Marbury Water System
Lead and Copper Sampling Plan

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Table of Contents

Section 1

Marbury Water System Material List..... Page 3

Lead & Copper Sample Site Plan Selection Criteria for Community Systems ..... Page 4

Public Water Supply Lead & Copper Samples Sites Form ..... Page 5-6

Lead & Copper Sampling Procedures ..... Page 7

Lead & Copper Sampling Instructions for Homeowner or Resident ..... Page 8-9

Section 2

Calculating the 90th Percentile During Initial, Follow-up, Routine & Reduced Monitoring..Page 10

90th Percentile Summary Form ..... Page 11

Section 3

Making Changes to Sampling Site Locations ..... Page 12

Lead & Copper Rule Reduced Monitoring Site Selection ..... Page 13

Section 4

Lead & Copper Consumer Notice & Certification Forms ..... Page 14

Consumer Notice Instructions for Community Public Water Supplies ..... Page 15

Marbury Water System Material List

Marbury Water System consists of approximately 96 miles of 160 to 200 class polyvinyl chloride (PVC) pipe with rubber gaskets and approximately 6 miles of 350 class ductile iron pipe with rubber gaskets. The tapping saddles consist of brass and ductile iron. There are approximately 2000 service lines from the main to the meter consisting of polyethylene tubing. There are approximately 1300 type k copper services with all brass mechanical compression type connectors and fittings. The meters contain brass, iron and or plastic parts with all brass shut off valves (curbstops). We have approximately 3300 meters installed. We have used 5 different meter types through the years which include: Neptune, Master, Sensus, Rockwell, and Mueller. The number installed and approximate year installed are as follows:

TYPES	# Installed	App. Year Installed
Neptune	150	2003
	74	2004
	130	2005
Master	611	2007
	648	2008
	392	2009
	185	2010
Sensus	136	2011
	64	2012
	72	2013
	86	2014
	169	2015
	51	2016
Rockwell	150	2005
	153	2006
Mueller	225	2006

The system contains no lead materials.

Section 1

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 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 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
- Single family – lead pipes
- Single family – lead service
- Multi-family – copper pipe with lead solder constructed after 1982
- Multi-family – lead pipes
- Multi-family – lead service

Tier 2
- Building – copper pipe with lead solder constructed after 1982
- 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

LEAD & COPPER SAMPLES SITE FORM 2016

MARBURY WATER SYSTEM PWSID #AL0000013

Certified Testing Lab: TTL, Inc. # of Samples Required: 20

Sampling Time: Every 3 Years

Sample No.	Address of Customer	Tier 1,2, or 3	Lead Service Line (yes or no)	Year of Plumbing	Primary or Alternate
01	624 Dupree Drive	1	No	1988	Primary
02	464 County Road 70	1	No	1986	Primary
03	2881 Highway 143	1	No	1985	Primary
04	2884 Highway 143	1	No	1986	Primary
05	506 County Road 20 E	1	No	1985	Primary
06	533 County Road 20 E	1	No	1987	Primary
07	112 County Road 20 E	1	No	1985	Primary
08	2515 Highway 31 N	1	No	1988	Primary
09	2167 County Road 85	1	No	1985	Primary
10	1733 County Road 87	1	No	1987	Primary
11	1679 County Road 39	1	No	1986	Primary
12	442 Nummy Road	1	No	1985	Primary
13	1643 County Road 39	1	No	1984	Primary
14	1697 County Road 87	1	No	1986	Primary
15	385 Bozie Road	1	No	1985	Primary
16	1681 County Road 39	1	No	1985	Primary
17	6416 Ingram Road	1	No	1985	Primary
18	226 Dogwood Trail	1	No	1985	Primary

19	6767 Highway 143	1	No	1985	Primary
20	173 Church Street	1	No	1985	Primary
21	6515 Ingram Road	1	No	1988	Alternate
22	434 County Road 20 E	1	No	1985	Alternate
23	1691 County Road 39	1	No	1985	Alternate
24	1535 County Road 39	1	No	1987	Alternate
25	1561 Old Prattville Road	1	No	1985	Alternate
26	1267 Highway 31	1	No	1989	Alternate
27	314 County Road 96	1	No	1966	Alternate
28	513 County Road 20	1	No	1964	Alternate
29	320 County Road 96	1	No	1962	Alternate
30	232 County Road 20 E	1	No	1962	Alternate
31	235 County Road 100	1	No	1978	Alternate
32	156 Daisy Road	1	No	1950	Alternate
33	1502 County Road 63	1	No	1985	Alternate
34	505 County Road 63	1	No	1988	Alternate
35	2802 County Road 85	1	No	1965	Alternate
36	455 County Road 537	1	No	1985	Alternate
37	1877 Highway 31 N	1	No	1983	Alternate
38	179 County Road 104	1	No	1985	Alternate
39	207 Rogers Lane	1	No	1987	Alternate
40	206 Rogers Lane	1	No	1988	Alternate
41	1811 County Road 107	1	No	1976	Alternate
42	1927 County Road 107	1	No	1976	Alternate

43	1926 County Road 107	1	No	1972	Alternate

Lead and Copper Sampling Procedures

All lead and copper samples must be first-draw samples and shall be 1 liter in volume. The water should have stood motionless in the plumbing system (not used) of each sample site for a minimum of six hours. While the water cannot be used for more than six hours, do not collect samples from sites which have not been used for an extended period of time; such as a site which has had no water use for several days, i.e. a weekend. Pre-stagnation flushing shall not be performed.

First-draw residential samples shall be collected from the cold water kitchen or bathroom sink only. First-draw nonresidential samples shall be collected from an interior cold water tap from which water is typically drawn for consumption. Aerators shall not be removed from taps or cleaned prior to or during the collection of samples.

Sampling sites must not include faucets which have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants. This includes such devices as filters, softeners, RO systems, etc.

First-draw samples may be collected by the system or the system may allow residents to collect samples after receiving instruction on the proper sampling procedures. Wide-mouth bottles shall be used to collect samples to allow for a higher flow rate during sample collection which is more representative of the flow that a consumer may use to fill a glass of water.

A water supply system shall collect each first-draw tap sample from the same sampling sites used in the previous round of sampling unless a change of sampling site is documented and submitted to the ADEM.

Sites and Situations to Avoid

Do not use

- A mop sink, outside faucet or a tap that is not generally used or intended for human consumption
- A site which is vacant *(don't make special arrangements to get access to site)*
- A site which has undergone recent (within the last 6 months) plumbing improvements or changes including faucets at the specific sample location
- A tap that has any type of treatment
- A site where the owner or resident is uncooperative

Suggested Directions for Homeowner Tap Sample Collection Procedures

These 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 and your state, and is being accomplished through the cooperation of homeowners and residents. Suggested Directions for Homeowner Tap Sample Collection Procedures Revised Version: February 2016

These 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 and your State under the Lead and Copper Rule, and is being accomplished through a collaboration between the public water system and their consumers (e.g. residents).

Collect samples from a tap that has not been used for at least 6 hours. To ensure the water has not been used for at least 6 hours, the best time to collect samples is either early in the morning or in the evening upon returning from work. Be sure to use a kitchen or bathroom cold water tap that has been used for drinking water consumption in the past few weeks. The collection procedure is described below.

1. Prior arrangements will be made with you, the customer, to coordinate the sample collection. Dates will be set for sample kit delivery and pick-up by water system staff.

2. There must be a minimum of 6 hours during which there is no water used from the tap where the sample will be collected and any taps adjacent or close to that tap. Either early mornings or evenings upon returning home are the best sampling times to ensure that the necessary stagnant water conditions exist. Do not intentionally flush the water line before the start of the 6-hour period.

3. Use a kitchen or bathroom cold-water faucet for sampling. If you have water softeners on your kitchen taps, collect your sample from the bathroom tap that is not attached to a water softener, or a point of use filter, if possible. 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 line marked "1000-mL" and turn off the water.

4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.

5. If any plumbing repairs or replacement has been done in the home since the previous sampling event, note this information on the label as provided. Also if your sample was collected from a tap with a water softener, note this as well.

6. Place the sample kit in the same location the kit was delivered to so that water system staff may pick up the sample kit.

7. Results from this monitoring effort and information about lead will be provided to you as soon as practical but no later than 30 days after the system learns of the tap monitoring results. However, if excessive lead and/or copper levels are found, immediate notification will be provided (usually 1-2 working days after the system learns of the tap monitoring results).

Please call 205-755-7949 or 800-308-7949 between 7:30 a.m. and 4:00 p.m., Monday through Friday, if you have any questions regarding these instructions.

TO BE COMPLETED BY THE RESIDENT				
Water was last used:	Time _____	Date _____		
Sample was collected:	Time _____	Date _____		
I have read the above directions and have taken a tap sample in accordance with these instructions.				
_____ Signature		Date _____		

Thank you for your help!

Section 2

Calculating the 90th Percentile During Initial, Follow-up, Routine and Reduced Monitoring

If you collect 5 samples, calculate your 90th percentile as follows:

- Rank your samples in order of concentration (mg/L) from lowest to highest.
- Find the average of the two highest results by adding the results together and dividing by two.
- The resulting number (average) is the 90th percentile

EXAMPLE

Sample Site #	Sample Results
1	0.001
2	0.001
3	0.006
4	0.008
5	0.014

0.008 + 0.014 = 0.022 0.022/2 = 0.011

90th percentile = 0.011 mg/l

This is the number to record on Form 141A and reported to the IDNR

If you collect 6 or more samples, calculate your 90th percentile as follows:

- Rank your samples in order of concentration (mg/L) from lowest to highest.
- Take the total number of samples collected and multiply by 0.90. The result will tell you which sample to record.
- If the number is not a whole number, round to the nearest whole number.
    - 12.7 would be rounded to 13.0 – 12.2 would be rounded to 12.0
- If the number is exactly in the middle of two whole numbers, round to the nearest even number.
    - 12.5 would be rounded to 12.0 – 13.5 would be rounded to 14.0

EXAMPLE IF YOU COLLECTED 10 SAMPLES

10 X 0.9 = 9

Sample #9 is the 90th percentile and should be recorded on Form 141A

Sample Site #	Sample Results
1	0.001
2	0.001
3	0.001
4	0.001
5	0.001
6	0.004
7	0.005
8	0.006
9	**0.008**
10	0.010

The 90th percentile is 0.008 mg/l and should be recorded on Form 141A.

Please note these are examples only, you will have to insert your own results to determine your 90th percentile.

90th Percentile Summary Form

(use this format if your lab does not provide a 90th percentile summary for you)

PWSID#: _____ Public Water Supply Name: _____

Results of lead monitoring:

	Date Collected	Sample Location	Lead Result	Tier ID
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

90th percentile for lead: _____

Results of copper monitoring:

	Date Collected	Sample Location	Lead Result	Tier ID
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

90th percentile for copper: _____

Keep this form for your records.

Section 3
Making Changes to Sampling Site Locations

Make an assessment of your ability to sample a sufficient number of appropriate sites from your lead and copper plan well in advance of the monitoring period. Making contact with 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 Department 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 & Copper Rule

Reduced Monitoring Site Selection

Reduced sampling sites shall be selected using the following procedure:

1. From the two most recent six-month rounds of testing, select the round of testing that had the OVERALL HIGHEST lead result.

2. Using the selected round, arrange the sampling sites in order, based on the lead test result, from highest to lowest.

3. Beginning with and including the site with the highest lead result, select and include every other site for reduced monitoring (i.e. highest result, 3rd highest, 5th highest, 7th highest, etc.).

4. After selecting every other site (see #3 above), if it is determined that a specific selected site can no longer be included in the sampling pool, replace the site with the next site on the original list (i.e. replace the 7th highest site with the 6th highest site).

5. This reduced sampling plan must be kept in your file for future reference. You must return to these same sites for each reduced sampling period.

If either the lead or copper action level IS EXCEEDED at the 90th percentile during any reduced monitoring period, you are required to conduct water quality parameter monitoring in accordance with ADEM Admin. Code r. 335-7-11-.11 during the monitoring period in which the action level was exceeded, and resume standard or base monitoring for at least two consecutive six-month monitoring periods.

Section 4
Lead and Copper Consumer Notice and Certification Forms

PWS Name: _____ PWSID#: _____ Date: _____

LEAD & COPPER CONSUMER NOTICE
ANALYTICAL RESULTS FOR LEAD & COPPER TAP WATER MONITORING

Our public water supply system is required to periodically collect tap water samples to determine the lead and copper levels in our system. Your residence was selected for this monitoring as part of our system's sampling plan. This notice is provided to you with the analytical results of the tap water sample collected at your home.

Sample address: _____ Sample collection date: _____

Analytical Lead result, in mg/L (milligrams per liter): _____

Analytical Copper result, in mg/L (milligrams per liter): _____

Definitions
Action Level (AL): The action level is a concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a public water supply system must follow. The lead action level is 0.015 mg/L. The copper action level is 1.3 mg/L.

Maximum Contaminant Level Goal (MCLG): The maximum contaminant level goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. The MCLG allows for a margin of safety. The lead MCLG is zero. The copper MCLG is 1.3 mg/L.

What are the health effects of lead and how can I reduce my exposure?
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. [NAME OF SYSTEM] is responsible for providing drinking water that meets all federal and state standards, 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 the water and using only cold water for drinking or cooking. Information on lead in drinking water and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead*.
When replacing your bathroom or kitchen faucet, consider a "lead-free" faucet that meets NSF/ANSI Standard 61 Annex G, which is less than 0.25% lead by weight.

What are the health effects of copper and how can I reduce my exposure?
Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. Flushing your tap before using the water as previously described will also reduce copper levels.

Who can I contact at my water system for more information?
Phone number at our public water supply system: (205) 755-7949 or 800-308-7949
E-mail address at our public water supply system: *lindamws@bellsouth.net*

Consumer Notice Instructions: Community PWS

Per the Lead & Copper Rule consumer notice requirements, you must complete the lead consumer notice, distribute the notice to each home or building that was tested with its specific lead result, and submit a certification of your activities and a copy of the notice to ADEM.

Consumer Notice Content
You are required to provide the consumer notice to consumers who occupy homes or buildings that are part of your system's lead & copper monitoring program with the analytical results when their drinking water is tested for lead, including those who do not receive water bills. The Consumer Notice must include the mandatory language in the example provided with these instructions. It must be multilingual, where appropriate.

Distribution of the Consumer Notice
Within 30 days of receiving the analytical results from the laboratory, you must provide the required notice to the people served at each residence or building that was a part of the sampling plan. This can be accomplished through direct mail, including it with the water utility bill, or by hand delivery.

Multi-family dwellings: Where testing occurs in buildings with many units, such as an apartment building, the notice must be provided to each individual unit that was tested. The notice does not have to extend to the entire building.

If you wish to use an alternate method that would still meet the requirements, contact the ADEM to discuss the method, prior to conducting the notice.

Date completed:_____*(enclose a copy of notice)*

Delivery Certification

I certify under penalty of law that I am familiar with the information submitted in this document and that it is true, accurate, and complete.

Name (print or type)_____**Title** _____

Signature_____**Date**_____