

LEAD & COPPER SAMPLING PLAN



6/27/2019

The Birmingham Water Works Board



BIRMINGHAM
WATER WORKS

The Birmingham Water Works Board

In accordance with the Alabama Department of Environmental Management Water Supply Program Division 335-7, please find the attached 2019 Lead and Copper Sampling Plan.

Feel free to contact Drusilla Hudson with any questions concerning the plan. Drusilla Hudson 205-244-4466 or drusilla.hudson@bwwb.org.

Lead & Copper Sampling Plan

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System Information

System Name: The Water Works Board of the City of Birmingham

PWSID Number: AL0000738

Address: 3600 First Avenue North (35222)
P.O. Box 830110
Birmingham, Alabama 35283-0110

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System Type: Surface Water System

Treatment Facilities:

Shades Mountain Filter Plant
2990 Shades Crest Road
Birmingham, Alabama 35216

Western Filter Plant
1400 Bankhead Highway W.
Birmingham, Alabama 35214

Putnam Filter Plant
4400 Inglenook Lane
Birmingham, Alabama 35217

Carson Filter Plant
6560 Alabama State Highway 151
Pinson, Alabama 35126

Source Information:	Shades Mountain Filter Plant – Cahaba River and Lake Purdy Western Filter Plant – Mulberry and Sipsey Rivers Putnam Filter Plant – Mulberry River, Sipsey River and Inland Lake Carson Filter Plant – Inland Lake and Sipsey River
Treatment:	Conventional Treatment (Coagulation, Sedimentation, Filtration and Disinfection). Western, Putnam, and Carson Filter Plants use chlorine gas for disinfection. Shades Mountain Filter Plant disinfects water with sodium hypochlorite.
Corrosion Control:	The Lead and Copper Rule defines Optimal Corrosion Control Treatment (OCCT) as treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations (CFR-2011 title 40 vol. 23 part 141.2). The Birmingham Water Works Board (BWWB) meets all national primary drinking water regulations while controlling levels of lead and copper. Optimal Corrosion Control Treatment is achieved by following corrosion control strategies. These strategies include the control of pH and alkalinity at all Birmingham Water Works Board Filter Plants. Each of the Filter Plants control pH and alkalinity with the addition of calcium carbonate or calcium hydroxide. Carson Filter Plant's control strategy involves the addition of an orthophosphate corrosion control inhibitor, in addition to management of pH and alkalinity.
Population Served:	600,000 * (Estimated)
Number of Samples:	656 (100 samples required) 50% of the samples collected will be from our lead service lines. Upon confirmation of participation forms from our customers the total samples collected will be a minimum of 100. Included are the 104 Verified Customer List.
Sample Frequency:	Every Six Months (starting July 1 – December 31, 2019)
Laboratory:	EnviroLab Birmingham Water Works Board (BWWB) 3600 Second Avenue North Birmingham, Alabama 35222
Alternate Laboratory:	Guardian Systems, Inc. 1108 Ashville Road Leeds, AL 35094

Public Water Supply Lead and Copper Sample Site Plan Selection Criteria for Community Systems

All public water supplies must complete a materials evaluation of their system to identify their pool of sample sites. Samples must be collected from Tier 1 sites unless there are not sufficient sites, then Tier 2 sites may be used. If there are not sufficient Tier 1 and 2 sites, then Tier 3 sites may be used.

Tier definitions are as follows:

- Tier 1 – includes single family structures that;
 - Contain copper pipes with lead solder which was installed after 1982 but before 1989 or;
 - Contain lead pipes or;
 - Is served by a lead service line
- Tier 2 – includes multi-family structures and buildings that;
 - Contain copper pipes with lead solder which was installed after 1982 but before 1989 or;
 - Contain lead pipes or;
 - Is served by a lead service line
- Tier 3 - includes single family structures that contain copper pipes with lead solder which were installed prior to 1983

Tier Categories - Use the following to identify the Tier and category of each site: Tier 1

- Single family – copper pipe with lead solder constructed after 1982 but before 1989
- Single family – lead pipes
- Single family – lead service

Tier 2

- Multi-family – copper pipe with lead solder constructed after 1982 but before 1989
- Multi-family – lead pipes
- Multi-family – lead service
- Building – copper pipe with lead solder constructed after 1982 but before 1989
- Building – lead pipes
- Building – lead service

Tier 3

- Single family – copper pipe with lead solder constructed before 1983

If not enough Tier 1, 2 or 3 sites are available, random sites may be chosen.

- Random location

Form 141-A Page 1 of 3

SAMPLE SITE IDENTIFICATION AND CERTIFICATION	
System's Name: _____	System Type: <input type="checkbox"/> CWS <input type="checkbox"/> NTNCWS
Address: _____ _____ _____	Number of People Served: <input type="checkbox"/> >100,000 <input type="checkbox"/> 501 to 3,300 <input type="checkbox"/> 10,001 to 100,000 <input type="checkbox"/> 101 to 500 <input type="checkbox"/> 3,301 to 10,000 <input type="checkbox"/> ≤ 100
System ID #: _____	
Contact Person: _____	Telephone number: _____
CERTIFICATION OF SAMPLING SITES	
LEAD SOLDER SITES	
# of single-family structures with copper pipes with lead solder installed after 1982 but before 1989 or lead pipes and/or lead service lines (Tier 1)	_____
# of multi-family structures with copper pipes with lead solder installed after 1982 but before 1989 or lead pipes and/or lead service lines (Tier 2)	_____
# of buildings containing copper pipes with lead solder installed after 1982 but before 1989 or lead pipes and/or lead service lines (Tier 2)	_____
# of sites that contain copper pipes with lead solder installed before 1983 (Tier 3)	_____
# of sites that do not meet Tier 1, 2, or 3 criteria <i>(to be used only if other conditions have been exhausted)</i>	_____
TOTAL	_____
<p>The following sources have been explored to determine the number of structures which have interior lead pipe or copper pipe with lead solder.</p> <p>_____ Plumbing and/or building codes</p> <p>_____ Plumbing and/or building permits</p> <p>_____ Contacts within the building department, municipal clerk's office, or State regulatory agencies for historical documentation of the service area development</p> <p>_____ Water Quality Data</p> <p>Other Resources Which PWS May Utilize</p> <p>_____ Interviews with building inspectors</p> <p>_____ Survey of service area plumbers about when and where lead solder was used from 1982 to present</p> <p>_____ Survey residents in sections of the service area where lead pipe and/or copper pipe with lead solder is suspected to exist</p> <p>_____ Interviews with local contractors and developers</p> <p>Explanation of Tier 2 and Tier 3 sites (attach additional pages if necessary) _____</p> <p>_____</p>	

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SAMPLE SITE IDENTIFICATION AND CERTIFICATION

CERTIFICATION OF SAMPLING SITES

LEAD SERVICE LINE SITES

of samples required to be drawn from lead service line sites _____
 # of samples actually drawn from lead service line sites _____
 Difference (explain differences other than zero) _____

The following sources have been explored to determine the number of lead service lines in the distribution system.

- _____ Distribution system maps and record drawings
- _____ Information collected for the presence of lead and copper as required under the Code of Federal Regulations (CFR), 40 CFR 141.42.
- _____ Capital improvement plans and/or master plans for distribution system development
- _____ Current and historical standard operating procedures and/or operation and maintenance (O&M) manuals for the type of materials used for service connections
- _____ Utility records including meter installation records, customer complaint investigations and all historical documentation which indicate and/or confirm the location of lead service connections
- _____ Existing water quality data for indications of "troubled areas"

Other Sources Which PWS Utilized

- _____ Interviews with senior personnel
- _____ Conduct service line sampling where lead service lines are suspected to exist but their presence is not confirmed
- _____ Review of permit files
- _____ Community survey
- _____ Review of USGS maps and records
- _____ Interviews with pipe suppliers, contractors, and/or developers

Explanation of fewer than 50% LSL sites identified (attach additional pages if necessary): _____

CERTIFICATION OF COLLECTION METHODS

I certify that:

- Each first draw tap sample and each lead service line sample for lead and copper is 1 liter in volume and has stood motionless in the plumbing system of each sampling site for at least 6 hours.
- Each first draw sample collected from a single-family residence has been collected from the cold water kitchen tap or bathroom sink tap.
- Each first draw sample collected from a non-residential building has been collected at an interior tap from which water is typically drawn for consumption.
- Each lead service line sample has been collected by a BWWB employee using the Temperature Variation procedure.
- Each resident who volunteered to collect tap water samples from his or her home has been properly instructed by the Birmingham Water Works Board in the proper methods for collecting lead and copper samples. I do not challenge the accuracy of those sampling results. Enclosed is a copy of the material distributed to residents explaining the proper collection methods, and a list of the residents who performed sampling.
- Each first-draw sample collected during an annual or triennial monitoring period has been collected in the months of June, July, August, or September or in the alternate period specified by the State. Samples collected during biannual collection will be collected during January-June and July-December.

Making Changes to Sampling Site Locations

Assess your ability to sample a sufficient number of appropriate sites from your lead and copper plan well in advance of the monitoring period. Contacting the resident early and determining whether their home still meets the selection criteria as a sample location will eliminate this variable. Furthermore, lead and copper samples should be collected early in the monitoring period to ensure samples arrive at the lab in a timely fashion and are analyzed well before the end of the monitoring period.

Changes to sampling sites are allowed when water systems can no longer gain access to the site or if the original site location no longer meets the Tier selection criteria. For example, if a home is vacant or demolished, if a softener is added or plumbing upgrades have been made - the structure no longer meets the Tier criteria.

Changes in locations must be submitted to the ADEM prior to sampling. Your lead and copper plan must be updated whenever there is an addition or deletion of a site and you are also encouraged to update the plan to identify sites that meet the requirements of proper sampling locations that can be readily substituted if needed during future monitoring events.



Lead and Copper Study

Sample Collection Procedures

Directions for the Sample Collected at the Homeowners Tap

The samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency (EPA) and the Alabama Department of Environmental Management (ADEM) under the Lead and Copper Rule and is being accomplished through this collaboration between the Birmingham Water Works Board and you, our valued customer.

Please collect a wide mouth bottle 1-liter sample from a faucet that has not been used for a period of at least 6 hours. The best time to collect the sample is early in the morning or in the evening upon returning home from work. This will ensure the necessary stagnant conditions exist prior to collection. Be sure to use the cold water tap of a faucet in either the kitchen or bathroom that has been commonly used for drinking water consumption during the past few weeks.

The Collection Procedures are described below:

1. We will make arrangements with you, the customer, to coordinate the sample collection. The date and times for delivery and pick-up of the sample kit will be scheduled by our BWWB staff.
2. There must be a minimum of 6 hours of non-use (toilet flushing, showering, brushing teeth, etc.) at the faucet where the sample is to be collected and any taps adjacent or close to that tap. Either early mornings or evenings upon returning home are the best sampling times. Do not intentionally flush or use the selected water line before the start of the 6-hour stagnant period prior to collection.
3. If you do have a water softener or water filter installed in home or on the faucet, contact the Birmingham Water Works Board before you collect a sample for further instructions.
4. Use a kitchen or bathroom COLD water faucet for sampling. Do not remove the aerator prior to sampling. Place the opened sample bottle below the faucet and open the cold water tap as you would do to fill a glass of water. Fill the sample bottle to the top, and then turn off your water.
5. Make sure to tighten the bottle cap and place it into the provided sample kit bag. Review the label to ensure that all your information on the label is correct.
6. If plumbing repairs and/or replacements have been made within the previous 3 years, please make note of it in addition to if sampled from a faucet connected to a filter or a water softener.
7. Place the sample kit in the same location it was delivered so that our BWWB staff can easily collect it.
8. All the results and information generated from this monitoring will be provided to you no later than 30 days after we learn of the monitoring results. However, if excessive lead and/or copper levels are found, you will be notified immediately. This usually will be 1 to 2 working days after learning the monitoring results of the collected sample.

If you have any questions regarding these instructions, please don't hesitate to call Ms. Green at (205) 244-4381 in the Water Quality Operations Department.



Lead and Copper Study Lead Service Line Sample Collection Procedures

Directions for Lead Service Line Collection performed by BWWB

The Collection Procedures are described below:

1. Coordinate with the customer on a date and time for sample ordination.
2. There must be a minimum of 6 hours of non-use (toilet flushing, showering, brushing teeth, etc.) at the faucet where the sample is to be collected and any taps adjacent or close to that tap. Either early mornings or afternoons before the customer returns home are the best sampling times. Do not intentionally flush or use the selected water line before the start of the 6-hour stagnant period prior to collection.
3. Samples will be collected using the **Temperature Variation** procedure. Collect sample by gently opening the tap and running the water at a normal flow rate, keeping a hand or finger under the flowing water. When a change in water temperature is detected, a 1-liter sample should be collected by filling the wide mouth sample bottle to the appropriate level and capping.
4. Chain of custody should be completed and sample returned to the EnviroLab for analysis.

If you have any questions regarding these instructions, please don't hesitate to call Ms. Green at (205) 244-4381 in the Water Quality Operations Department.



**PLEASE USE
BLACK INK**

2019 Lead and Copper Study

SAMPLE COLLECTION FORM (INSTRUCTIONS)

******PLEASE ENCLOSE THIS SHEET WITH YOUR SAMPLE******

WATER WAS LAST USED: _____ / _____ / 2019 _____ AM / PM
Month Day Time

**6 - 18 HOURS from
last time used**

SAMPLE WAS COLLECTED: _____ / _____ / 2019 _____
Month Day Time

SAMPLE LOCATION & FAUCET (e.g. Bathroom sink): **PLEASE PRINT**

Customer's Address: _____ **PLEASE PRINT**

- Check box if sample and form are enclosed in the sample kit.
- Check box if you have a water filtering or whole home filtration system.
- Check box if you have a water softening system.

I have read and understand the sampling directions. I have taken a tap sample in accordance with these directions.

**Samples must be submitted within 24 hours of collection.
Fill bottle to the top**

Customer's Signature

Date

Customer's Name (PLEASE PRINT)

BWWB Employee's Signature

Date/Time of Sample Pick-Up



#1

2019 Lead and Copper Study
SAMPLE COLLECTION FORM

******PLEASE ENCLOSE THIS SHEET WITH YOUR SAMPLE******

WATER WAS LAST USED: _____/_____/2019 _____AM / PM
Month Day Time

SAMPLE WAS COLLECTED: _____/_____/2019 _____AM / PM
Month Day Time

SAMPLE LOCATION & FAUCET (e.g. Bathroom sink): _____

Customer's Address: _____

- Check box if sample and form are enclosed in the sample kit.
- Check box if you have a water filtering or whole home filtration system.
- Check box if you have a water softening system.

I have read and understand the sampling directions. I have taken a tap sample in accordance with these directions.

Samples must be submitted within 24 hours of collection.
 Fill bottle to the top

Customer's Signature

Date

Customer's Name (PLEASE PRINT)

BWWB Employee's Signature

Date/Time of Sample Pick-Up

Reporting Form (Sample)

Lead Monitoring Data Report

System Name and PWSID # _____

Monitoring Period _____

Name and Address of Customer	Tier 1, 2, or 3	Lead Service Line Sample (yes or No)	Date of Collection	Date of Analysis	Lead Results (mg/l)	Year of Plumbing
Customer Address City						
Customer Address City						
Customer Address City						
Customer Address City						
Customer Address City						
Customer Address City						
Customer Address City						

Lead & Copper Action Level Exceedance Guidelines

All water systems with an action level exceeding a lead or copper compliance limit shall install and properly operate optimum corrosion control processes continuously to reduce the potential for lead or copper exposure by the consumers (335-7-11-.11). Within six months of exceeding the compliance limit a system shall provide a detailed report indicating the process and equipment to be used to provide corrosion control treatment. Installation and startup of the equipment must be completed within 24 months of approval from the Alabama Department of Environmental Management (ADEM). A corrosion control treatment study may be required by ADEM to determine the optimum process to be installed. Existing corrosion control processes prior to the effective date of these regulations and acceptable to ADEM may have the treatment study requirements waived. The corrosion control treatment study shall be completed and submitted along with a proposal for the process to be used to ADEM within 12 months of exceeding a compliance limit. This report must include a proposed construction schedule for installation of the equipment. This project must be completed no more than 24 months after the study submittal. Corrosion control treatment processes shall be monitored during the next two consecutive six-month compliance periods. The water in a water system is considered to meet optimum corrosion control when the distribution system:

1. Water quality parameters reflected on the Baylis Curve indicates no incrusting or corrosion will occur,
or
2. The Langelier Index of the water is between -1.0 to +2,
3. The Ryznar Index is between 7 and 11,
4. A phosphate or silicate corrosion inhibitor is continuously applied at the manufacturer/supplier recommended level resulting in minimum complaints, or
5. The Calcium Carbonate Precipitation Potential (CCPP) is maintained between 4-10 mg/l, and
6. The water continuously meets the lead and copper compliance limits.

Lead & Copper Corrosion Control Study

Purpose: Systems exceeding the lead and copper compliance limit may be required to conduct and submit a corrosion control study to determine the optimum corrosion control process to minimize exposure of lead and copper to the consumers. The study shall evaluate the effectiveness of each of the following treatment processes and if appropriate, any combination of these processes:

1. Alkalinity and pH adjustment,
2. Calcium hardness adjustment, and
3. The addition of a phosphate or silicate-based corrosion inhibitor.

The study shall use either a pipe-loop test, metal coupon test, partial system test, or analysis based on documented treatment activities from other water systems with similar water chemistry, similar system size, and same distribution system configuration.

The following water quality parameters shall be measured during the test conducted to allow proper evaluation of the processes:

1. Lead
2. Copper
3. pH
4. Total alkalinity
5. Calcium
6. Conductivity
7. Orthophosphate (when a phosphate inhibitor is evaluated)
8. Silicate (when a silicate compound is evaluated)
9. Water temperature

The study shall identify all chemical or physical constraints that may limit or prohibit the use of a particular corrosion treatment method, identify any previously used corrosion control treatment that was found ineffective, or adversely affected any treatment processes; evaluate the effect of the proposed chemicals to be used on the water quality treatment processes demonstrating adequate corrosion control; and provide a recommendation of the proposed process to be installed. Information to be included with the recommended process shall include cost of the proposed installation, equipment to be used including model number and brand, chemical to be added including proposed concentration rate, NSF approval document; and availability information on the chemical and a construction schedule demonstrating the equipment can be operational within 24 months of the study submittal. Lead and copper monitoring shall continue each six-month compliance period from the date the parameter values are set.

Lead & Copper Source Water Monitoring and Treatment

Any water system which exceeds the lead or copper compliance limit must analyze the treated water for the contaminant using the same methodology and location as required for inorganic contaminants in each source used by the system (335-7-11-.15). This analysis must be completed within 180 days after the exceedance. Should these levels exceed 0.015 mg/l lead or 1.3 mg/l copper, confirmation monitoring must be collected within 7 days. The value of the initial and all confirmation monitoring will be averaged. Treatment modifications must be installed which will result in the finished water meeting the drinking water standard. Unless written approval by ADEM is given, the source will be taken out of service within 60 days and remain out of service until these additional treatment requirements are provided. Prior to reactivation of this source, monitoring of the treated water shall demonstrate compliance with drinking water standards and a second set of lead and copper monitoring conducted in six months. All initial sites for lead and copper shall be monitored for the next two six-month compliance periods. Modifications to the treatment process must be approved and permitted by ADEM.

Lead Service Line Replacement

Systems which exceed the compliance limit for lead shall identify the number and location of lead service lines and develop and implement a removal action plan (ADEM 335-7-11-.16). The plan shall identify the number of lines, including an identification of the portion owned by the system, general distribution locations, cost of replacement, proposed disposal site for removed lines, and a time schedule for removal. This plan shall be provided within six months of exceeding the compliance limit and shall be implemented within twelve months of the end of the monitoring period in which the exceedance occurred. If the monitoring frequency is annual or less, the end of the monitoring period is September 30 of the year in which the sampling occurred. The plan shall provide for full replacement of all services lines, except those excluded in the following subparagraphs, within 15 years.

1. At least 7% of the initial number of lead service lines shall be replaced annually. Lead service lines which have demonstrated to meet the compliance limit for lead through service line monitoring can be excluded from the process. The state may require a water system to replace more than 7% of the lead service lines annually.
2. The plan shall clarify the legal ownership of service lines. If the customer owns a lead service line, BWWB must notify the customer of its existence and offer to replace that service line for a fair and equitable cost.
3. Service line replacement may cease when two consecutive monitoring periods of first draw samples collected from lead service lines are meeting the compliance limit due to enhanced corrosion control activity.
4. The entire length of a service line does not require replacement if the following is adhered to:

At least 45 days prior to commencing with the partial replacement of a lead service line, BWWB shall provide notice to the residents of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. ADEM may allow notice less than 45 days prior to commencing partial lead service line replacement where such replacement is done in conjunction with emergency repairs. In addition, BWWB shall inform the residents served by the line that the BWWB will, at BWWB's expense, collect a sample for a lead analysis from each partially replaced lead service line within 72 hours after the completion of the partial

replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the residents served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."

BWWB shall provide the required information to the residents of individual dwellings by mail or by other methods approved by ADEM. In instances where multi-family dwellings are served by the line, BWWB shall have the option to post the information at a conspicuous location.

The process of replacing service lines may cease when it can be demonstrated through two consecutive monitoring periods that first tap draw monitoring conducted from lead service lines are meeting the compliance limit due to enhanced corrosion control activity.

Delivery of Public Education Materials for Lead Exceedance

Public education for non-English speaking consumers must be in the appropriate language(s).

1. Printed materials shall be provided to all bill paying customers.
2. Within 60 days of the end of the monitoring period in which the exceedance occurred, public education must be conducted.
3. Consumers who are at the most risk shall have educational materials delivered to local public health agencies even if they are not located within the service area, along with an informational notice that encourages distribution to all potentially affected customers or water system users.
 - A. The local public health agencies must be contacted by phone or in person.
 - B. The required public educational materials must be provided to all organizations provided by the local public health agencies that target the affected populations. This list may include organizations inside or outside of the service area.
 - C. BWWB shall request a list of organizations from public health agencies, including ones not in the service area, and provide these organizations with the educational materials and informational notices that encourage distribution to all potentially affected customers.
 - (i) Licensed childcare centers.
 - (ii) Public and private preschools.
 - (iii) Obstetricians-Gynecologists and Midwives.
4. Consumers who are at the most risk must have educational materials delivered to the following organizations that are located within the service area along with an informational notice that encourages distribution to all the potentially affected consumers:
 - (i) Public and private schools or school boards;
 - (ii) Women, Infants and Children (WIC) and Head Start Programs;
 - (iii) Public and private hospitals and medical clinics;
 - (iv) Pediatricians;
 - (v) Family planning clinics; and,
 - (vi) Local welfare agencies.
5. Each quarter the lead action level is exceeded, each customer shall be provided with public notice. Sentence A below (exactly as written) shall be included on at least one water bill each quarter.
 - A. The Birmingham Water Works Board found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call The Birmingham Water Works Board or visit www.bwwb.org.

- B. BWWB must submit a press release to all newspapers, television and radio stations that service the BWWB service area.
- C. From the list of categories below, at least three activities must be selected and implemented. The selection of activities and educational content shall be approved by ADEM prior to implementation.
 1. Public service announcements.
 2. Paid advertisements.
 3. Public area information displays.
 4. E-mails to customers.
 5. Public meetings.
 6. Household deliveries.
 7. Targeted individual customer contact.
 8. Direct material distribution to all multi-family homes and institutions.
 9. Other methods as approved by ADEM.
6. Continued exceedance shall trigger repeat of the activities in the above section “Delivery of Public Education Materials for lead exceedance” as follows:
 - (a) Repeat the tasks contained in paragraph 2 and 5C of this section every 12 month.
 - (b) Repeat the tasks contained in subparagraph 5A of this section with each billing cycle.
 - (c) Maintain on a publicly accessible website a copy of all public educational material required under paragraph 4 until the action level is no longer exceeded.
 - (d) Repeat the tasks contained in subparagraph 5B twice every 12 months on a schedule approved by ADEM.
7. Delivery of public educational materials may be discontinued if the action level has not been exceeded during the most recent six-month monitoring period conducted in accordance with this section.
8. BWWB shall offer to sample the tap water of any customer who requests it if the action level is exceeded. BWWB is not required to pay for collecting or analyzing the sample, nor is BWWB required to collect and analyze the sample itself.

APPENDICES

Customer Participation Letter (*Sample*)



THE BIRMINGHAM
WATER WORKS BOARD
WATER QUALITY OPERATIONS

February 13, 2019

The Birmingham Water Works Board Water Quality Operation
3507 Messer Airport Hwy
Birmingham AL, 35222

Customer Name Customer Address

Dear Customer:

The Birmingham Water Works Board is required by the Environmental Protection Agency, EPA, and the Alabama Department of Environmental Management, ADEM, to measure lead and copper levels in our drinking water. We are seeking your participation in our area wide monitoring program to test for the presence of lead and copper in our drinking water. Lead and copper primarily enter the drinking water system through corrosion of lead pipes, plumbing fittings, fixtures and solder.

The sampling for this program will begin in July of 2019. If you would like to volunteer to participate in this ongoing program, please return the enclosed participation card. To verify that your home meets the requirements and to discuss your home's specific internal plumbing, a Birmingham Water Works employee will contact you by phone and conduct a brief survey before any water samples are collected. If the information indicates that your home is ideal location for sample collection we will schedule a date and time for a BWWB employee to come to your home and collect the sample. After the sample has been analyzed by the approved laboratory, the lead and copper results will be provided to you at the completion of the area wide testing.

If you live in a single-family home that contains copper pipes with lead solder installed after 1982 but before 1989 or contains lead pipes, or your house was built before 1945 please contact our water system to request to be a part of this important water testing program. To achieve the level of participation required by ADEM, a total of 100 samples must be collected, analyzed, and submitted. Therefore, it is vital that we know if you are willing participate at your earliest convenience.

The Birmingham Water Works effectively treats the water to reduce its corrosivity when it is processed at our water treatment plants. Our lead and copper levels have consistently tested below the EPA's action level and with your help, this year's results will continue to confirm that our water is among the best in the country. Again, please fill out the enclosed participation card and return it to us so that we may contact you and begin the sample collection process. For your participation, we would like to give you a token of appreciation for partnering with us on our 2019 Lead & Copper monitoring program.

Sincerely yours,

Will T. Moore Superintendent,
Water Quality Operations

Consumer Monitoring Results Letter (Sample)



Insert Date

«First_Name» «Last_Name»
 «Address_Line_1»
 «City» «State» «ZIP_Code»

RE: Lead and Copper Monitoring Results

Dear Customer:

Thank you for participating in the Lead and Copper Sampling Program. We are providing you with a copy of the lead and copper monitoring results for your residence. The samples were collected on «Country_or_Region» and are reported in parts per billion (ppb).

Contaminate	Action Level	Unit of Measure	Results at your home	Compliance Violation
Lead	15	ppb		Yes/No
Copper	1300	ppb		

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water and other sources. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones which may affect brain development.

Steps to Reduce Lead Exposure

Flush your pipes before drinking and only use cold water for consumption. The longer that water sits in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer.

Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. The actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, **NOT** from the local water supply. More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.

Maximum Contaminate Level Goal (MCLG), Minimum Detection Limit (MDL), and Action Level (AL)

The **MCLG** is 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. The **MDL** is the minimum concentration that can be measured with 99% confidence that the concentration's greater than zero (0). An **AL** is the concentration of a contaminant that triggers treatment or other requirements a water system shall follow. The MCLG for lead is 0 ppb and for copper is 1,300 ppb. The **AL** for lead is 15 ppb and for copper is 1,300 ppb.

If you have any questions or would like additional information, please contact Drusilla Hudson at (205) 244-4466.

Sincerely,

Drusilla Hudson, MTh, REM, CESCO
 Manager; EnviroLab, Water Quality & Regulatory Compliance

Lead Action Level Exceedance Public Education (Sample)

«First_Name» «Last_Name»
 «Address_Line_1»
 «City» «State» «ZIP_Code»

RE: Lead Monitoring Results

Dear Customer:

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. The Birmingham Water Works Board found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, and water. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion or wearing away of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipe made of lead that connect your house to the water main (service lines). Beginning in 2014, materials, devices, and components used to supply water for human consumption must meet the new "lead-free" requirement of 0.25%. The previous "low Lead" requirement was 8%. Any materials used for installation or repair must be lead-free, including pipes, pipe fittings, plumbing fittings, and plumbing fixtures.

[Reasons for elevated lead levels in drinking water and what BWWB is doing to correct the problem]

Steps to Reduce Lead Exposure

Flush your pipes before drinking and only use cold water for consumption. The longer that water sits in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. Boiling water **does not** reduce lead levels. Additional steps to reduce your exposure to lead include: purchasing or leasing a home treatment device, purchasing bottled water for drinking and cooking. The actions recommended above are very important to the health of your family. If you are concerned that your child may have been exposed to lead, your family doctor or pediatrician can perform a blood test for lead.

For additional information, please contact Drusilla Hudson, at (205) 244-4466 or visit our website www.bwwb.org. More information on lead in drinking water is available on the US EPA web site at <http://www.epa.gov/safewater>.

The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead.

The Birmingham Water Works Board
(205) 244-4466

Guardian Systems – Leeds Alabama
(205) 699-6647

Sincerely,

Drusilla Hudson, MTh, REM, CESCO
Manager; EnviroLab, Water Quality & Regulatory Compliance

Lead Action Level Exceedance Public Notification (Sample)

BIRMINGHAM
WATER WORKS

Insert Date

«First_Name» «Last_Name»
«Address_Line_1»
«City» «State» «ZIP_Code»

RE: Lead and Copper Monitoring Results

Dear Customer:

The Alabama Department of Environmental Management (ADEM) and The Birmingham Water Works Board are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by **(insert date when corrosion control program will be completed)**. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace each lead service line that we control if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation, please give us a call at (205) 244-**_____**. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

Health effects of lead. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that will not hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination such as dirt and dust that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

Lead in Drinking Water. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 per cent or more of a person's total exposure to lead. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipe made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

Steps You Can Take in the Home to Reduce Exposure to Lead in Drinking Water. Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call (205) 244-**_____**.

If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold-water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than (insert a cost estimate based on flushing two times a day for 30 days) per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

Try not to cook with or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Water Supply Branch of ADEM about the violation.

Determine whether the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You may be able to identify the plumbing contractor by checking the record of building permits which should be maintained in the files of the (insert name of department that issues building permits). A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially controlled by the Birmingham Water Works Board, we are required to provide you the owner of the privately-owned portion of the line with information on how to replace your privately-owned portion of the service line, and offer to replace that portion of the line at the owner's expense and take a follow-up tap water sample within 14 days of the replacement. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

Purchase bottled water for drinking and cooking.

You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

The Birmingham Water Works Board (205) 244- [redacted] can provide you with information about your community's water supply. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's website at <http://www.epa.gov/lead> or contact your health care provider.

(name of city or county department that issues building permits) at (205- [redacted] - [redacted]) can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

The Alabama Department of Public Health at 1-800-ALA-1818 or the [redacted] County Health Department at 205- [redacted] - [redacted] can provide you with information about the health effects of lead and how you can have your child's blood tested.

The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead.

Birmingham Water Works Board
(205) 244-4464

Guardian Systems – Leeds Alabama
(205) 699-6647

Pace Laboratory
(205) 345-0816

Consumer Certification Letter (Sample)



Insert Date

Mr. Jack Mobley
Drinking Water Branch
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463

Lead and Copper Certification of Delivery Dear

Mr. Mobley

As required by State law, we are providing you with a sample copy of the lead and copper monitoring results letter that was sent to each customer whose residence was sampled for lead and copper.

I hereby certify that each residence where lead and copper tap water monitoring was collected has been informed of the results of said monitoring and that the notice (sample copy attached) contains all the information as required in ADEM Admin. Code r. 335-7-11.17(1)(a). Each customer was provided the results within 30 days of the water system receiving the results from the laboratory. The information was provided to each customer by direct mailing or hand delivery as deemed appropriate to ensure that all persons receiving the water at said location received notification of the results.

If you have any questions, please contact me at (205) 244-4000.

Sincerely,

Drusilla A. Hudson, MTh, REM, CESCO
Manager of Envirolab, Water Quality
And Regulatory Compliance

Materials Inventory

Materials Inventory for Service Lines (Water Main to Meter Setting)			
As of Year-2019	Number of Services by Material		
Installed Date	Type of Pipe Material	Total	Percentage (%)
Prior to 1945 - (Estimated number of service lines installed prior to 1945 that have not been changed)	Lead, Galvanized Steel, Partial Lead, Cast Iron, (See Note)	16,800	7.4%
After 1945	Galvanized Steel, Copper, PVC, Ductile Iron, PEX, HDPE, other	210,582	92.6%
TOTAL		227,382	100%

NOTE:

*Total number of service lines in the table includes active and in-active service lines.

Materials Inventory for Water Meters				
As of Year-2019	Number of Meters by Category			
Water Meter Sizes	No Lead	Low Lead Brass (< 0.25%)	Leaded Brass (< 8%)	Total
Less than 2-inch (Residential)	36,906	52,976	100,519	190,401
2-inch and Larger (Commercial)	4,017		6	4,023
TOTAL	40,923	52,976	100,525	194,424

NOTE: Numbers subject to change

- No Lead = 0% Lead Content
- Low Lead Brass = Up to 0.25% Lead Content in wetted materials
(Compliant to current standards of the SDWA Lead Levels)
- Leaded Brass = Up to 8.0% Lead Content in wetted materials
(Compliant to the pre-2014 standards of the SDWA Lead Levels)

Materials Inventory for Water Mains			
As of Year-2019			
Water Main Material	Quantity (Miles)	Percentage (%)	Notes
Cast Iron (Unlined)	250.82	6.3%	Some old cast iron may be lead-jointed. Quantity unknown.
Cast Iron (Cement Lined)	1217.44	30.9%	No issues believed based upon the cement lining
Galvanized Steel	296.95	7.5%	No lead content in galvanized steel pipe
Ductile Iron (Cement Lined)	1867.65	47.3%	No issues believed based upon the cement lining
Ductile Iron (Unlined)	5.02	0.1%	No issues based on pipe material
PVC	290.75	7.4%	No issues based on pipe material
Concrete	9.76	0.25%	No issues based on pipe material
Other (Copper, Steel, Stainless Steel, Zinc Ductile Iron Cement Lined, PEX, Unknown)	7.93	0.24%	No issues based on pipe material
Valves, Fittings, etc.			Older materials may contain lead of unknown content
TOTAL	3,946.32	100	

Verified Sampling Sites				
	Address	Tier	Year of Plumbing	Material of Construction
1	1 11TH CT N	I	1901	Lead/Partial Lead
2	1012 15TH WAY SW	I	1901	Lead/Partial Lead
3	1104 2ND ST N	I	1901	Lead/Partial Lead
4	1112 15TH PL SW	I	1901	Lead/Partial Lead
5	1112 2ND ST N	I	1901	Lead/Partial Lead
6	1114 2ND ST N	I	1901	Lead/Partial Lead
7	1120 15TH WAY SW	I	1901	Lead/Partial Lead
8	1121 15TH PL SW	I	1901	Lead/Partial Lead
9	1444 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
10	1488 PEARSON AVE SW	I	1901	Lead/Partial Lead
11	1556 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
12	1568 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
13	2337 COURT R	I	1901	Lead/Partial Lead
14	2714 ENSLEY AVE	I	1901	Lead/Partial Lead
15	4111 10TH AVE	I	1901	Lead/Partial Lead
16	4415 5TH AVE	I	1901	Lead/Partial Lead
17	828 LOMB AVE SW	I	1901	Lead/Partial Lead
18	1437 45TH ST	I	1912	Lead/Partial Lead
19	4108 9TH AVE	I	1912	Lead/Partial Lead
20	4309 ALTAMONT RD	I	1912	Lead/Partial Lead
21	4722 9TH AVE	I	1912	Lead/Partial Lead
22	4112 7TH AVE	I	1916	Lead/Partial Lead
23	608 COURT T	I	1916	Lead/Partial Lead
24	808 FINLEY AVE W	I	1916	Lead/Partial Lead
25	912 18TH WAY SW	I	1916	Lead/Partial Lead
26	4104 9TH AVE	I	1918	Lead/Partial Lead
27	4212 10TH AVE S	I	1920	Lead/Partial Lead
28	1325 31ST STREET N	I	1921	Lead/Partial Lead
29	708 ERIE ST	I	1921	Lead/Partial Lead
30	811 5TH PL	I	1921	Lead/Partial Lead
31	815 5TH PL	I	1921	Lead/Partial Lead
32	3361 31ST WAY N	I	1922	Lead/Partial Lead
33	4311 CLAIRMONT AVE S	I	1922	Lead/Partial Lead
34	810 ESSEX RD	I	1922	Lead/Partial Lead
35	844 ESSEX RD	I	1922	Lead/Partial Lead
36	1459 22ND ST N	I	1923	Lead/Partial Lead
37	2303 14TH AVE N	I	1923	Lead/Partial Lead
38	1229 ETOWAH ST	I	1924	Lead/Partial Lead
39	3028 PRINCE AVE	I	1924	Lead/Partial Lead

Verified Sampling Sites				
	Address	Tier	Year of Plumbing	Material of Construction
40	4646 13TH AVE N	I	1925	Lead/Partial Lead
41	917 18TH WAY SW	I	1925	Lead/Partial Lead
42	1986 SHADES CREST RD	I	1926	Lead/Partial Lead
43	1145 15TH WAY SW	I	1927	Lead/Partial Lead
44	200 WINDSOR DR	I	1927	Lead/Partial Lead
45	206 WINDSOR DR	I	1927	Lead/Partial Lead
46	218 DEVON DR	I	1927	Lead/Partial Lead
47	222 DEVON DR	I	1927	Lead/Partial Lead
48	2840 HASTINGS RD	I	1927	Lead/Partial Lead
49	424 NORFOLK LN	I	1927	Lead/Partial Lead
50	1728 PRATT HWY	I	1928	Lead/Partial Lead
51	2508 AVENUE L	I	1928	Lead/Partial Lead
52	2516 AVENUE L	I	1928	Lead/Partial Lead
53	2600 AVENUE L	I	1928	Lead/Partial Lead
54	2620 AVENUE L	I	1928	Lead/Partial Lead
55	2820 SURREY RD	I	1928	Lead/Partial Lead
56	2826 SURREY RD	I	1928	Lead/Partial Lead
57	2915 CANTERBURY RD	I	1929	Lead/Partial Lead
58	3001 CANTERBURY RD	I	1929	Lead/Partial Lead
59	612 MANCHESTER LN	I	1929	Lead/Partial Lead
60	615 WARWICK RD	I	1929	Lead/Partial Lead
61	945 46TH ST ENSLEY	I	1929	Lead/Partial Lead
62	2520 AVENUE L	I	1939	Lead/Partial Lead
63	2309 22ND ST	I	1924	Lead/Partial Lead
64	1804 FOREST DR	I	1983	Copper
65	102 SPRING GLADE CIR	I	1983	Copper
66	1248 STONECREST DR	I	1983	Copper
67	1503 WILDERNESS LN	I	1983	Copper
68	1504 PAVILLON DR	I	1983	Copper
69	1551 WILDERNESS LANE	I	1983	Copper
70	17 POLARIS CIR	I	1983	Copper
71	1808 FOREST DR	I	1983	Copper
72	1816 FOREST DR	I	1983	Copper
73	1917 RIVER WAY DR	I	1983	Copper
74	2001 Bridge Lake Drive	I	1983	Copper
75	208 HONEYBEE CIR	I	1983	Copper
76	2550 TORRANCE RD	I	1983	Copper
77	5202 HEATHERHEDGE CIR	I	1983	Copper
78	1196 Riverchase Parkway	I	1984	Copper
79	1200 GRAND BLVD	I	1984	Copper

Verified Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
80	1232 COUNTRY CLUB CIR	I	1984	Copper
81	1517 ASTRE CIRCLE	I	1984	Copper
82	1765 BIG MOUNTAIN DR	I	1984	Copper
83	2005 LARGIN RD	I	1984	Copper
84	2011 WILDFLOWER DR	I	1984	Copper
85	2013 SHAGBARK RD	I	1984	Copper
86	2574 REDWOOD LN	I	1984	Copper
87	5377 MEADOW BROOK DR	I	1984	Copper
88	897 DUNWOODY LANE (901 DUNRIDGE DR)	I	1985	Cooper
89	2547 ASPEN COVE DR	I	1985	Copper
90	3206 MOUNTAIN RIDGE CIR	I	1985	Copper
91	3512 Water Oak Drive	I	1985	Copper
92	3759 POP STONE CIR	I	1985	Copper
93	625 LIVE OAK CIR	I	1985	Copper
94	888 DUNRIDGE DR	I	1985	Copper
95	8941 JADE LAKE RD	I	1985	Copper
96	909 Thomas Drive	I	1985	Copper
97	934 HITCHING POST LN	I	1985	Copper
98	1917 Forest Knoll Drive	I	1986	Copper
99	5399 HARVEST RIDGE LN	I	1986	Copper
100	8013 MARSH MOUNTAIN RD	I	1986	Copper
101	4370 CLIFF RD	I	1987	Copper
102	8742 CENTRAL RD	I	1987	Copper
103	1508 KESTWICK DR	I	1987	Copper
104	936 DUNRIDGE DR	I	1985	Copper

Sampling Sites				
	Address	Tier	Year of Plumbing	Material of Construction
1	3354 31ST WAY N	I	1901	Lead/Partial Lead
2	3343 31ST WAY N	I	1922	Lead/Partial Lead
3	3361 31ST WAY N	I	1922	Lead/Partial Lead
4	3363 31ST WAY N	I	1922	Lead/Partial Lead
5	3452 31ST WAY N	I	1923	Lead/Partial Lead
6	3616 HUNTSVILLE RD	I	1924	Lead/Partial Lead
7	3334 31ST WAY N	I	1924	Lead/Partial Lead
8	3510 HUNTSVILLE RD	I	1924	Lead/Partial Lead
9	3364 31ST WAY N	I	1924	Lead/Partial Lead
10	4421 5TH AVE	I	1901	Lead/Partial Lead
11	4405 5TH AVE	I	1901	Lead/Partial Lead
12	4417 5TH AVE	I	1901	Lead/Partial Lead
13	4415 5TH AVE	I	1901	Lead/Partial Lead
14	4409 5TH AVE	I	1901	Lead/Partial Lead
15	4114 8TH AVE	I	1901	Lead/Partial Lead
16	501 LEXINGTON ST	I	1901	Lead/Partial Lead
17	4704 9TH AVE	I	1901	Lead/Partial Lead
18	4109 9TH AVE	I	1901	Lead/Partial Lead
19	1024 ERIE ST	I	1901	Lead/Partial Lead
20	4107 10TH AVE	I	1901	Lead/Partial Lead
21	4111 10TH AVE	I	1901	Lead/Partial Lead
22	1008 ERIE ST	I	1901	Lead/Partial Lead
23	4107 9TH AVE	I	1901	Lead/Partial Lead
24	4108 9TH AVE	I	1912	Lead/Partial Lead
25	4113 8TH AVE	I	1912	Lead/Partial Lead
26	4720 9TH AVE	I	1912	Lead/Partial Lead
27	4722 9TH AVE	I	1912	Lead/Partial Lead
28	921 KNOXVILLE PL	I	1914	Lead/Partial Lead
29	923 KNOXVILLE PL	I	1914	Lead/Partial Lead
30	912 ERIE ST	I	1914	Lead/Partial Lead
31	4319 5TH AVE	I	1916	Lead/Partial Lead
32	4112 7TH AVE	I	1916	Lead/Partial Lead
33	4120 10TH AVE	I	1916	Lead/Partial Lead
34	924 ERIE ST	I	1916	Lead/Partial Lead
35	915 KNOXVILLE PL	I	1918	Lead/Partial Lead
36	4104 9TH AVE	I	1918	Lead/Partial Lead
37	4600 12TH AVE	I	1920	Lead/Partial Lead
38	909 KNOXVILLE PL	I	1920	Lead/Partial Lead
39	911 KNOXVILLE PL	I	1920	Lead/Partial Lead
40	4506 12TH AVE	I	1920	Lead/Partial Lead
41	910 KNOXVILLE PL	I	1920	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
42	4608 12TH AVE	I	1921	Lead/Partial Lead
43	4714 9TH AVE	I	1921	Lead/Partial Lead
44	4100 9TH AVE	I	1921	Lead/Partial Lead
45	708 ERIE ST	I	1921	Lead/Partial Lead
46	4119 10TH AVE	I	1922	Lead/Partial Lead
47	4115 10TH AVE	I	1923	Lead/Partial Lead
48	914 KNOXVILLE PL	I	1923	Lead/Partial Lead
49	4112 10TH AVE	I	1923	Lead/Partial Lead
50	4118 10TH AVE	I	1923	Lead/Partial Lead
51	928 ERIE ST	I	1924	Lead/Partial Lead
52	2600 COURT R	I	1901	Lead/Partial Lead
53	2710 ENSLEY AVE	I	1901	Lead/Partial Lead
54	2341 COURT R	I	1901	Lead/Partial Lead
55	2816 AVENUE R	I	1901	Lead/Partial Lead
56	1717 26TH ST	I	1901	Lead/Partial Lead
57	1735 27TH ST	I	1901	Lead/Partial Lead
58	2714 ENSLEY AVE	I	1901	Lead/Partial Lead
59	1827 PIKE RD	I	1901	Lead/Partial Lead
60	2617 COURT R	I	1901	Lead/Partial Lead
61	1829 PIKE RD	I	1901	Lead/Partial Lead
62	1741 26TH ST	I	1901	Lead/Partial Lead
63	1857 PIKE RD	I	1901	Lead/Partial Lead
64	1729 26TH ST	I	1901	Lead/Partial Lead
65	2609 COURT R	I	1901	Lead/Partial Lead
66	1721 26TH ST	I	1901	Lead/Partial Lead
67	1821 28TH ST	I	1901	Lead/Partial Lead
68	1739 27TH ST	I	1901	Lead/Partial Lead
69	2600 ENSLEY AVE	I	1901	Lead/Partial Lead
70	1540 27TH ST	I	1901	Lead/Partial Lead
71	1701 27TH ST	I	1901	Lead/Partial Lead
72	1733 26TH ST	I	1901	Lead/Partial Lead
73	1708 26TH ST	I	1901	Lead/Partial Lead
74	1608 27TH ST	I	1901	Lead/Partial Lead
75	2601 ENSLEY AVE	I	1901	Lead/Partial Lead
76	2337 COURT R	I	1901	Lead/Partial Lead
77	2345 COURT R	I	1901	Lead/Partial Lead
78	1737 26TH ST	I	1901	Lead/Partial Lead
79	2408 AVENUE S	I	1912	Lead/Partial Lead
80	2348 COURT R	I	1912	Lead/Partial Lead
81	1720 27TH ST	I	1912	Lead/Partial Lead
82	2610 AVENUE P	I	1913	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
83	1544 27TH ST	I	1913	Lead/Partial Lead
84	1704 28TH ST	I	1913	Lead/Partial Lead
85	1724 27TH ST	I	1913	Lead/Partial Lead
86	1531 27TH ST	I	1913	Lead/Partial Lead
87	1524 PIKE RD	I	1914	Lead/Partial Lead
88	1707 27TH ST	I	1914	Lead/Partial Lead
89	1801 28TH ST	I	1914	Lead/Partial Lead
90	1741 28TH ST	I	1914	Lead/Partial Lead
91	1805 28TH ST	I	1916	Lead/Partial Lead
92	2540 24TH ST	I	1923	Lead/Partial Lead
93	2324 22ND ST	I	1923	Lead/Partial Lead
94	2345 26TH ST	I	1924	Lead/Partial Lead
95	2017 26TH ST	I	1924	Lead/Partial Lead
96	2316 22ND ST	I	1924	Lead/Partial Lead
97	2336 22ND ST	I	1924	Lead/Partial Lead
98	2305 22ND ST	I	1924	Lead/Partial Lead
99	2528 25TH ST	I	1924	Lead/Partial Lead
100	2517 24TH ST	I	1924	Lead/Partial Lead
101	2309 22ND ST	I	1924	Lead/Partial Lead
102	2329 22ND ST	I	1924	Lead/Partial Lead
103	828 LOMB AVE SW	I	1901	Lead/Partial Lead
104	916 LOMB AVE SW	I	1912	Lead/Partial Lead
105	832 LOMB AVE SW	I	1913	Lead/Partial Lead
106	820 FULTON AVE SW	I	1923	Lead/Partial Lead
107	1002 LOMB AVE SW	I	1924	Lead/Partial Lead
108	408 4TH ST	I	1916	Lead/Partial Lead
109	416 4TH ST	I	1916	Lead/Partial Lead
110	409 4TH ST	I	1916	Lead/Partial Lead
111	415 4TH ST	I	1916	Lead/Partial Lead
112	704 FINLEY AVE W	I	1914	Lead/Partial Lead
113	720 FINLEY AVE W	I	1914	Lead/Partial Lead
114	2137 ARKADELPHIA RD	I	1916	Lead/Partial Lead
115	808 FINLEY AVE W	I	1916	Lead/Partial Lead
116	801 21ST AVE W	I	1920	Lead/Partial Lead
117	800 FINLEY AVE W	I	1921	Lead/Partial Lead
118	2123 8TH ST W	I	1923	Lead/Partial Lead
119	1301 24TH ST N	I	1901	Lead/Partial Lead
120	2412 12TH AVE N	I	1901	Lead/Partial Lead
121	1324 25TH ST N	I	1901	Lead/Partial Lead
122	1417 26TH ST N	I	1901	Lead/Partial Lead
123	2511 13TH AVE N	I	1901	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
124	1319 26TH ST N	I	1901	Lead/Partial Lead
125	2524 13TH AVE N	I	1901	Lead/Partial Lead
126	2205 15TH AVE N	I	1914	Lead/Partial Lead
127	1326 25TH ST N	I	1916	Lead/Partial Lead
128	2319 14TH AVE N	I	1918	Lead/Partial Lead
129	1406 25TH ST N	I	1922	Lead/Partial Lead
130	2207 15TH AVE N	I	1922	Lead/Partial Lead
131	2201 15TH AVE N	I	1922	Lead/Partial Lead
132	1426 23RD ST N	I	1922	Lead/Partial Lead
133	1422 23RD ST N	I	1923	Lead/Partial Lead
134	2211 15TH AVE N	I	1923	Lead/Partial Lead
135	2213 15TH AVE N	I	1923	Lead/Partial Lead
136	2214 15TH AVE N	I	1923	Lead/Partial Lead
137	2212 15TH AVE N	I	1923	Lead/Partial Lead
138	1425 23RD ST N	I	1923	Lead/Partial Lead
139	2300 14TH AVE N	I	1923	Lead/Partial Lead
140	1423 23RD ST N	I	1923	Lead/Partial Lead
141	1547 WALNUT HILL CIR	I	1923	Lead/Partial Lead
142	2301 14TH AVE N	I	1923	Lead/Partial Lead
143	2307 14TH AVE N	I	1923	Lead/Partial Lead
144	2302 14TH AVE N	I	1923	Lead/Partial Lead
145	2304 14TH AVE N	I	1923	Lead/Partial Lead
146	8630 6TH AVE N	I	1923	Lead/Partial Lead
147	1459 22ND ST N	I	1923	Lead/Partial Lead
148	2303 14TH AVE N	I	1923	Lead/Partial Lead
149	1422 22ND ST N	I	1923	Lead/Partial Lead
150	1420 22ND ST N	I	1923	Lead/Partial Lead
151	503 AVENUE U	I	1914	Lead/Partial Lead
152	503 AVENUE T	I	1916	Lead/Partial Lead
153	500 AVENUE T	I	1916	Lead/Partial Lead
154	562 AVENUE V	I	1916	Lead/Partial Lead
155	608 COURT T	I	1916	Lead/Partial Lead
156	653 AVENUE T	I	1916	Lead/Partial Lead
157	657 AVENUE T	I	1916	Lead/Partial Lead
158	913 6TH LN	I	1918	Lead/Partial Lead
159	525 AVENUE T	I	1918	Lead/Partial Lead
160	815 5TH PL	I	1921	Lead/Partial Lead
161	811 5TH PL	I	1921	Lead/Partial Lead
162	801 6TH WAY	I	1923	Lead/Partial Lead
163	1114 2ND ST N	I	1901	Lead/Partial Lead
164	23 11TH CT N	I	1901	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
165	1112 2ND ST N	I	1901	Lead/Partial Lead
166	1 11TH CT N	I	1901	Lead/Partial Lead
167	1104 2ND ST N	I	1901	Lead/Partial Lead
168	1108 2ND ST N	I	1901	Lead/Partial Lead
169	3013 PRINCE AVE	I	1924	Lead/Partial Lead
170	3028 PRINCE AVE	I	1924	Lead/Partial Lead
171	4308 AVENUE T	I	1924	Lead/Partial Lead
172	2512 WARRIOR RD	I	1901	Lead/Partial Lead
173	1305 44TH ST	I	1901	Lead/Partial Lead
174	1439 46TH ST	I	1901	Lead/Partial Lead
175	1400 46TH ST	I	1901	Lead/Partial Lead
176	1432 47TH ST	I	1912	Lead/Partial Lead
177	1437 45TH ST	I	1912	Lead/Partial Lead
178	1442 46TH ST	I	1912	Lead/Partial Lead
179	1437 47TH ST	I	1913	Lead/Partial Lead
180	1443 46TH ST	I	1918	Lead/Partial Lead
181	1410 46TH ST	I	1918	Lead/Partial Lead
182	1411 45TH ST	I	1922	Lead/Partial Lead
183	4724 AVENUE N	I	1923	Lead/Partial Lead
184	1417 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
185	1102 15TH PL SW	I	1901	Lead/Partial Lead
186	1556 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
187	1441 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
188	1445 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
189	1413 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
190	1109 15TH PL SW	I	1901	Lead/Partial Lead
191	1129 15TH PL SW	I	1901	Lead/Partial Lead
192	1121 15TH PL SW	I	1901	Lead/Partial Lead
193	1117 15TH PL SW	I	1901	Lead/Partial Lead
194	1157 15TH PL SW	I	1901	Lead/Partial Lead
195	1401 STEINER AVE SW	I	1901	Lead/Partial Lead
196	1133 15TH PL SW	I	1901	Lead/Partial Lead
197	1120 15TH WAY SW	I	1901	Lead/Partial Lead
198	1017 15TH PL SW	I	1901	Lead/Partial Lead
199	1444 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
200	1101 15TH PL SW	I	1901	Lead/Partial Lead
201	1481 PEARSON AVE SW	I	1901	Lead/Partial Lead
202	1457 PEARSON AVE SW	I	1901	Lead/Partial Lead
203	1009 15TH PL SW	I	1901	Lead/Partial Lead
204	1105 15TH ST SW	I	1901	Lead/Partial Lead
205	1012 15TH WAY SW	I	1901	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
206	1425 TUSCALOOSA AVE SW	I	1901	Lead/Partial Lead
207	1025 15TH PL SW	I	1901	Lead/Partial Lead
208	1013 14TH PL SW	I	1901	Lead/Partial Lead
209	1568 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
210	1447 PEARSON AVE SW	I	1901	Lead/Partial Lead
211	1128 15TH ST SW	I	1901	Lead/Partial Lead
212	1488 PEARSON AVE SW	I	1901	Lead/Partial Lead
213	1025 15TH WAY SW	I	1901	Lead/Partial Lead
214	1413 STEINER AVE SW	I	1901	Lead/Partial Lead
215	1112 15TH PL SW	I	1901	Lead/Partial Lead
216	1572 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
217	1008 15TH WAY SW	I	1901	Lead/Partial Lead
218	730 15TH ST SW	I	1901	Lead/Partial Lead
219	1100 15TH ST SW	I	1901	Lead/Partial Lead
220	1157 15TH ST SW	I	1901	Lead/Partial Lead
221	1501 PEARSON AVE SW	I	1901	Lead/Partial Lead
222	724 15TH ST SW	I	1901	Lead/Partial Lead
223	720 15TH ST SW	I	1901	Lead/Partial Lead
224	716 15TH ST SW	I	1901	Lead/Partial Lead
225	1560 ALEMEDA AVE SW	I	1901	Lead/Partial Lead
226	809 FULTON AVE	I	1923	Lead/Partial Lead
227	713 FULTON AVE	I	1923	Lead/Partial Lead
228	837 JACKSON BLVD	I	1923	Lead/Partial Lead
229	813 FULTON AVE	I	1923	Lead/Partial Lead
230	700 BELL AVE	I	1923	Lead/Partial Lead
231	720 BELL AVE	I	1923	Lead/Partial Lead
232	716 BELL AVE	I	1923	Lead/Partial Lead
233	724 BELL AVE	I	1923	Lead/Partial Lead
234	719 JEFFERSON BLVD	I	1923	Lead/Partial Lead
235	720 FULTON AVE	I	1923	Lead/Partial Lead
236	604 JACKSON BLVD	I	1923	Lead/Partial Lead
237	900 OVERTON AVE	I	1923	Lead/Partial Lead
238	705 FULTON AVE	I	1923	Lead/Partial Lead
239	724 JEFFERSON BLVD	I	1923	Lead/Partial Lead
240	804 FULTON AVE	I	1923	Lead/Partial Lead
241	808 FULTON AVE	I	1924	Lead/Partial Lead
242	728 BELL AVE	I	1924	Lead/Partial Lead
243	728 FULTON AVE	I	1924	Lead/Partial Lead
244	712 JEFFERSON BLVD	I	1924	Lead/Partial Lead
245	904 OVERTON AVE	I	1924	Lead/Partial Lead
246	906 OVERTON AVE	I	1924	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
247	913 OVERTON AVE	I	1924	Lead/Partial Lead
248	1216 JEFFERSON BLVD	I	1923	Lead/Partial Lead
249	1224 ELM AVE	I	1923	Lead/Partial Lead
250	1243 ELM AVE	I	1923	Lead/Partial Lead
251	1240 ELM AVE	I	1923	Lead/Partial Lead
252	1244 ELM AVE	I	1923	Lead/Partial Lead
253	1232 ELM AVE	I	1923	Lead/Partial Lead
254	1248 ELM AVE	I	1923	Lead/Partial Lead
255	1237 ELM AVE	I	1923	Lead/Partial Lead
256	1101 JACKSON BLVD	I	1923	Lead/Partial Lead
257	1236 ELM AVE	I	1923	Lead/Partial Lead
258	1229 FULTON AVE	I	1924	Lead/Partial Lead
259	1106 JEFFERSON BLVD	I	1924	Lead/Partial Lead
260	8315 5TH AVE N	I	1901	Lead/Partial Lead
261	8400 5TH AVE N	I	1901	Lead/Partial Lead
262	8409 5TH AVE N	I	1912	Lead/Partial Lead
263	8100 5TH AVE N	I	1914	Lead/Partial Lead
264	8004 8TH AVE N	I	1918	Lead/Partial Lead
265	8154 5TH AVE N	I	1918	Lead/Partial Lead
266	8216 5TH AVE N	I	1918	Lead/Partial Lead
267	8116 5TH AVE N	I	1918	Lead/Partial Lead
268	8120 5TH AVE N	I	1918	Lead/Partial Lead
269	8230 5TH AVE N	I	1921	Lead/Partial Lead
270	8138 5TH AVE N	I	1922	Lead/Partial Lead
271	8417 5TH AVE N	I	1922	Lead/Partial Lead
272	8140 5TH AVE N	I	1923	Lead/Partial Lead
273	8410 5TH AVE N	I	1923	Lead/Partial Lead
274	8004 7TH AVE N	I	1923	Lead/Partial Lead
275	8300 5TH AVE N	I	1923	Lead/Partial Lead
276	8201 5TH AVE N	I	1924	Lead/Partial Lead
277	8203 5TH AVE N	I	1924	Lead/Partial Lead
278	8207 5TH AVE N	I	1924	Lead/Partial Lead
279	8012 8TH AVE N	I	1924	Lead/Partial Lead
280	8533 2ND AVE S	I	1901	Lead/Partial Lead
281	8532 1ST AVE S	I	1901	Lead/Partial Lead
282	8518 1ST AVE S	I	1901	Lead/Partial Lead
283	8523 2ND AVE S	I	1912	Lead/Partial Lead
284	8511 2ND AVE S	I	1916	Lead/Partial Lead
285	8610 1ST AVE S	I	1920	Lead/Partial Lead
286	8636 1ST AVE S	I	1920	Lead/Partial Lead
287	217 86TH ST S	I	1921	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
288	8606 1ST AVE S	I	1922	Lead/Partial Lead
289	201 86TH PL S	I	1923	Lead/Partial Lead
290	213 5TH PL	I	1913	Lead/Partial Lead
291	304 5TH WAY	I	1913	Lead/Partial Lead
292	625 5TH PL	I	1914	Lead/Partial Lead
293	540 AVENUE B	I	1914	Lead/Partial Lead
294	811 AVENUE H	I	1914	Lead/Partial Lead
295	805 AVENUE H	I	1914	Lead/Partial Lead
296	601 5TH WAY	I	1914	Lead/Partial Lead
297	609 6TH PL	I	1916	Lead/Partial Lead
298	625 6TH PL	I	1916	Lead/Partial Lead
299	404 5TH WAY	I	1916	Lead/Partial Lead
300	400 5TH WAY	I	1916	Lead/Partial Lead
301	621 6TH PL	I	1916	Lead/Partial Lead
302	558 AVENUE C	I	1916	Lead/Partial Lead
303	720 AVENUE G	I	1916	Lead/Partial Lead
304	560 AVENUE C	I	1918	Lead/Partial Lead
305	562 AVENUE C	I	1920	Lead/Partial Lead
306	500 6TH ST	I	1920	Lead/Partial Lead
307	308 6TH ST	I	1921	Lead/Partial Lead
308	806 AVENUE E	I	1921	Lead/Partial Lead
309	613 5TH PL	I	1922	Lead/Partial Lead
310	829 AVENUE F	I	1922	Lead/Partial Lead
311	940 16TH AVE W	I	1914	Lead/Partial Lead
312	1614 9TH PL W	I	1914	Lead/Partial Lead
313	1200 9TH ST W	I	1914	Lead/Partial Lead
314	1213 9TH PL W	I	1914	Lead/Partial Lead
315	943 16TH AVE W	I	1914	Lead/Partial Lead
316	1136 9TH ST W	I	1914	Lead/Partial Lead
317	1140 9TH PL W	I	1916	Lead/Partial Lead
318	1158 9TH ST W	I	1916	Lead/Partial Lead
319	1164 9TH ST W	I	1916	Lead/Partial Lead
320	1162 9TH ST W	I	1918	Lead/Partial Lead
321	1137 9TH ST W	I	1924	Lead/Partial Lead
322	321 43RD ST	I	1913	Lead/Partial Lead
323	544 41ST ST	I	1913	Lead/Partial Lead
324	309 42ND ST	I	1916	Lead/Partial Lead
325	317 42ND ST	I	1916	Lead/Partial Lead
326	532 41ST ST	I	1918	Lead/Partial Lead
327	546 41ST ST	I	1918	Lead/Partial Lead
328	531 40TH ST	I	1918	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
329	523 40TH ST	I	1918	Lead/Partial Lead
330	510 41ST ST	I	1918	Lead/Partial Lead
331	332 41ST ST	I	1920	Lead/Partial Lead
332	314 43RD ST	I	1920	Lead/Partial Lead
333	338 41ST ST	I	1920	Lead/Partial Lead
334	4109 PARKWAY	I	1920	Lead/Partial Lead
335	4113 PARKWAY	I	1920	Lead/Partial Lead
336	306 43RD ST	I	1921	Lead/Partial Lead
337	4105 PARKWAY AVE	I	1921	Lead/Partial Lead
338	309 43RD ST	I	1921	Lead/Partial Lead
339	317 43RD ST	I	1922	Lead/Partial Lead
340	515 41ST ST	I	1922	Lead/Partial Lead
341	340 41ST ST	I	1922	Lead/Partial Lead
342	4101 PARKWAY	I	1922	Lead/Partial Lead
343	320 42ND ST	I	1923	Lead/Partial Lead
344	316 42ND ST	I	1923	Lead/Partial Lead
345	4117 PARKWAY	I	1923	Lead/Partial Lead
346	3601 AVENUE F	I	1913	Lead/Partial Lead
347	3927 COURT G	I	1916	Lead/Partial Lead
348	3923 COURT G	I	1916	Lead/Partial Lead
349	205 49TH ST	I	1924	Lead/Partial Lead
350	5131 HILLSIDE DR	I	1924	Lead/Partial Lead
351	4301 PARKWAY AVE	I	1924	Lead/Partial Lead
352	200 50TH ST	I	1924	Lead/Partial Lead
353	5106 OVERLOOK PL	I	1924	Lead/Partial Lead
354	1519 42ND ST	I	1901	Lead/Partial Lead
355	1621 WARRIOR RD	I	1901	Lead/Partial Lead
356	1629 WARRIOR RD	I	1901	Lead/Partial Lead
357	1617 WARRIOR RD	I	1901	Lead/Partial Lead
358	1639 WARRIOR RD	I	1901	Lead/Partial Lead
359	1609 WARRIOR RD	I	1901	Lead/Partial Lead
360	1853 47TH ST	I	1901	Lead/Partial Lead
361	4620 COURT S	I	1901	Lead/Partial Lead
362	1813 BESSEMER RD	I	1901	Lead/Partial Lead
363	1581 MARTIN AVE	I	1901	Lead/Partial Lead
364	4708 COURT O	I	1901	Lead/Partial Lead
365	4000 AVENUE Q	I	1901	Lead/Partial Lead
366	1510 47TH ST	I	1901	Lead/Partial Lead
367	1551 MARTIN AVE	I	1901	Lead/Partial Lead
368	1224 14TH PL SW	I	1927	Lead/Partial Lead
369	1116 15TH PL SW	I	1927	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
370	1140 15TH PL SW	I	1927	Lead/Partial Lead
371	1220 14TH PL SW	I	1928	Lead/Partial Lead
372	1132 14TH PL SW	I	1928	Lead/Partial Lead
373	1136 14TH PL SW	I	1928	Lead/Partial Lead
374	1245 14TH PL SW	I	1928	Lead/Partial Lead
375	1320 MC MILLAN AVE SW	I	1929	Lead/Partial Lead
376	1322 MC MILLAN AVE SW	I	1929	Lead/Partial Lead
377	1124 14TH PL SW	I	1929	Lead/Partial Lead
378	1128 14TH PL SW	I	1929	Lead/Partial Lead
379	1153 15TH PL SW	I	1929	Lead/Partial Lead
380	2533 MONTEVALLO RD	I	1927	Lead/Partial Lead
381	2517 MONTEVALLO RD	I	1927	Lead/Partial Lead
382	2613 MONTEVALLO RD	I	1937	Lead/Partial Lead
383	2633 CANTERBURY RD	I	1927	Lead/Partial Lead
384	2840 HASTINGS RD	I	1927	Lead/Partial Lead
385	2909 OVERHILL RD	I	1927	Lead/Partial Lead
386	2801 CANTERBURY RD	I	1927	Lead/Partial Lead
387	2809 CANTERBURY RD	I	1928	Lead/Partial Lead
388	2716 CANTERBURY RD	I	1928	Lead/Partial Lead
389	2950 CANTERBURY RD	I	1928	Lead/Partial Lead
390	2849 CANTERBURY RD	I	1928	Lead/Partial Lead
391	2820 SURRY RD	I	1928	Lead/Partial Lead
392	3025 CANTERBURY RD	I	1928	Lead/Partial Lead
393	3007 CANTERBURY RD	I	1928	Lead/Partial Lead
394	2826 SURRY RD	I	1928	Lead/Partial Lead
395	2820 HASTINGS RD	I	1928	Lead/Partial Lead
396	2906 CANTERBURY RD	I	1928	Lead/Partial Lead
397	2812 OVERHILL RD	I	1928	Lead/Partial Lead
398	2865 CANTERBURY RD	I	1929	Lead/Partial Lead
399	2858 CANTERBURY RD	I	1929	Lead/Partial Lead
400	2857 CANTERBURY RD	I	1929	Lead/Partial Lead
401	2844 SURRY RD	I	1929	Lead/Partial Lead
402	2825 CANTERBURY RD	I	1929	Lead/Partial Lead
403	2912 CANTERBURY RD	I	1929	Lead/Partial Lead
404	3001 CANTERBURY RD	I	1929	Lead/Partial Lead
405	3019 CANTERBURY RD	I	1929	Lead/Partial Lead
406	2809 BALMORAL RD	I	1929	Lead/Partial Lead
407	2864 HASTINGS RD	I	1929	Lead/Partial Lead
408	2808 HASTINGS RD	I	1929	Lead/Partial Lead
409	2812 SURRY RD	I	1929	Lead/Partial Lead
410	2915 CANTERBURY RD	I	1929	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
411	2942 CANTERBURY RD	I	1929	Lead/Partial Lead
412	126 STRATFORD CIR	I	1927	Lead/Partial Lead
413	134 STRATFORD CIR	I	1927	Lead/Partial Lead
414	138 DEVON DR	I	1927	Lead/Partial Lead
415	208 DEVON DR	I	1927	Lead/Partial Lead
416	212 DEVON DR	I	1927	Lead/Partial Lead
417	214 DEVON DR	I	1927	Lead/Partial Lead
418	213 DEVON DR	I	1927	Lead/Partial Lead
419	424 NORFOLK LN	I	1927	Lead/Partial Lead
420	418 NORFOLK LN	I	1927	Lead/Partial Lead
421	416 NORFOLK LN	I	1927	Lead/Partial Lead
422	414 NORFOLK LN	I	1927	Lead/Partial Lead
423	209 DEVON DR	I	1927	Lead/Partial Lead
424	207 DEVON DR	I	1927	Lead/Partial Lead
425	222 DEVON DR	I	1927	Lead/Partial Lead
426	220 DEVON DR	I	1927	Lead/Partial Lead
427	218 DEVON DR	I	1927	Lead/Partial Lead
428	216 DEVON DR	I	1927	Lead/Partial Lead
429	221 DEVON DR	I	1927	Lead/Partial Lead
430	414 HAMPTON DR	I	1927	Lead/Partial Lead
431	208 WINDSOR DR	I	1927	Lead/Partial Lead
432	206 WINDSOR DR	I	1927	Lead/Partial Lead
433	204 WINDSOR DR	I	1927	Lead/Partial Lead
434	126 WINDSOR DR	I	1927	Lead/Partial Lead
435	124 WINDSOR DR	I	1927	Lead/Partial Lead
436	200 WINDSOR DR	I	1927	Lead/Partial Lead
437	300 WINDSOR DR	I	1927	Lead/Partial Lead
438	302 WINDSOR DR	I	1927	Lead/Partial Lead
439	308 WINDSOR DR	I	1927	Lead/Partial Lead
440	618 MANCHESTER LN	I	1929	Lead/Partial Lead
441	616 MANCHESTER LN	I	1929	Lead/Partial Lead
442	614 MANCHESTER LN	I	1929	Lead/Partial Lead
443	612 MANCHESTER LN	I	1929	Lead/Partial Lead
444	615 WARWICK RD	I	1929	Lead/Partial Lead
445	609 WARWICK RD	I	1929	Lead/Partial Lead
446	611 WARWICK RD	I	1929	Lead/Partial Lead
447	603 WARWICK RD	I	1929	Lead/Partial Lead
448	604 WARWICK RD	I	1929	Lead/Partial Lead
449	222 OGLESBY AVE	I	1928	Lead/Partial Lead
450	220 OGLESBY AVE	I	1928	Lead/Partial Lead
451	218 OGLESBY AVE	I	1928	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
452	216 OGLESBY AVE	I	1928	Lead/Partial Lead
453	112 OGLESBY AVE	I	1928	Lead/Partial Lead
454	421 HAMBAUGH AVE	I	1928	Lead/Partial Lead
455	407 STERRETT AVE	I	1929	Lead/Partial Lead
456	109 ACTON AVE	I	1929	Lead/Partial Lead
457	113 ACTON AVE	I	1929	Lead/Partial Lead
458	106 ACTON AVE	I	1929	Lead/Partial Lead
459	203 ACTON AVE	I	1929	Lead/Partial Lead
460	207 ACTON AVE	I	1929	Lead/Partial Lead
461	209 ACTON AVE	I	1929	Lead/Partial Lead
462	1829 SHADES CREST RD	I	1929	Lead/Partial Lead
463	1986 SHADES CREST RD	I	1926	Lead/Partial Lead
464	1985 SHADES CREST RD	I	1928	Lead/Partial Lead
465	900 BIRMINGHAM ST	I	1929	Lead/Partial Lead
466	307 KENILWORTH DR	I	1927	Lead/Partial Lead
467	237 LA PRADO PL	I	1926	Lead/Partial Lead
468	208 POINCIANA DR	I	1926	Lead/Partial Lead
469	2428 PARK LN S	I	1924	Lead/Partial Lead
470	2131 ENGLISH VILLAGE LN	I	1927	Lead/Partial Lead
471	1209 ETOWAH ST	I	1924	Lead/Partial Lead
472	1229 ETOWAH ST	I	1924	Lead/Partial Lead
473	1727 EAST LAKE BLVD	I	1924	Lead/Partial Lead
474	1428 AUBURN AVE	I	1924	Lead/Partial Lead
475	1445 AUBURN AVE	I	1924	Lead/Partial Lead
476	1100 FOREST ST	I	1924	Lead/Partial Lead
477	702 47TH ST N	I	1929	Lead/Partial Lead
478	4513 10TH AVE N	I	1924	Lead/Partial Lead
479	4756 12TH AVE N	I	1924	Lead/Partial Lead
480	968 50TH ST N	I	1924	Lead/Partial Lead
481	1020 48TH ST N	I	1924	Lead/Partial Lead
482	4745 13TH AVE N	I	1925	Lead/Partial Lead
483	4646 13TH AVE N	I	1925	Lead/Partial Lead
484	4733 13TH AVE N	I	1925	Lead/Partial Lead
485	4600 12TH AVE N	I	1925	Lead/Partial Lead
486	4709 13TH AVE N	I	1925	Lead/Partial Lead
487	4815 14TH AVE N	I	1925	Lead/Partial Lead
488	4810 14TH AVE N	I	1926	Lead/Partial Lead
489	4705 13TH AVE N	I	1926	Lead/Partial Lead
490	4808 14TH AVE N	I	1926	Lead/Partial Lead
491	4814 14TH AVE N	I	1926	Lead/Partial Lead
492	1019 48TH ST N	I	1926	Lead/Partial Lead

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
493	1023 48TH ST N	I	1926	Lead/Partial Lead
494	4701 13TH AVE N	I	1926	Lead/Partial Lead
495	4721 13TH AVE N	I	1926	Lead/Partial Lead
496	4829 14TH AVE N	I	1926	Lead/Partial Lead
497	4821 14TH AVE N	I	1926	Lead/Partial Lead
498	4709 14TH AVE N	I	1926	Lead/Partial Lead
499	1025 48TH ST N	I	1926	Lead/Partial Lead
500	4824 14TH AVE N	I	1926	Lead/Partial Lead
501	1500 KESTWICK DRIVE	I	1984	PVC *
502	336 42ND AVENUE NE	I	2009	Copper *
503	2513 AVENUE K	I	1983	PVC *
504	4912 DEER FOOT COVE	I	2009	PVC *
505	6175 EDGEFIELD LANE	I	2016	Unknown to Customer *
506	3013 PANORAMA BROOK CIRCLE	I	1997	Unknown to Customer *
507	4995 REYNOLDS LANE	I	2000	Copper *
508	4916 DEER FOOT COVE	I	2009	PVC *
509	4755 DEER FOOT COVE	I	2010	PVC *
510	808 CLUSTER SPRINGS RD.	I	2015	PVC *
511	909 THOMAS DRIVE	I	1985	Copper
512	1196 RIVERCHASE PARKWAY	I	1984	Copper & PVC
513	733 10TH WAY	I	1989	Unknown to Customer *
514	3512 WATER OAK DRIVE	I	1985	Copper
515	313 DEVON DRIVE	I	2003	Copper *
516	1917 FOREST KNOLL DRIVE	I	1986	Copper
517	3171 WOOD BRIDGE DRIVE	I	1983	Copper & PVC
518	2001 BRIDGE LAKE DRIVE	I	1983	Copper
519	1248 STONECREST DR	I	1983	Copper
520	1503 WILDERNESS LN	I	1983	Copper
521	1504 SHADY OAK CIR	I	1983	Copper
522	1528 SHAGBARK CIR	I	1983	Copper
523	5015 LOREN LN	I	1983	Copper
524	3025 WHITES CHAPEL PKWY	I	1983	Copper
525	122 KETONA RD	I	1983	Copper
526	204 MAIN ST	I	1983	Copper
527	209 DEXTER AVE	I	1983	Copper
528	3101 ANDOVER DR	I	1983	Copper
529	3103 KEYSTONE DR	I	1983	Copper
530	2558 TORRANCE RD	I	1983	Copper
531	2688 MAYFIELD RD	I	1983	Copper
532	325 9TH CT	I	1983	Copper
533	1739 SHANNON RD	I	1983	Copper

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
534	208 HONEYBEE CIR	I	1983	Copper
535	3324 SMITH SIMS RD	I	1983	Copper
536	7401 GRACE AVE	I	1983	Copper
537	101 SUNNY BROOK LN	I	1983	Copper
538	102 SPRING GLADE CIR	I	1983	Copper
539	104 TWIN LAKE RD	I	1983	Copper
540	104 SPRING GLADE CIR	I	1983	Copper
541	31 ASHFORD CIR	I	1983	Copper
542	40 RED STICK RD	I	1983	Copper
543	481 MARYWOOD LN	I	1983	Copper
544	523 CREEKVIEW CIR	I	1983	Copper
545	17 POLARIS CIR	I	1983	Copper
546	20 FREDA JANE LN	I	1983	Copper
547	5377 MEADOW BROOK DR	I	1984	Copper
548	9528 CENTRAL RD	I	1984	Copper
549	9556 BANKSTON RD	I	1984	Copper
550	3 EAGLE VIEW DR	I	1984	Copper
551	8275 RIVER RD	I	1984	Copper
552	9001 BILL JONES RD	I	1984	Copper
553	2728 LAWN AVE	I	1984	Copper
554	2800 33RD AVE	I	1984	Copper
555	1020 OAK GROVE RD	I	1984	Copper
556	1218 GOLDEN FOREST DR	I	1984	Copper
557	2005 LARGIN RD	I	1984	Copper
558	2518 TIMBER TRL	I	1984	Copper
559	2574 REDWOOD LN	I	1984	Copper
560	5175 CIMMARON CIR	I	1984	Copper
561	2011 WILDFLOWER DR	I	1984	Copper
562	2012 HUNTERS RUN	I	1984	Copper
563	2013 SHAGBARK RD	I	1984	Copper
564	1756 BIG MOUNTAIN DR	I	1984	Copper
565	1816 MARLIN SPRINGS RD	I	1984	Copper
566	8941 JADE LAKE RD	I	1985	Copper
567	310 EASTON CIR	I	1985	Copper
568	412 18TH ST	I	1985	Copper
569	1523 23RD ST	I	1985	Copper
570	4959 SYCAMORE LN	I	1985	Copper
571	5206 CARRIAGE DR	I	1985	Copper
572	54 SHORT ST	I	1985	Copper
573	131 NEWTON RD	I	1985	Copper
574	200 WOODBURY DR	I	1985	Copper

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
575	416 BLACK CREEK RD	I	1985	Copper
576	934 HITCHING POST LN	I	1985	Copper
577	1056 CHERRY BARK CT	I	1985	Copper
578	3206 MOUNTAIN RIDGE CIR	I	1985	Copper
579	3535 YORK ST	I	1985	Copper
580	5788 MT OLIVE RD	I	1985	Copper
581	625 LIVE OAK CIR	I	1985	Copper
582	3759 POP STONE CIR	I	1985	Copper
583	7342 ROPER RD	I	1985	Copper
584	5399 HARVEST RIDGE LN	I	1986	Copper
585	3405 CHARINGWOOD LN	I	1986	Copper
586	3617 BIRCHWOOD LN	I	1986	Copper
587	205 ANNANDALE CRES	I	1986	Copper
588	206 HART FELL CRES	I	1986	Copper
589	2008 PATRICK RD	I	1986	Copper
590	3132 BRADFORD PL	I	1986	Copper
591	3045 BROOKHILL DR	I	1986	Copper
592	8013 MARSH MOUNTAIN RD	I	1986	Copper
593	9909 WOOD AVE	I	1986	Copper
594	1832 OLD SPRINGVILLE RD	I	1986	Copper
595	5572 LAZY ACRES TRL	I	1986	Copper
596	1915 7TH ST	I	1986	Copper
597	3299 OVERTON TRL	I	1986	Copper
598	308 JACKSON CIR	I	1986	Copper
599	8869 COUNTY LINE RD	I	1987	Copper
600	209 REDWOOD LN	I	1987	Copper
601	2249 ROCK CREEK TRL	I	1987	Copper
602	5825 NORTH RD	I	1987	Copper
603	4068 SHERBORNE RD	I	1987	Copper
604	1508 KESTWICK DR	I	1987	Copper
605	4370 CLIFF RD	I	1987	Copper
606	867 IVAWOOD RD	I	1987	Copper
607	228 RIDGEWOOD AVE	I	1987	Copper
608	204 MEADOW CROFT CIR	I	1987	Copper
609	26 LAKEVIEW DR	I	1987	Copper
610	6300 CAHABA VALLEY RD	I	1987	Copper
611	8742 CENTRAL RD	I	1987	Copper
612	2320 COUNTRYRIDGE DR	I	1987	Copper
613	3300 TROY PL	I	1987	Copper
614	235 LA PRADO PL	I	1987	Copper
615	416 YORKSHIRE DR	I	1987	Copper

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
616	7 AUGUSTA WAY	I	1987	Copper
617	2216 CUMBERLAND LAKE DR	I	1987	Copper
618	217 OAK DR	I	1987	Copper
619	917 18TH WAY SW	III	1925	Unknown to Customer
620	4209 6TH CT WYLAM	III	1970	Copper & PVC
621	277 SHADES CREST RD	III	1960	PVC
622	3242 SALISBURY RD	III	1929	Copper
623	900 TAMMY ANNE DRIVE	III	1978	Copper & PVC
624	636 85TH STREET S	III	1950	Unknown to Customer
625	525 12TH AVE W	III	1920	Copper
626	3202 AVE I, ENSLEY	III	1924	Copper/Galvanized/PVC
627	2409 AVE I, ENSLEY	III	1924	Unknown to Customer
628	1377 ORLANDO CIR	III	1965	Copper & PVC
629	939 GENE REED RD	III	1971	Unknown to Customer
630	609 RIDGE TOP CIR	III	1945	Copper/Galvanized
631	1309 MCCARY ST SW	III	1958	Copper
632	4304 GADSDEN ST	III	1926	Unknown to Customer
633	3041 WENONAH CIR SW	III	1977	Unknown to Customer
634	1858 STEINER AVE SW**	I	1926	Unknown to Customer
635	4622 6TH AVE, WYLAM	III	1974	Copper & PVC
636	6455 BIBBY BRICK YARD RD	III	1979	Unknown to Customer
637	735 10TH WAY	III	1967	Copper
638	22 VENTURA AVE	III	1942	Copper & Galvanized
639	191 SATURN LN	III	1972	Copper & PVC
640	6817 COURT N	III	1971	Unknown to Customer
641	1802 THORNTON PL	III	1968	Unknown to Customer
642	817 28TH ST SW	III	1924	Unknown to Customer
643	6809 COURT N	III	1949	Unknown to Customer
644	1616 19TH PL SW	III	1971	Copper
645	4327 GLENWOOD AVE	III	1920	Unknown to Customer
646	354 DIXON AVE	III	1929	Copper
647	5619 5TH TERRACE S	III	1925	Copper/Galvanized/PVC
648	1061 31ST ST SOUTH	III	1970	Copper/Galvanized/PVC
649	949 SHADES GLEN DR	III	1960	Copper & PVC
650	607 ERIE ST**	I	1925	Galvanized
651	916 43RD ST, ENSLEY	III	1926	Unknown to Customer
652	1032 ALABAMA AVE SW	III	1920	PVC
653	1015 41ST ST, ENSLEY	III	1958	Unknown to Customer
654	1148 15TH ST SW**	I	1914	Unknown to Customer
655	20 RIDGE DR	III	1926	Copper/Galvanized/PVC

Sampling Sites

	Address	Tier	Year of Plumbing	Material of Construction
656	20 RIDGE DR THE COPPER SERVICE LINE WAS REPLACED ON 7/26/2016 WITH COPPER.	III	1926	Copper/Galvanized/PVC

* Samples invalidated by ADEM

** Samples investigated and found to be lead