND	ND	ND
Lead	AL = 0.015	ND	ND	ND	ND
Mercury	0.002	ND	ND	ND	ND
Nitrate as N	10	<b>0.26</b>	<b>0.29</b>	<b>0.56</b>	<b>0.50</b>
Nitrite as N	1	ND	ND	ND	ND
Radium 226 (pCi/L)	5	<b>0.2</b>	<b>0.3</b>	ND	ND
Radium 228 (pCi/L)	5	ND	ND	ND	ND
Selenium	0.05	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND
Total Nitrate/Nitrite	10	<b>0.26</b>	<b>0.29</b>	<b>0.56</b>	<b>0.50</b>
Turbidity (NTU)	0.3 (TT)	<b>0.20</b>	<b>0.21</b>	<b>0.21</b>	<b>0.26</b>

**Regulated Organic Chemicals**

<b>Parameters (µg/L)</b>	<b>MCL</b>	<b>Carson Highest</b>	<b>Putnam Highest</b>	<b>Shades Mountain Highest</b>	<b>Western Highest</b>
1,1 Dichloroethylene	7	ND	ND	ND	ND
1,1,1 Trichloroethane	200	ND	ND	ND	ND
1,1,2 Trichloroethane	5	ND	ND	ND	ND
1,2 Dichloroethane	5	ND	ND	ND	ND
1,2 Dichloropropane	5	ND	ND	ND	ND
1,2,4-Trichlorobenzene	70	ND	ND	ND	ND
2,4,5-TP (Silvex)	50	ND	ND	ND	ND
2,4-D	70	ND	ND	ND	ND
Alachlor	2	ND	ND	ND	ND
Atrazine	3	ND	ND	ND	ND
Benzene	5	ND	ND	ND	ND
Benzo(a)pyrene	0.2	ND	ND	ND	ND
Carbofuran	40	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	ND	ND
Chlordane	2	ND	ND	ND	ND
Chlorobenzene	100	ND	ND	ND	ND
Cis-1,2 Dichloroethylene	70	ND	ND	ND	ND
Dalapon	200	ND	ND	ND	ND
Di (2-Ethylhexyl) Adipate	400	ND	ND	ND	ND
Di (2-Ethylhexyl) Phthalate	6	ND	ND	ND	ND
Dibromochloropropane	0.2	ND	ND	ND	ND
Dichloromethane	5	ND	ND	ND	ND
Dinoseb	7	ND	ND	ND	ND
Diquat	20	ND	ND	ND	ND
Endothall	100	ND	ND	ND	ND
Endrin	2	ND	ND	ND	ND
Ethylbenzene	700	ND	ND	ND	ND
Ethylene Dibromide (EDB)	0.05	ND	ND	ND	ND
Glyphosate	700	ND	ND	ND	ND
Heptachlor	0.4	ND	ND	ND	ND
Heptachlor Epoxide	0.2	ND	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND	ND
Hexachlorocyclopentadiene	50	ND	ND	ND	ND
Lindane	0.2	ND	ND	ND	ND
Methoxychlor	40	ND	ND	ND	ND

Regulated Organic Chemicals					
Parameters (µg/L)	MCL	Carson Highest	Putnam Highest	Shades Mountain Highest	Western Highest
o-Dichlorobenzene	600	ND	ND	ND	ND
Oxamyl (Vydate)	200	ND	ND	ND	ND
PCB, 1016	0.5	ND	ND	ND	ND
PCB, 1221	0.5	ND	ND	ND	ND
PCB, 1232	0.5	ND	ND	ND	ND
PCB, 1242	0.5	ND	ND	ND	ND
PCB, 1248	0.5	ND	ND	ND	ND
PCB, 1254	0.5	ND	ND	ND	ND
PCB, 1260	0.5	ND	ND	ND	ND
p-Dichlorobenzene	75	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND
Picloram	500	ND	ND	ND	ND
Simazine	4	ND	ND	ND	ND
Styrene	100	ND	ND	ND	ND
Tetrachloroethylene	5	ND	ND	ND	ND
Toluene	1000	ND	ND	ND	ND
Total Haloacetics Acids	60	24.7	13.6	29.8	23.0
Total Trihalomethanes	80	15.3	22.0	25.5	26.3
Toxaphene	3	ND	ND	ND	ND
Trans-1,2 Dichloroethylene	100	ND	ND	ND	ND
Trichloroethylene	5	ND	ND	ND	ND
Vinyl Chloride	2	ND	ND	ND	ND
Xylenes	10,000	ND	ND	ND	ND
Running Annual Average for System Wide Stage 2 Sites					
	MCL	RAA			
Total Trihalomethanes (µg/L)	System-wide Running Annual Average (RAA): 80 µg/L	35.1			
Total Haloacetic Acids (µg/L)	System-wide Running Annual Average (RAA): 60 µg/L	26.9			
TOC Step Removal for Filter Plants					
	MCL	Carson	Putnam	Shades Mountain	Western
Total Organic Carbon (TOC)	4 (TT)	1.00	1.00	1.00	1.00

**2018 Chemical Analysis**  
 Regulated Drinking Water Contaminants for CCR  
 Primary Drinking Water Standards - Limits are set based on public health effects.

	MCLG	MCL									Major Sources in Drinking Water
Total Coliform Bacteria	N/A	TT		The highest percentage of bacteria in the distribution system for one month was 0.57% (2 out of 353 samples). All locations that tested total coliform - positive were tested for <i>E. coli</i> . <i>E. coli</i> was not detected in any of these samples. All locations that tested total coliform - positive were resampled and all resamples were negative.							Naturally present in the environment.
<i>E. coli</i>	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .									
Parameters (mg/L)	MCLG	MCL	Carson		Putnam		Shades Mountain		Western		Major Sources in Drinking Water
			Highest	Range	Highest	Range	Highest	Range	Highest	Range	
Antimony	0.006	0.006	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	0	0.01	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	2	2	0.015	0.010 - 0.015	0.014	0.010 - 0.014	0.032	0.019 - 0.032	0.021	0.016 - 0.021	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	0.004	0.004	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace and defense industries
Cadmium	0.005	0.005	ND	ND	ND	ND	ND	ND	ND	ND	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chlorine	MRDLG = 4	MRDL = 4	2.74	1.65 - 2.74	2.12	1.62 - 2.12	2.54	1.57 - 2.54	2.60	1.51 - 2.60	Water additive used to control microbes
Chromium	0.1	0.1	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from steel and pulp mills; erosion of natural deposits
Copper	1.3	AL = 1.3	0.002	0.002	0.002	ND - 0.002	0.046	0.010 - 0.046	0.002	0.001 - 0.002	Corrosion of household plumbing systems; erosion of natural deposits
Cyanide	0.2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from steel/ metal factories; discharge from plastic and fertilizer factories
Fluoride	4	4	0.51	ND - 0.51	0.65	0.62 - 0.65	0.71	0.68 - 0.71	0.72	0.50 - 0.72	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha (pCi/L)	0	15	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Lead	0	AL = 0.015	ND	ND	ND	ND	ND	ND	ND	ND	Corrosion of household plumbing; erosion of natural deposits
Mercury	0.002	0.002	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
Nitrate as N	10	10	0.26	ND - 0.26	0.29	ND - 0.29	0.56	0.53 - 0.56	0.50	0.29 - 0.50	Runoff from fertilizer; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite as N	1	1	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from fertilizer; leaching from septic tanks and sewage; erosion of natural deposits
Radium 226 (pCi/L)	0	5	0.2	0.2	0.3	0.3	ND	ND	ND	ND	Erosion of natural deposits
Radium 228 (pCi/L)	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits
Selenium	0.05	0.05	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines
Thallium	0.0005	0.002	ND	ND	ND	ND	ND	ND	ND	ND	Leaching from ore-processing sites; discharge from electronics, glass and drug factories
Total Nitrate/Nitrite	10	10	0.26	ND - 0.26	0.29	ND - 0.29	0.56	0.53 - 0.56	0.50	0.29 - 0.50	Runoff from fertilizer; leaching from septic tanks and sewage; erosion of natural deposits
Turbidity (NTU)	N/A	0.3 (TT)	0.20	0.02 - 0.20	0.21	0.02 - 0.21	0.21	0.01 - 0.21	0.26	0.02 - 0.26	Soil runoff

2018 Chemical Analysis Regulated Organic Chemicals											
Parameters (µg/L)	MCLG	MCL	Carson		Putnam		Shades Mountain		Western		Major Sources in Drinking Water
			Highest	Range	Highest	Range	Highest	Range	Highest	Range	
1,1 Dichloroethylene	7	7	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
1,1,1 Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories
1,1,2 Trichloroethane	3	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
1,2 Dichloroethane	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
1,2 Dichloropropane	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from textile-finishing factories
2,4,5-TP (Silvex)	50	50	ND	ND	ND	ND	ND	ND	ND	ND	Residue of banned herbicide
2,4-D	70	70	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops
Alachlor	0	2	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops
Atrazine	3	3	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops
Benzene	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from factories; leaching from gas storage tanks and landfills
Benzo(a)pyrene	0	0.2	ND	ND	ND	ND	ND	ND	ND	ND	Leaching from linings of water storage tanks and distribution lines
Carbofuran	40	40	ND	ND	ND	ND	ND	ND	ND	ND	Leaching of soil fumigant used on rice and alfalfa
Carbon Tetrachloride	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical plants and other industrial activities
Chlordane	0	2	ND	ND	ND	ND	ND	ND	ND	ND	Residue of banned termiticide
Chlorobenzene	100	100	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical and agricultural chemical factories
Cis-1,2 Dichloroethylene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
Dalapon	200	200	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on rights of way
Di (2-Ethylhexyl) Adipate	400	400	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical factories
Di (2-Ethylhexyl) Phthalate	0	6	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from rubber and chemical factories
Dibromochloropropane	0	0.2	ND	ND	ND	ND	ND	ND	ND	ND	Runoff/ leaching from soil fumigant used on soybeans, cotton, pineapples and orchards
Dichloromethane	0	5	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from pharmaceutical and chemical factories
Dinoseb	7	7	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on soybeans and vegetables
Diquat	20	20	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide use
Endothall	100	100	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide use
Endrin	2	2	ND	ND	ND	ND	ND	ND	ND	ND	Residue of banned insecticide
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries
Ethylene Dibromide (EDB)	0	0.05	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries
Glyphosate	700	700	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from herbicide use
Heptachlor	0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	Residue of banned termiticide
Heptachlor Epoxide	0	0.2	ND	ND	ND	ND	ND	ND	ND	ND	Breakdown of heptachlor
Hexachlorobenzene	0	1	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene	50	50	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical factories
Lindane	0.2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	Runoff/ leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	40	40	ND	ND	ND	ND	ND	ND	ND	ND	Runoff/ leaching from insecticide used on fruits, vegetables, alfalfa, livestock
o-Dichlorobenzene	600	600	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
Oxamyl (Vydate)	200	200	ND	ND	ND	ND	ND	ND	ND	ND	Runoff/ leaching from insecticide used on apples, potatoes, and tomatoes
PCB, 1016	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals

PCB, 1221	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
PCB, 1232	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
PCB, 1242	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
PCB, 1248	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
PCB, 1254	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
PCB, 1260	0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff from landfills; discharge of waste chemicals
p-Dichlorobenzene	75	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
Pentachlorophenol	0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from wood preserving factories
Picloram	500	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Herbicide runoff
Simazine	4	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Herbicide runoff
Styrene	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene	0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Leaching from PVC pipes; discharge from factories and dry cleaners
Toluene	1000	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum factories
Total Haloacetic Acids	N/A	60	24.7	20.4 - 24.7	13.6	9.46 - 13.6	29.8	13.3 - 29.8	23.0	17.1 - 23.0			By-product of drinking water chlorination
Total Trihalomethanes	N/A	80	15.3	13.4 - 15.3	22.0	11.8 - 22.0	25.5	12.5 - 25.5	26.3	18.2 - 26.3			By-product of drinking water chlorination
Toxaphene	0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Runoff/ leaching from insecticide used on cotton and cattle
Trans-1,2 Dichloroethylene	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
Trichloroethylene	0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories
Vinyl Chloride	0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Leaching from PVC piping; discharge from plastic factories
Xylenes	10,000	10,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum factories; discharge from chemical factories

**Running Annual Average for System Wide Stage 2 Sites**

	MCLG	MCL	RAA	Major Sources in Drinking Water							
Total Trihalomethanes (µg/L)	N/A	System-wide Running Annual Average (RAA): 80 µg/L	35.1	By-product of drinking water chlorination							
Total Haloacetic Acids (µg/L)	N/A	System-wide Running Annual Average (RAA): 60 µg/L	26.9	By-product of drinking water chlorination							

**TOC Step Removal for Filter Plants**

TOC Percent Removal			Carson	Putnam	Shades Mountain	Western	Major Sources in Drinking Water
Total Organic Carbon (TOC)	N/A	4 (TT)	1.00	1.00	1.00	1.00	Naturally present in the environment

**Secondary Drinking Water Standards**

Limits are set based on cosmetic or aesthetic effects.

Parameters (mg/L)	MCLG	MCL	Carson		Putnam		Shades Mountain		Western		Major Sources in Drinking Water
			Highest	Range	Highest	Range	Highest	Range	Highest	Range	
Aluminum	N/A	0.05 - 0.2	0.016	0.009 - 0.016	0.014	0.007 - 0.014	0.032	0.026 - 0.032	0.024	0.016 - 0.024	By-product of drinking water treatment
Amide	N/A	Monitored	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium	N/A	Monitored	16.7	13.9 - 16.7	18.7	16.4 - 18.7	42.8	23.5 - 42.8	27.0	21.3 - 27.0	
Carbon Dioxide	N/A	Monitored	ND	ND	ND	ND	ND	ND	ND	ND	
Chloride	N/A	250	4.82	3.90 - 4.82	4.47	4.22 - 4.47	10.0	6.30 - 10.0	5.85	5.01 - 5.85	
Copper	N/A	1	0.002	0.002	0.002	ND - 0.002	0.046	0.010-0.046	0.002	0.001 - 0.002	
Foaming Agent	N/A	0.5	ND	ND	ND	ND	ND	ND	ND	ND	
Iron	N/A	0.3	ND	ND	ND	ND	ND	ND	ND	ND	
Langlier Index (LSI)	N/A	Non-corrosive	-1.06	-1.28 to -1.06	0.077	-0.442 to 0.077	-0.382	-0.779 to -0.382	-0.383	-0.411 to -0.383	
Magnesium	N/A	Monitored	3.67	3.31 - 3.67	3.63	3.18 - 3.63	7.95	4.70 - 7.95	5.99	3.39 - 5.99	
Manganese	N/A	ND	ND	ND	ND	ND	0.002	ND - 0.002	0.002	ND - 0.002	
pH (SU)	N/A	6.5 - 8.5	8.11	7.66 - 8.11	8.97	8.40 - 8.97	7.95	7.52 - 7.95	8.45	8.14 - 8.45	
Potassium	N/A	Monitored	1.95	1.64 - 1.95	1.95	1.66 - 1.95	2.39	1.43 - 2.39	2.02	1.92 - 2.02	
Silver	N/A	0.1	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium	N/A	Monitored	1.89	1.73 - 1.89	1.86	1.70 - 1.86	11.6	6.81 - 11.6	4.29	2.89 - 4.29	
Specific Conductivity (µS/cm)	N/A	Monitored	160	124 - 160	174	135 - 174	360	195 - 360	262	180 - 262	
Sulfate	N/A	250	25.1	23.3 - 25.1	29.5	26.4 - 29.5	67.3	37.8 - 67.3	52.4	35.4 - 52.4	
TDS	N/A	500	87.5	75.0 - 87.5	90.0	87.5 - 90.0	203	123 - 203	128	115 - 128	
Temperature (°F)	N/A	Monitored	57	48 - 57	57	48 - 57	81	53 - 81	69	53 - 69	
Total Alkalinity	N/A	Monitored	32	26 - 32	32	28 - 32	78	44 - 78	46	32 - 46	
Total Hardness	N/A	Monitored	68	40 - 68	72	52 - 72	140	76 - 140	104	64 - 104	
Zinc	N/A	5	0.006	ND - 0.006	0.011	ND - 0.011	0.006	ND - 0.006	ND	ND	
Color, APHA (color units)	N/A	15 color units	ND	ND	ND	ND	ND	ND	ND	ND	
Odor (TON)	N/A	3 TON	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Monitoring</b>											
Nickel	N/A	0.1	ND	ND	0.001	ND - 0.001	0.003	0.002 - 0.003	ND	ND	Discharge from nickel smelting/refining and steelworks industries

**2018 Chemical Analysis**  
 Unregulated Organic Substances  
 Substances Not Detected

Parameters (µg/L)	MCLG	MCL	Carson		Putnam		Shades Mountain		Western	
			Highest	Range	Highest	Range	Highest	Range	Highest	Range
1,1,1,2-Tetrachloroethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
3-Hydroxycarbofuran	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Aldicarb	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Aldicarb Sulfone	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Aldicarb Sulfoxide	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Butachlor	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Carbaryl	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Dibromoacetic Acid	N/A	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Dicamba	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Methiocarb	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Methomyl	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tertiary Butyl Ether	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Metolachlor	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Metribuzin	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
o-Chlorotoluene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
p-Chlorotoluene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Propachlor	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
Propoxur	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0	Monitored	ND	ND	ND	ND	ND	ND	ND	ND
<b>Unregulated Organic Substances Detected</b>										
Bromodichloromethane	0	Monitored	3.29	2.83 - 3.29	4.00	2.76 - 4.00	7.23	3.47 - 7.23	5.95	3.78 - 5.95
Chloroform	70	Monitored	12.0	10.4 - 12.0	18.0	8.78 - 18.0	16.5	8.05 - 16.5	19.4	13.9 - 19.4
Dibromochloromethane	60	Monitored	ND	ND	ND	ND	2.03	ND - 2.03	1.66	ND - 1.66
Dichloroacetic Acid	0	Monitored	13.6	7.41 - 13.6	8.15	5.20 - 8.15	13.1	6.26 - 13.1	13.1	8.17 - 13.1
Monobromoacetic Acid	N/A	Monitored	4.91	ND - 4.91	2.62	ND - 2.62	7.70	ND - 7.70	4.75	ND - 4.75
Monochloroacetic Acid	70	Monitored	1.29	ND - 1.29	ND	ND	ND	ND	ND	ND
Trichloroacetic Acid	20	Monitored	9.27	7.52 - 9.27	3.64	2.80 - 3.64	9.02	4.97 - 9.02	9.02	6.12 - 9.02



## Unregulated Contaminant Monitoring Rule Phase IV (UCMR4)

Unregulated Contaminant Monitoring Rule Phase IV (UCMR4)		
Contaminants (ppb)	Detected Contaminants	
	Average Level Detected	Range of Detections
Haloacetic Acids (HAA <sub>6</sub> Br)	4.82	2.39 - 8.56
Haloacetic Acids (HAA <sub>9</sub> )	25.2	15.1 - 38.4
Manganese	1.02	ND - 4.36
Quinoline	0.003	ND - 0.042
Non-Detected Contaminants		
1-Butanol	Ethoprop	o-Toluidine
2-Methoxyethanol	Germanium	Oxyfluorfen
2-Propen-1-ol	Microcystin-LA	Profenofos
Alpha-hexachlorocyclohexane	Microcystin-LF	Tebuconazole
Anatoxin-a	Microcystin-LR	Total Microcystin
Butylated hydroxyanisole	Microcystin-LY	Total Permethrin (cis- & trans-)
Chlorpyrifos	Microcystin-RR	Tribufos
Cylindrospermopsin	Microcystin-YR	
Dimethipin	Nodularin	

In 2018, BWWB participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR 4). Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

- The most recent testing for Lead and Copper Compliance within the distribution system was from June - September 2016. This testing was done in accordance with applicable regulations. The 90th percentile lead sample was 0.001 mg/L. No lead samples exceeded the action level. The 90th percentile copper sample was 0.186 mg/L. No copper samples exceeded the action level.
- 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. The Birmingham Water Works Board (BWWB) 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

- The BWWB uses acrylamide based polymers in its solids handling operations.
- 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.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are

an indicator of whether or not your drinking water meets health standards. BWWB did not maintain an adequate inventory of lead service lines and tier 1 sites for sampling purposes. During 2016 lead and copper compliance sampling, we did not test samples collected solely from tier 1 sites and we did not test at least 50% of samples from lead service lines and therefore cannot be sure of the quality of your drinking water during that time. In April 2019, an additional 54 lead and copper samples were collected from tier 1 sites in the same vicinity of the 2016 samples, using the appropriate sampling procedures. None of the samples collected exceeded the action level for lead or copper. Beginning on November 16, 2017, we initiated a service line database to document all service lines. The 2019 lead and copper sampling plan has been updated to include the required tier 1 sites and lead service line sampling locations. The next round of lead and copper compliance sampling will occur from July through December 2019.

## 2018 Chemical Analysis

### Stage 2 Sites

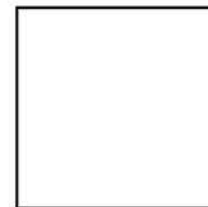
Sites	Monochloroacetic Acid (µg/L)		Monobromoacetic Acid (µg/L)		Dichloroacetic Acid (µg/L)		Trichloroacetic Acid (µg/L)		Dibromoacetic Acid (µg/L)		Total Haloacetic Acids (HAA <sub>3</sub> ) (µg/L)		LRAA Total Haloacetic Acids (HAA <sub>3</sub> ) (µg/L)
	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Average per Site
Carson	1.29	ND - 1.29	4.91	ND - 4.91	13.6	7.41 - 13.6	9.27	7.52 - 9.27	ND	ND	24.7	20.4 - 24.7	22.5
Parade Gas Station Hwy 75	ND	ND	6.51	ND - 6.51	15.4	8.27 - 15.4	14.0	10.4 - 14.0	ND	ND	33.3	23.4 - 33.3	28.0
Moody Police Dept	3.16	ND - 3.16	3.51	ND - 3.51	23.2	6.55 - 23.2	22.6	13.7 - 22.6	ND	ND	49.1	21.2 - 49.1	40.2
Birmingham Fire Station #30	2.29	ND - 2.29	3.54	ND - 3.54	18.3	11.6 - 18.3	18.6	11.2 - 18.6	ND	ND	36.8	28.4 - 36.8	31.3
Putnam	ND	ND	2.62	ND - 2.62	8.15	5.20 - 8.15	3.64	2.80 - 3.64	ND	ND	13.6	9.46 - 13.6	11.3
New Temple Baptist Church	2.86	ND - 2.86	ND	ND	21.6	13.3 - 21.6	18.1	12.3 - 18.1	ND	ND	40.8	27.9 - 40.8	37.1
Birmingham Fire Station #12	2.88	ND - 2.88	3.14	ND - 3.14	25.1	6.23 - 25.1	8.65	3.66 - 8.65	ND	ND	36.7	13.0 - 36.7	19.2
Shades Mountain	ND	ND	7.70	ND - 7.70	13.1	6.26 - 13.1	9.02	4.97 - 9.02	ND	ND	29.8	13.3 - 29.8	19.9
Birmingham Fire Station #32	ND	ND	3.92	ND - 3.92	11.7	6.10 - 11.7	9.77	5.37 - 9.77	ND	ND	21.5	13.9 - 21.5	17.3
Highland Lakes Bristol Lane	3.12	ND - 3.12	5.26	ND - 5.26	21.7	11.9 - 21.7	16.1	8.42 - 16.1	ND	ND	40.8	20.5 - 40.8	30.1
Hoover Fire Station #2	ND	ND	5.14	ND - 5.14	13.8	7.23 - 13.8	11.7	6.56 - 11.7	ND	ND	25.5	17.4 - 25.5	20.7
Shades Crest Grocery	2.38	ND - 2.38	5.57	ND - 5.57	19.7	10.9 - 19.7	16.0	7.89 - 16.0	ND	ND	35.7	22.4 - 35.7	28.3
Western	ND	ND	4.75	ND - 4.75	13.1	8.17 - 13.1	9.02	6.12 - 9.02	ND	ND	23.0	17.1 - 23.0	19.5
Birmingham Fire Station #18	ND	ND	4.04	ND - 4.04	14.4	8.07 - 14.4	9.76	7.64 - 9.76	ND	ND	24.0	17.7 - 24.0	20.6
Pleasant Grove Post Office	ND	ND	1.89	ND - 1.89	13.9	11.4 - 13.9	12.0	7.70 - 12.0	ND	ND	23.7	21.6 - 23.7	23.0
Shannon Fire Station	ND	ND	ND	ND	16.9	11.4 - 16.9	18.6	7.05 - 18.6	ND	ND	30.4	21.0 - 30.4	27.9

Sites	Chloroform (µg/L)		Bromodichloromethane (µg/L)		Dibromochloromethane (µg/L)		Bromoform (µg/L)		Total Trihalomethanes (TTHM) (µg/L)		LRAA Total Trihalomethanes (TTHM) (µg/L)
	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Average per Site
Carson	12.0	10.4 - 12.0	3.29	2.83 - 3.29	ND	ND	ND	ND	15.3	13.4 - 15.3	14.4
Parade Gas Station Hwy 75	16.9	13.5 - 16.9	4.32	3.28 - 4.32	ND	ND	ND	ND	21.2	16.8 - 21.2	18.6
Moody Police Dept	49.4	38.1 - 49.4	7.50	6.58 - 7.50	1.15	ND - 1.15	ND	ND	57.8	44.7 - 57.8	53.0
Birmingham Fire Station #30	54.9	19.2 - 54.9	7.52	4.23 - 7.52	ND	ND	ND	ND	62.4	23.4 - 62.4	35.3
Putnam	18.0	8.78 - 18.0	4.00	2.76 - 4.00	ND	ND	ND	ND	22.0	11.8 - 22.0	14.8
New Temple Baptist Church	72.4	42.3 - 72.4	8.32	6.10 - 8.32	1.30	ND - 1.30	ND	ND	82.0	49.1 - 82.0	62.2
Birmingham Fire Station #12	13.6	8.98 - 13.6	3.55	3.07 - 3.55	ND	ND	ND	ND	16.7	12.1 - 16.7	14.6
Shades Mountain	16.5	8.05 - 16.5	7.23	3.47 - 7.23	2.03	ND - 2.03	ND	ND	25.5	12.5 - 25.5	18.3
Birmingham Fire Station #32	15.8	11.5 - 15.8	7.22	4.28 - 7.22	2.20	1.15 - 2.20	ND	ND	24.8	16.9 - 24.8	20.8
Highland Lakes Bristol Lane	35.3	21.1 - 35.3	8.73	7.25 - 8.73	2.52	2.16 - 2.52	ND	ND	46.5	31.2 - 46.5	36.8
Hoover Fire Station #2	34.1	13.1 - 34.1	9.86	4.96 - 9.86	3.47	1.30 - 3.47	ND	ND	47.5	19.4 - 47.5	32.3
Shades Crest Grocery	41.4	18.4 - 41.4	11.3	6.17 - 11.3	2.76	2.04 - 2.76	ND	ND	55.5	26.6 - 55.5	38.9
Western	19.4	13.9 - 19.4	5.95	3.78 - 5.95	1.66	ND - 1.66	ND	ND	26.3	18.2 - 26.3	22.1
Birmingham Fire Station #18	24.5	16.8 - 24.5	6.74	4.20 - 6.74	1.56	ND - 1.56	ND	ND	32.2	21.2 - 32.2	26.4
Pleasant Grove Post Office	33.4	20.0 - 33.4	8.20	4.81 - 8.20	2.05	1.24 - 2.05	ND	ND	42.0	26.1 - 42.0	36.2
Shannon Fire Station	54.3	16.5 - 54.3	12.4	5.65 - 12.4	2.73	1.79 - 2.73	ND	ND	69.4	24.0 - 69.4	46.1

Consecutive System Meters													
Meters	Monochloroacetic Acid (µg/L)		Monobromoacetic Acid (µg/L)		Dichloroacetic Acid (µg/L)		Trichloroacetic Acid (µg/L)		Dibromoacetic Acid (µg/L)		Total Haloacetic Acids (HAA <sub>5</sub> ) (µg/L)		LRAA Total Haloacetic Acids (HAA <sub>5</sub> ) (µg/L)
	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Average per Site
West Jefferson - 4251 Flat Top Road, 35073	ND	ND	ND	ND	17.6	11.5 - 17.6	12.8	9.47 - 12.8	ND	ND	29.6	21.0 - 29.6	24.9
Brookside #1 - 1298 Brookside Coalburg Road, 35181	ND	ND	ND	ND	15.2	10.2 - 15.2	11.0	6.82 - 11.0	ND	ND	22.0	20.3 - 22.0	21.0
Brookside #2 - 2299 Robert Road, 35214	ND	ND	2.18	ND - 2.18	16.3	8.38 - 16.3	10.3	8.49 - 10.3	ND	ND	26.5	18.4 - 26.5	22.4
Pine Bluff #1 - 22495 State Highway 79, 35172	2.67	ND - 2.67	9.02	ND - 9.02	24.8	11.3 - 24.8	16.0	13.0 - 16.0	ND	ND	40.9	27.0 - 40.9	35.0
Pine Bluff #2 - 9 Good News Road, 35172	1.94	ND - 1.94	7.30	ND - 7.30	21.7	10.4 - 21.7	13.9	11.8 - 13.9	ND	ND	35.6	24.9 - 35.6	30.2
SCO - 3535 Colonnade Parkway, 35243	ND	ND	5.11	ND - 5.11	12.7	6.95 - 12.7	9.63	5.11 - 9.63	ND	ND	22.3	13.1 - 22.3	18.1
Mulga #1 - 316 Templeton Road, 35218	ND	ND	2.47	ND - 2.47	17.8	9.20 - 17.8	11.1	7.63 - 11.1	ND	ND	28.9	18.3 - 28.9	22.1
Mulga #2 - 601 Pleasant Grove Road, 35127	ND	ND	ND	ND	17.0	9.45 - 17.0	12.6	10.1 - 12.6	ND	ND	29.6	21.3 - 29.6	24.0
Graysville #1 - 2395 Forestdale Blvd, 35214	ND	ND	2.96	ND - 2.96	14.7	7.92 - 14.7	8.55	6.35 - 8.55	ND	ND	23.3	14.3 - 23.3	18.8
Graysville #2 - 4251 Flattop Road, 35073	ND	ND	ND	ND	17.6	9.98 - 17.6	12.3	7.98 - 12.3	ND	ND	29.9	19.1 - 29.9	23.2
Remlap - 942 Ridgewood Drive, 35133	3.08	ND - 3.08	ND	ND	21.5	11.5 - 21.5	15.7	12.8 - 15.7	ND	ND	37.0	26.1 - 37.0	31.5
UAB/VA - 1813 6th Avenue South, 35233	ND	ND	ND	ND	15.8	7.07 - 15.8	11.4	6.39 - 11.4	ND	ND	27.2	15.1 - 27.2	21.9
Meters	Chloroform (µg/L)		Bromodichloromethane (µg/L)		Dibromochloromethane (µg/L)		Bromoform (µg/L)		Total Trihalomethanes (TTHM) (µg/L)		LRAA Total Trihalomethanes (TTHM) (µg/L)		
	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Highest	Range	Average per Site		
West Jefferson - 4251 Flat Top Road, 35073	29.0	21.4 - 29.0	7.80	4.22 - 7.80	1.80	ND - 1.80	ND	ND	38.6	25.6 - 38.6	30.8		
Brookside #1 - 1298 Brookside Coalburg Road, 35181	24.0	15.7 - 24.0	6.62	4.17 - 6.62	1.83	ND - 1.83	ND	ND	29.9	24.1 - 29.9	26.9		
Brookside #2 - 2299 Robert Road, 35214	24.6	14.6 - 24.6	6.50	3.78 - 6.50	1.70	ND - 1.70	ND	ND	32.3	18.7 - 32.3	24.9		
Pine Bluff #1 - 22495 State Highway 79, 35172	29.6	17.6 - 29.6	6.19	3.99 - 6.19	ND	ND	ND	ND	35.8	21.6 - 35.8	28.7		
Pine Bluff #2 - 9 Good News Road, 35172	27.4	16.4 - 27.4	6.06	3.82 - 6.06	ND	ND	ND	ND	33.4	20.2 - 33.4	27.2		
SCO - 3535 Colonnade Parkway, 35243	39.6	12.1 - 39.6	7.71	4.66 - 7.71	2.11	ND - 2.11	ND	ND	45.7	18.1 - 45.7	28.1		
Mulga #1 - 316 Templeton Road, 35218	20.5	13.9 - 20.5	6.18	3.66 - 6.18	1.82	ND - 1.82	ND	ND	28.1	17.6 - 28.1	23.8		
Mulga #2 - 601 Pleasant Grove Road, 35127	48.9	21.1 - 48.9	9.41	5.77 - 9.41	2.07	1.18 - 2.07	ND	ND	60.4	28.3 - 60.4	41.5		
Graysville #1 - 2395 Forestdale Blvd, 35214	16.8	15.5 - 16.8	5.93	3.73 - 5.93	1.54	ND - 1.54	ND	ND	22.9	20.3 - 22.9	21.7		
Graysville #2 - 4251 Flattop Road, 35073	26.8	21.9 - 26.8	7.62	4.34 - 7.62	2.02	ND - 2.02	ND	ND	36.5	26.2 - 36.5	32.7		
Remlap - 942 Ridgewood Drive, 35133	33.2	24.0 - 33.2	5.55	4.03 - 5.55	ND	ND	ND	ND	38.8	28.0 - 38.8	33.8		
UAB/VA - 1813 6th Avenue South, 35233	38.4	12.5 - 38.4	9.74	4.80 - 9.74	2.50	1.36 - 2.50	ND	ND	47.2	18.7 - 47.2	34.4		



3600 FIRST AVENUE N.  
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