

Lead and Copper Monitoring Plan/Materials Inventory

Albertville Utilities Board
PWSID AL0000933

Developed in collaboration with



3516 Greensboro Avenue
Tuscaloosa, AL 35401

geotechnical • analytical • materials • environmental

Submitted to ADEM
May 2016

ALBERTVILLE UTILITIES BOARD

Lead and Copper Monitoring Plan/Materials Inventory

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ALBERTVILLE UTILITIES BOARD Lead and Copper Monitoring Plan

This Lead and Copper Monitoring Plan was prepared by Albertville Utilities Board with assistance from TTL, Inc. and submitted to the Alabama Department of Environmental Management to meet the EPA and State requirements for the Lead and Copper Rule.

The primary objective of the Lead/Copper Rule (LCR) is to protect the public from contaminants resulting from corrosion in the distribution system. The LCR requires public-supply drinking water to meet compliance levels established for Lead and Copper (Section 10) and to provide corrosion control treatment to minimize corrosivity within distribution system pipes.

1. PUBLIC WATER SYSTEM (PWS) INFORMATION

Albertville Utilities Board is currently on reduced monitoring for Lead and Copper and is required by ADEM (*Alabama Department of Environmental Management*) to test for Lead and Copper every three years. The samples are analyzed by TTL, Inc., located in Tuscaloosa Alabama.

Plan Submitted To	Laura Taylor, ADEM				
Date Submitted	May 2016				
PWSID	AL0000933				
PWS Name	Albertville Utilities Board				
PWS Address	P. O. Box 130				
City	Albertville	State	AL	Zip	35950
System Type	CWS				
Source Water Type	Surface Water				
Water Sources	Short Creek portion of Lake Guntersville				
Buy/Sell	Sell to Albertville, Boaz, Collinsville, Sardis, Guntersville, Asbury, and Northeast (Other systems may receive our water from one of these systems)				
ADEM Contact	Ronnie McCullars	Title	Water Superintendent		
Phone	256-878-3761	Fax	256-891-0537		
Email	rmccullars@mub-albertville.com	Mobile	256-264-5508		
Customer Contact	Larry Matthews	Title	WTP Assistant Manager		
Phone	256-878-3762				
Population Served	Approximately 27,000				
Monitoring Frequency	Reduced monitoring - Triennial				
Monitoring Period	June 1 through September 30				
Number of Samples	Thirty (30)				

2. SOURCE WATER TREATMENT

Some PWSs are required to provide corrosion control for the following reasons:

- Protect public health
- Improve water quality
- Extend the life of equipment
- Meet federal and state regulations

This PWS obtains ADEM guidance and approval on corrosion treatments and any changes to the stabilization process. Complicated interactions may occur in the control of water corrosion and scaling; e.g., a simple change to improve one characteristic may have an adverse effect on some other water characteristic or treatment process.

Albertville Utilities Board: Our source water is treated at two conventional filtration plants. The “old” WTP is permitted for 12 MGD and the “new” WTP at 9 MGD. The treatment processes includes coagulation, flocculation, and filtration, followed by chlorination.

To render the water non-corrosive, we treat the source water with sodium hydroxide (caustic soda) to increase total alkalinity and pH to desired levels. We use the Baylis Curve method of determining whether the pH and alkalinity are properly adjusted to produce stable, non-corrosive water.

3. LABORATORY

Primary Laboratory	TTL, Inc.	Contact	Steve Martin
	3516 Greensboro Avenue	Phone	205-345-0816
	Tuscaloosa, AL 35401	Fax	205-3473-0635
		Email	smartin@ttlusa.com
Secondary Laboratory	Eurofins Eaton Analytical, Inc.	Contact	Traci J. Chlebowski
	110 South Hill Street	Phone	574-472-5567
	South Bend, IN 46617	Fax	574-472-5567
		Email	TraciChlebowski@EurofinsUS.com
Regulatory Agency	Alabama Department of Environmental Management (ADEM)		

4. MONITORING SITE SELECTION (from the ADEM 335-7-11-.06 and .07)

The standard number of required Lead and Copper (LAC) monitoring sites to be sampled each monitoring period is based on population served. A public water system that has fewer than five drinking water taps that can be used for human consumption shall collect at least one sample from each tap and then shall collect additional samples from those taps on different days during the monitoring period to meet the required minimum number of sample sites list in Table 4-1. Under no circumstance can a water system reduce the minimum number of samples below 5 per monitoring period.

Table 4-1: Required Number of Lead/Copper Monitoring Sites

LEAD/COPPER MONITORING SITES		
Population *	Initial Monitoring Sites	Reduced Monitoring Sites
>100,000	100	50
10,001 – 100,000	60	30
3,301 – 10,000	40	20
501 – 3,300	20	10
101 – 500	10	5
<100	5	5

* For the purposes of this monitoring plan, the population served is the sum of the number of permanent residents and the number of additional non-transient persons to whom the system is available, such as school children, office and commercial employees, and seasonal residents.

All public water supplies must complete a materials evaluation of their system to identify sample sites that meet the Tier criteria. Sample collection sites must be selected from available Tier 1 sites first (Table 4-2). If there are not a sufficient number of Tier 1 sampling sites available, then a community water system (CWS) may utilize Tier 2 sites. If there are not a sufficient number of Tier 1 and Tier 2 sampling sites available, then a system may utilize Tier 3 sites.

Any CWS that cannot complete its sampling at sites that meet the above the criteria must complete sampling at representative sites throughout the distribution system. These sites must have plumbing similar to that used at other sites served by the water system.

Note for those systems that have lead service lines: 50% of the samples must be collected from sites with lead service lines. Monitoring shall be conducted from the lead service line. Should a sufficient number of sites be unavailable to provide 50% of the required monitoring, written documentation is necessary to demonstrate why the system was unable to locate a sufficient number of such sites.

Table 4-2: Monitoring Site Selection

Monitoring Site Selection Tier Criteria		
Tier 1 Sites	single family structures	copper pipe with lead solder constructed after 1982, lead pipes, or lead service lines
Tier 2 Sites	buildings and multiple family structures	copper pipe with lead solder constructed after 1982, lead pipes, or lead service lines
Tier 3 Sites	single family structures	copper pipes with lead solder installed before 1983.
Representative sites throughout the distribution system		plumbing materials that are commonly found throughout system

Standard Monitoring:

All new community and NTNC water systems shall monitor for Lead and Copper at the number of established monitoring sites for two consecutive six-month monitoring periods starting the first six-month period the system is in operation. All systems on standard monitoring shall use the number of standard monitoring sites shown in Table 4-1.

Any community and NTNC water system that exceeds a Lead or Copper Action Level shall monitor for Lead and Copper at the number of established monitoring sites during at least two consecutive six-month compliance periods.

Reduced Monitoring:

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 *Lead* results, arrange the sampling sites in order from highest to lowest levels
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).

You must return to these same sites for each reduced sampling period.

Reduced – Annual:

Reduced monitoring refers to monitoring that occurs at a reduced frequency and a reduced number of sample locations. Any water system which has demonstrated satisfactory Action Levels and maintains the range of values for the water quality control parameters specified by the ADEM during both initial six-month monitoring periods may reduce monitoring sites and frequency of monitoring to once per year if it receives written approval from the ADEM. The reduced monitoring shall begin during the year immediately following the end of the second consecutive six month monitoring period. Annual reduced monitoring must be performed during June, July, August, or September unless the water system receives written approval from the Department for an alternative monitoring period.

Reduced - Triennial:

A system can qualify for triennial monitoring (testing only once per three years) after two consecutive six-month monitoring periods and two years of annual monitoring if:

- The 90th percentile lead level is at or below 0.015 mg/L for both six-month monitoring periods and both annual monitoring periods; and
- The 90th percentile copper level is at or below 1.3 mg/L for both six-month monitoring periods and both annual monitoring periods; and
- They CWS has been given written approval from the ADEM

A system can also qualify for triennial monitoring after two consecutive six-month monitoring periods if:

- The 90th percentile lead level is at or below 0.005 mg/L for both six-month monitoring periods; and
- The 90th percentile copper level is at or below 0.65 mg/L for both six-month monitoring periods; and
- They CWS has been given written approval from the ADEM

Systems monitoring on reduced monitoring shall use the number of reduced monitoring sites shown in Table 4-1. All monitoring must be taken from sample sites specified in this monitoring plan and must be collected during June, July, August, or September unless the water system receives written approval from the Department for an alternative monitoring period.

Monitoring Waivers: Systems with *full waivers* on LAC monitoring must conduct reduced Lead and Copper tap monitoring once every nine years.

Returning to Standard Monitoring: If a PWS on reduced monitoring exceeds compliance on the Lead AL or has an Optimal Water Quality Parameters (OWQP) excursion during any reduced monitoring period, the PWS is required to conduct Water Quality Parameter (WQP) monitoring in accordance with ADEM 335-7-11-.11 Action Level Non-Compliance 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 (see Section 10).

5. PWS INSTRUCTIONS FOR PROPER SAMPLE COLLECTION

These instructions will be followed by the PWS each Lead/Copper monitoring period. Start planning early to allow plenty of time to accomplish LAC monitoring, analysis, and reporting.

Residential samples shall be collected by the consumers at the addresses (sample sites) specified in this plan (Table 7-1).

- Make contact with the sample site residents prior to sampling months to determine whether their home still meets proper selection criteria.
- Make arrangements with the customer for delivery and pick up of the sample bottle and instructions.
- Instruct residents to collect Lead/Copper samples early in the monitoring period to ensure samples will arrive at the lab in a timely fashion and are analyzed well before the end of the monitoring period.
- Provide each of the residences to be sampled with a zip lock plastic bag containing a wide-mouth one liter bottle and a copy of the *Customer Instructions for Proper Sample Collection* [section 7, page 9]. This Customer Instruction sheet is filed in the possession of the PWS. Do not send the sheet to the lab.
- With a permanent marker such as a Sharpie, write the PWS name and sample site ID on the bottle. Write the corresponding Sample Site ID number in the top right corner on each Customer Instructions sheet.
- Instruct the consumers to call the water system with any questions.

The samples are NOT to be taken at:

- A tap at a site which is has been recently vacant
- A site where the owner or resident is known to be uncooperative or hostile
- A site which has undergone recent (within the last 6 months) plumbing improvements or changes including faucets at the specific sample location
- A mop sink, outside faucet, or a tap that is not generally used or intended for human consumption.
- A tap that has any type of point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants. This includes such devices as filters, softeners, RO systems, etc.

The first draw residential samples must 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. 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.

Samples must *not* be collected from outside spigots, water fountains, or sites with a treatment device or an additional form of water treatment. Instructions will specify that sampling will occur only after the water has been motionless in the plumbing system for at least six hours prior to collection. The consumers will be instructed to take the sample first thing in the morning from an indoor kitchen or bathroom sink that is used on a daily basis. Note: The tap must *not* be flushed prior to taking the sample. While the water must be motionless for at least six hours prior to collection, 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.

On the date pre-arranged with the customers, pick up the sample from the residence. Review the customer sheet and sample bottle to ensure all appropriate signed information is obtained and the sample is the required amount (1 Litre). If a sample is not ready, leave a reminder note of your next scheduled pickup date. Continue this process until all samples are obtained.

Use a pen (*PLEASE PRINT LEGIBLY*) to fill in the Chain of Custody (COC) completely and properly. (See completed COC example on the back of this sheet.) "Relinquished By" is signed with date and time by you when you relinquish the samples to the Lab. "Received By" is signed with date and time by personnel at the lab upon receipt of the samples. The lines for sample relinquishment shall be signed *each time* the samples are transferred to another person.

Return *ONLY* the *Chain of Custody* with the samples. Keep your Pb/Cu sample site list, the *Lead/Copper Sample Collection Procedures for Water Systems*, the signed customer instruction sheet, and the pink copy of the *Chain of Custody* for your records. Put any extra containers back in the cooler or box before shipping to the Lab. This will help to fill space and prevent damage to your water samples during shipment.


Store the samples in a cool, dark area until they are transported to the lab. Ice is not necessary. Lead and Copper samples have a 14 day holding time. Use zip-lock bags to keep things dry. Call John Tillie or Susie Hetzler at TTL at 205-345-0816 with any questions.

CAUTION

The PWS is ultimately responsible for the LAC sample result. Improper sampling by a resident may not be grounds for invalidation of a sample result by the ADEM. The PWS will provide clear instructions to the residents and thoroughly review the information and comments provided on the sample sheet prior to submitting the sample to the laboratory.

Table 5-1: Properly Completed Chain of Custody (COC)

Sheet _____ of _____



Chain of Custody Form

Client: Anytown Water Works

Contact: John Q. Smith

Mailing Address: 123 Any Street

City, State, Zip: Anytown, AL 55555

Phone No.: 205-555-5555

Date: 06-01-16

Sampled By: Customers

Sample Site: Homes

TTL Job No.: _____

Sample Security Requirements

1. Condition of Contents: _____

Sealed for Shipping By: _____

Initial Contents Temp.: _____ °C Seal Applied Yes _____ No _____

Sampling Status: Complete _____ Expected Completion Date _____

Custody Seal Intact Upon Receipt by Laboratory: Yes _____ No _____

6. Condition of Contents: _____

Comments: _____

8. Reporting Status: Routine; ASAP By _____ Rush By _____

Date	Time	Sample ID/Description	Sample Type <small>Solid, Etc.</small>	Method <small>Grab, Comp</small>	# of Containers	Preservatives	Analysis Parameters
		Samples 1 through 20	Water		20	None	Lead and Copper

Relinquished by: (signed) _____ Date/Time _____

1 _____

2 _____

3 _____

4 _____

SHIPPING DETAILS

Air Bill #: _____

Method of Shipment: _____

Received By Lab: _____

Date/Time: _____

CUSTODY TRANSFERS PRIOR TO SHIPPING

Received by (signed) _____ Date/Time _____

1 _____

2 _____

3 _____

4 _____

NOTE: Please read terms and conditions between TTL, Inc. and client on back of form.

TTL, Inc. - Tuscaloosa Office/Laboratory: 3516 Greensboro Avenue, Tuscaloosa, Alabama 35401, Telephone (205) 345-0816, FAX (205) 343-0609
 TTL, Inc. - Montgomery Office: 4154 Lomac Street, Montgomery, Alabama 36106, Telephone (334) 244-0766, FAX (334) 244-6668

6. CONSUMER INSTRUCTIONS FOR PROPER SAMPLE COLLECTION

Sample ID# _____

Important: please follow these directions carefully to ensure that the Lead and Copper results at your residence will be as accurate as possible.

These samples are being collected to determine the Lead and Copper levels in your tap water. This sampling effort is required by the US Environmental Protection Agency (EPA) and the Alabama Department of Environmental Management (ADEM) and is being accomplished through a collaboration between the public water system and their consumers (e.g. residents).

We (the water system) will make arrangements with you to deliver the sample bottle to you and to pick up the sample after collection.

Please use only a cold water tap that is used for human consumption, such as the tap in your kitchen or bathroom. Collect samples from a cold water tap that has not been used for at least 6 hours. The best time to sample is usually first thing in the morning or in the evening upon returning from work.

Lead and Copper Sampling “DO NOT”:

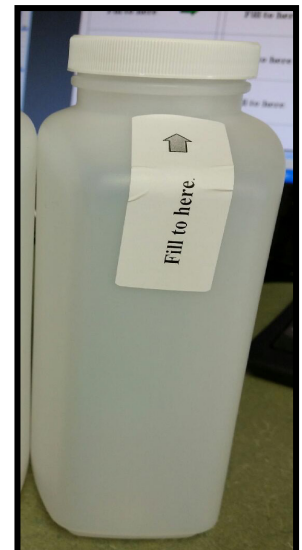
- Do not intentionally flush the water line before the start of the 6-hour period.
- Do not run the faucet at all just before collecting the sample.
- Do not use a mop sink, outside faucet, or a tap that is not generally used or intended for human consumption.
- Do not use a faucet at a site which is vacant or from which you have recently been absent.
- Do not use a faucet at a site which has undergone recent (within the last 6 months) plumbing changes
- Do not sample from a tap which is attached to a water softener, filter, or any type of treatment device.
- Do not remove the aerator (screw-on cap at end of faucet) before sampling.

Lead and Copper Sampling Instructions – “DO”:

- Use a kitchen or bathroom cold water faucet for sampling.
- Place the opened sample bottle below the faucet and open the cold water tap to the same flow you would to fill a glass of water.
- Fill the sample bottle to the bottom of the bottle neck. (The bottle provided has a sticker with an arrow pointing to the neck. See photo below.)
- Cap the sample bottle tightly and put the bottle back in the zip lock bag provided.
- Please complete the table at the bottom of this page and include it with the sample.
- Place the *sample bottle and this sheet* in the pick-up location previously arranged with the water system.

Results from the Lead and Copper monitoring at your residence will be provided to you by the water system as soon as practical but no later than 30 days after the system is notified of the sample results. However, if excessive levels of lead or copper are detected, you will be notified immediately after analysis (usually one or two days after the system learns of the tap monitoring results).

Thank you for your help!



To be completed by the resident and included with the sample:		
Sample site location and faucet used: (e.g., kitchen sink, bathroom sink)		
Water was last used	Time:	Date:
Sample was collected	Time:	Date:
<i>I have read the above directions and have taken a tap sample according to these instructions.</i>		
Signature:		Date:

Please call Larry Matthews at Albertville Utilities Board at 256-878-3762 if you have any questions about these sampling procedures.

NOTE TO WATER SYSTEM:
After sample collection, keep this sheet in your possession. The lab does not need it.

7. LEAD AND COPPER SAMPLE SITES

At the time of sampling, each of the customers in Table 7-1 (and alternates in 7-2, if applicable) will be given a copy of the *Customer Instructions for Proper Sample Collection* in section 7 of this plan and will be instructed to call the water system with any questions.

Table 7-1: Primary Lead/Copper Sample Sites

Primary Lead and Copper Sample Sites						
Sample ID	Sample Site Address	Type of Structure *	Lead Service Line (YES or NO)	Tier	Year of Plumbing	Plumbing Materials
1	Sheila Atchley 331 O'Hara Dr.	SFR	NO	1	1988	copper
2	Yantci Maddux 326 O'Hara Dr.	SFR	NO	1	1988	copper
3	Brenda Aden 613 Powell Blvd.	SFR	NO	1	1988	copper
4	Gregory Sallas 1505 Jason St.	SFR	NO	1	1986	copper
5	David Mizzel 610 Eastview St.	SFR	NO	1	1985	copper
6	Richard Brothers 612 Eastview St.	SFR	NO	1	1988	copper
7	Charles Traylor 113 Mary Ave.	SFR	NO	1	1988	copper
8	Tammy Jones 115 Mary Ave.	SFR	NO	1	1988	copper
9	Alice Strange 114 Mary Ave.	SFR	NO	1	1988	copper
10	Ronnie Paige 280 Mitchell Ave.	SFR	NO	1	1988	copper
11	Carrie Chambers 318 Cahill Rd.	SFR	NO	1	1988	copper
12	Amanda Rowland 310 Cahill Rd.	SFR	NO	1	1988	copper
13	Verna Sims 312 Cahill Rd.	SFR	NO	1	1988	copper
14	Glenn Hunter 809 Linda St.	SFR	NO	1	1988	copper
15	Charlotte Maze 904 Linda St.	SFR	NO	1	1988	copper
16	Richard Soper 905 Linda St.	SFR	NO	1	1988	copper
17	Ray Osborne 806 Kerry St.	SFR	NO	1	1988	copper
18	Sarah Alexander 807 Kerry St.	SFR	NO	1	1986	copper
19	Bobby Cannady 512 Brad Ave.	SFR	NO	1	1986	copper
20	Robert Grimes 1710 Cherokee Dr.	SFR	NO	1	1988	copper

21	J.D. Taylor 902 Linda St.	SFR	NO	1	1985	copper
22	Camiere Henrietta 330 O'Hara Dr.	SFR	NO	1	1988	copper
23	Kim Armstrong 328 O'Hara Dr.	SFR	NO	1	1988	copper
24	John Allen 335 O'Hara Dr.	SFR	NO	1	1988	copper
25	Racheal Holbrooks 508 Brad Ave.	SFR	NO	1	1988	copper
26	Brian Massey 333 O'Hara Dr.	SFR	NO	1	1988	copper
27	Trena Gibson 327 O'Hara Dr.	SFR	NO	1	1988	copper
28	Ellen Snow 309 O'Hara Dr.	SFR	NO	1	1987	copper
29	Teresa Winters 506 Brad Ave.	SFR	NO	1	1988	copper
30	R.F. Boss 475 Fairview Est.	SFR	NO	1	1987	Copper
Single Family Residence – SFR Multi-Family Residence – MFR Building - B						

Table 7-2: Alternate Lead/Copper Sample Sites

Alternate Lead/Copper Sample Sites						
Sample ID	Sample Site Address	Type of Structure *	Lead Service Line (YES or NO)	Tier	Year of Plumbing	Plumbing Materials
A-1	Nancy Jo Wiley 334 O'Hara Dr.	SFR	NO	1	1988	copper
A-2	Nicholas E. Dixon III 322 O'Hara Dr.	SFR	NO	1	1988	copper
A-3	Jeremy D. Slaton 612 Powell Blvd.	SFR	NO	1	1988	copper
A-4	Joshua L. Rutledge 1506 Jason St.	SFR	NO	1	1986	copper
A-5	Linda Painter 607 Eastview St.	SFR	NO	1	1985	copper
A-6	Jeni Filteau 605 Eastview St.	SFR	NO	1	1988	copper
A-7	Rachel Mendoza 111 Mary Ave.	SFR	NO	1	1988	copper
A-8	Steven Ewing 117 Mary Ave.	SFR	NO	1	1988	copper
A-9	Jacqueline Charles 110 Mary Ave.	SFR	NO	1	1988	copper
A-10	Nadine Z. Lamotte 254 Mitchell Ave.	SFR	NO	1	1988	copper
A-11	Donald J. Starnes 316 Cahill Rd.	SFR	NO	1	1988	copper
A-12	Ann W. Bearden 311 Cahill Rd.	SFR	NO	1	1988	copper
A-13	Cindy S. Long 314 Cahill Rd.	SFR	NO	1	1988	copper
A-14	Jason W. McCullars 806 Linda St.	SFR	NO	1	1988	copper
A-15	Joshua Reed 908 Linda St.	SFR	NO	1	1988	copper
A-16	Mary F. Sampson 910 Linda St.	SFR	NO	1	1988	copper
A-17	Adelaido Ulloa 805 Kerry St.	SFR	NO	1	1988	copper
A-18	George D. Whitmire 808 Kerry St.	SFR	NO	1	1986	copper
A-19	Allen W. Vandergriff 515 Brad Ave.	SFR	NO	1	1986	copper
A-20	Lara Lange 1708 Cherokee Dr.	SFR	NO	1	1988	copper
A-21	Kevin Soper 901 Linda St.	SFR	NO	1	1985	copper
A-22	John Sorrough 332 O'Hara Dr.	SFR	NO	1	1988	copper
A-23	Christi Brown 329 O'Hara Dr.	SFR	NO	1	1988	copper

A-24	Amanda Croy 216 O'Hara Dr.	SFR	NO	1	1988	copper
A-25	Candice Talley 510 Brad Ave.	SFR	NO	1	1988	copper
A-26	John W. Grimes 211 O'Hara Dr.	SFR	NO	1	1988	copper
A-27	Brittany H. Riddle 324 O'Hara Dr.	SFR	NO	1	1988	copper
A-28	Yoshiuki Hamai 310 O'Hara Dr.	SFR	NO	1	1987	copper
A-29	Michael A. Renfro 509 Brad Ave.	SFR	NO	1	1988	copper
A-30	Rickey Whitehead 512 Fairview Est.	SFR	NO	1	1987	copper
Single Family Residence – SFR Multi-Family Residence – MFR Building - B						

8. CALCULATING COMPLIANCE

ADEM Form 405 (Table 8.1) must be completed and submitted to ADEM and to the local health department(s) within 10 days following the LAC monitoring period. (Keep a copy for your records.) Water systems will complete ADEM Form 405 with results of Lead and Copper monitoring and will use the results to calculate the 90th percentile, explained below.

PWS Collecting 6 or More Samples. A PWS collecting *more* than 5 samples will calculate the 90th percentile as follows

- Rank 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 is the 90th percentile.
- If the number is not a whole number, round to the nearest whole number. (Examples: 12.7 would be rounded to 13.0 and 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. (Examples: 12.5 would be rounded to 12.0 and 13.5 would be rounded to 14.0)

Example for a PWS Collecting 10 Samples:

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

Calculate $10 \times 0.9 = 9$

Sample #9, 0.008 mg/L, is the number to be noted on ADEM Form 405 as the 90th percentile and reported to ADEM.

*Please note that the above tables are examples only.
You will complete ADEM Form 405 with the results from your PWS's LAC monitoring.*

PWS Collecting 5 Samples. A PWS collecting 5 samples will calculate the 90th percentile as follows:

- Rank 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 considered the 90th percentile

Example for a PWS collecting 5 samples:

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

Calculate: $0.008 + 0.014 = 0.022$

$0.022 / 2 = 0.011$

90th percentile = **0.011 mg/l**

0.011 mg/L is the number to be noted on ADEM Form 405 as the 90th percentile and reported to the ADEM.

If Lead concentrations exceed the AL of 15 ppb or Copper concentrations exceed the AL of 1.3 ppm in more than 10% of customer taps sampled, the system must undertake a number of additional actions to control corrosion.

Table 8-1: ADEM Form 405, Lead/Copper Results (2 pages)

Instructions: Please list sample sites and results in ascending order from lowest sample result to highest sample result, and circle or highlight your 90th percentile sample result.

ADEM Form #405

Lead and copper Monitoring Data Report

COPPER RESULTS

System Name and PWSID # _____

Monitoring Period _____

Name and Address of Customer	Tier 1,2, or3	Lead Service Line Sample Yes or No	Date of Collection	Date of Analysis	Copper Results (mg/l)	Year of Plumbing
------------------------------	---------------	------------------------------------	--------------------	------------------	-----------------------	------------------

_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

_____	_____	_____	_____	_____	_____	_____
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copy for additional sites if necessary

9. REPORTING REQUIREMENTS

All PWSs must now provide written Lead and Copper sampling results to the customers who reside at the LAC monitoring sites. Further, PWS must submit certification to ADEM that consumer notification was performed.

Consumer Notification of Lead/Copper Tap Monitoring Results: Within 30 days of the PWS receiving the lab report, both pages of the Consumer Notification of Lead/Copper Tap Monitoring Results (Table 9-1) must be provided to customers (tap sample sites). The Consumer Notification form must include:

- Lead/Copper monitoring results for that location
- 90th percentile of results for Lead/Copper
- Explanation of health effects of Lead (specific language in ADEM Chapter 335-7-11, Appendix C)
- Steps consumer can take to reduce exposure to Lead in drinking water
- What happened (if an exceedance occurred)?
- What is being done (if an exceedance occurred)?
- Name of the person to contact at the PWS for more information

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.

ADEM Form 405: Within 10 days after the monitoring period (by October 10th), PWS must submit the lab monitoring results and the completed Form 405 (Table 8.1) to ADEM.

Lead/Copper Results Delivery Certification: Within 90 days of the monitoring period, system must also provide *certification* (Table 9-2) to ADEM that notification was performed. Include copies of the notification form used.

It is recommended that the PWS submit the following to ADEM by October 10th:

- Lab monitoring report
- ADEM Form 405 (Tables 9-1 and 9-2)
- Copies of the Consumer Notification of Lead/Copper Tap Monitoring Results (Table 9-1)
- Lead and Copper Results Delivery Certification form (Table 9-2)

Table 9-1: Consumer Notification of Lead/Copper Tap Monitoring Results

Date	
From	(water system)
To	(customer)

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: _____

Contaminant	Action Level	Unit of Measurement	Results at your home	90 th percentile*	Compliance Violation? (YES or NO)
Lead	0.015	mg/l			
Copper	1.3	mg/l			

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. Some individual homes may have high lead concentrations while the 90th percentile value for the entire waterworks is below the Action Level. These individual site lead levels may be due to conditions unique to the individual home, such as the presence of lead solder or brass faucets, fittings and valves that may contain lead. This water 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. Our waterworks strives to keep the corrosivity of our water as low as possible (corrosive water can cause lead to leach from plumbing materials that contain lead).

Lead levels in your drinking water are likely to be higher if:

- Your home or water system has lead pipes, or
- Your home has faucets or fittings made of brass which contains some lead, or
- Your home has copper pipes with lead solder and you have naturally soft water, and
- Water often sits in the pipes for several hours.

How can I reduce my exposure? We strongly urge you to review the enclosed Fact Sheet and take the steps listed to reduce your exposure to lead in drinking water. These recommended actions are very important to the health of your family.

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>.

If you have any questions, contact _____ at _____ (phone).

Sincerely,

Fact Sheet: LEAD IN DRINKING WATER

Important Information on How to Protect Your Health

Lead is a common metal that has been in many consumer products but is now known to be harmful to human health if ingested or inhaled. It can be found in lead-based paint, air, soil, household dust, food, some types of pottery, and drinking water. Lead is rarely found in natural sources of water such as rivers, lakes, wells or springs.

What Are The Health Effects of Lead? When people come in contact with lead, it may enter their bodies and accumulate over time, resulting in 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. Lead in water can be a special problem for infants, whose diets may be mostly liquids, such as baby formulas or concentrated juices mixed with water. Smaller bodies can absorb lead more rapidly than bigger ones, so amounts of lead that won't hurt an adult can be very harmful to a child and scientists have linked the effects of lead on the brain with lowered IQ in children. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Adults who drink this water over many years could develop kidney problems or high blood pressure.

What Are The Sources of Lead? The primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil. Exposure to lead is a significant health concern, especially for young children and infants whose growing bodies tend to absorb more lead than the average adult. If you are concerned about lead exposure, parents should ask their health care providers about testing children for high levels of lead in the blood.

What Can I Do To Reduce Exposure to Lead in Drinking Water? Lead may work its way into drinking water after the water entered the distribution system and is on its way to consumers taps. This usually happens through the corrosion of materials containing lead in household plumbing. These materials include brass faucets, lead solder on copper pipes, lead pipes, or lead service lines connecting the water main to the inside plumbing. Lead pipes are no longer installed for service lines or in household plumbing and lead solder has been outlawed in Virginia since 1985.

There are several steps you can take to reduce your exposure to lead in drinking water. These include:

1. **Run your water to flush out lead.** If water hasn't been used for several hours, allow the water to run at the tap for 15-30 seconds or until it becomes cold or reaches a steady temperature before using it for drinking or cooking. This flushes lead-containing water from the pipes. The water you run from drinking water taps does not have to be wasted. You can use this water for cleaning purposes or for watering plants. You may want to keep a container of drinking water in your refrigerator, so you don't have to run water every time you need it.
2. **Use cold water for cooking and especially for preparing baby formula.** Do not cook with or drink water from the hot water tap as lead dissolves more easily into hot water. *Do not use water from the hot water tap to make baby formula.*
3. **Do not boil water to remove lead.** Boiling water will not reduce lead.
4. **Look for alternative sources or treatment of water.** You may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact the National Sanitation Foundation at 800-NSF-8010 or www.nsf.org for information on performance standards for water filters. If you choose to install a lead removal filter, be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality.
5. **Get your child tested.** Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.
6. **Identify if your plumbing fixtures contain lead.** New brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The new lead regulation lowered the maximum lead content of plumbing products from 8.0% to 0.25%, when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.
7. When replacing your bathroom or kitchen faucet, consider a "lead-free" faucet that meets NSF/ANSI Standard 61 Annex G (California), which is less than 0.25% lead by weight
8. Visit the National Sanitation Foundation Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, call your water system, or contact your health care provider.

Table 9-2: Lead and Copper Results Delivery Certification

Lead and Copper Results Delivery Certification Consumer Notification Completion Report

PWS Name: _____ PWSID: _____

Population: _____

DELIVERY METHOD

Waterworks serving a population greater than 3,300 people:

The occupants of each lead and copper sampling location were notified by U.S. Mail on _____ (date).

Waterworks serving a population of 3,300 or fewer people (choose either delivery method):

The occupants of each lead sampling location were notified by U.S. Mail on _____ (date).

The occupants of each lead sampling location were notified by hand/direct delivery on _____ (date).

I certify that each residence from where lead and copper tap water samples were collected has been informed of their lead and copper monitoring results along with the following information: MCLGs, ALs and their definitions, a fact sheet on the health effects of lead which includes steps to reduce exposure to lead in drinking water, and contact information for the water utility. I further certify that notification was completed within 30 days after our system learned of the results from the Office of Drinking Water, and that if the residence is a rental property, both the occupant(s) and rental property owner were notified.

Signature: _____ Print Name: _____

Job Title: _____ Phone: _____ Date: _____

INSTRUCTIONS:

- 1. Complete this form.**
- 2. Include with this form a completed copy of the following documents:**
 - The “Consumer Notification of Lead/Copper Tap Monitoring Results”
 - The “ADEM Form 405”
 - Your Lead/Copper monitoring results from your lab
- 3. Within three months from the end of the monitoring period, mail this form with attachments to:**

**Alabama Department of Environmental Management
P. O. Box 301463
Montgomery, AL 36130-1463**

ATTENTION: Ms. Laura Taylor

10. ACTION LEVEL EXCEEDANCE

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.

If Lead concentrations exceed the AL of 0.015 mg/L or Copper concentrations exceed the AL of 1.3 ppm in more than 10% of customer taps sampled, the system must contact ADEM immediately and must undertake a number of additional actions to control corrosion.

The PWS will be required to conduct Water Quality Parameter (WQP) monitoring in accordance with ADEM 335-7-11-.11 Action Level Non-Compliance 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.

The following summary of ADEM 335-7-11-.11 is not comprehensive. After an AL exceedance, the PWS is required to comply with the regulation in its entirety.

- PWS must install, maintain, and monitor adequate corrosion control treatment
- Establish water quality parameters and report WQP on the MOR by the 10th of the following month.
- Exceedance of the established parameter values is considered a treatment technique violation.
- Monitor Lead and Copper levels in the source water serving the areas in question. If out of compliance, the source must be taken out of service, treated satisfactorily, and approved by the Department.
- If the PWS fails to meet the lead/copper compliance limit after the installation of corrosion control, the PWS must develop a program to identify and replace lead service lines.
- At least 7% shall be replaced on an annual basis. In some instances, ADEM may require more rapid replacement
- PWS exceeding the AL for lead shall also deliver public educational materials according to the methods specified in ADEM 335-7-11-.17.

11. PUBLIC EDUCATION REQUIREMENTS

If either the lead or copper Action Level IS EXCEEDED at the 90th percentile during any reduced monitoring period, the PWS is required to deliver Public Education (PE) materials w/in 60 days after learning of the exceedance.

To comply with the PE requirements, the PWS:

- Develop PE materials and obtain prior ADEM approval of them
- Must notify billing customers by mail
- Must make "good faith effort" at reaching at-risk populations
- Must report Lead AL exceedance in the Consumer Confidence Report (CCR)
- Must notify local health agencies by phone or in person
- Within 180 days, must analyze the treated water for the contaminant using the same method and location as required for inorganic contaminants
- ADEM may require other public education requirements (consult with ADEM)

12. ADVANCED NOTIFICATION OF LONG TERM TREATMENT CHANGES

PWSs must provide *advanced* report to ADEM of intended significant changes in treatment or source *and* ADEM must approve planned changes. Examples of significant treatment changes are:

- Change in source water or change in water quality
- Changes in chemical dosing that would cause long-term effects on finished water pH, alkalinity, or otherwise increase corrosion

ADEM approval is not necessary for operational or daily small adjustments. The PWS should consult ADEM if there are any changes to operation or treatment.

13. CHANGES AND UPDATES TO MONITORING PLAN

Changes to Sample Sites:

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 the house is not inhabited year round
- If the resident is known to be hostile or uncooperative
- If a softener or other treatment is added or if plumbing upgrades have been made. (These changes would mean the structure no longer meets the Tier criteria.)

However, a *written request* to change a site address must be submitted to the ADEM using the Request to Change LAC Monitoring Sites Form (Table 15-1) or another similar form. This may be submitted by mail or email.

Updates to LAC Monitoring Plan:

The Lead and Copper plan must be updated when there is an addition or deletion of a site. It should be updated when there is a population change that increases the number of LAC samples the PWS is required to take.

The Distribution Materials Inventory in Section 12 should be kept updated as more is learned about components of the distribution system (for instance, if during maintenance the PWS finds previously unknown lead service lines or other components).

Table 13-1: Request to change Lead/Copper Sampling Site

Request must be sent to Ms. Laura Taylor at ADEM *prior* to sampling for Lead/Copper.
 Email and mailing address are below:

lat@adem.state.al.us

Alabama Department of Environmental Management
 P. O. Box 301463
 Montgomery, AL 36130-1463
 ATTENTION: Ms. Laura Taylor

Name of PWS	PWSID#
Most recent date of Lead/Copper sampling	

OLD MONITORING SITE ADDRESS

1.		2.		3.	
----	--	----	--	----	--

PROPOSED NEW MONITORING SITE ADDRESS

1.		2.		3.	
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SAMPLE SITE SELECTION CRITERIA – OLD SITE

1.		2.		3.	
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SAMPLE SITE SELECTION CRITERIA – NEW SITE

1.		2.		3.	
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Signature and Title (PWS Representative)

Signature and Title (PWS Representative)	Date

Request Granted (ADEM Representative)

Request Granted (ADEM Representative)	Date

14. DISTRIBUTION MATERIALS INVENTORY

Upon completion and submittal (to ADEM) of the materials inventory, the PWS will make the information available to the public by posting it on the PWS's public website and will include a summary in the annual CCR report to our customers. If the PWS doesn't maintain a website, ADEM's website will post the inventory for public access. The PWS will update this materials inventory as new information comes to light.

Albertville Utilities Board:

Note: This Distribution Materials Inventory may not be all-inclusive. This information was compiled to the best of our knowledge.

The Albertville Utilities Board's distribution system consists of approximately 6,000 copper service lines, 3,900 plastic service lines, and 100 galvanized service lines. There are zero lead service lines in the distribution, as far as we know. There are approximately 10,000 meters in our distribution system, 7,500 old brass type meters, and 2,500 new lead-free brass meters.

Distribution Lines Materials	Distance of Lines (miles or feet)	Number of Lines
Copper service lines	36.4 miles	6,000
Plastic lines	23.6 miles	3,900
Galvanized lines	3200 feet	100
Lead lines	0	0`
Meters Materials		
	Year(s) Installed	Number of Meters
Brass meters (old type)	Between 1990-2013	7,500
Brass meters (new, "lead-free")	Between 2013-present	2,500
Plastic meters	0	0
Customer Plumbing Materials		
	Number of Homes	
Copper Pipes	Approximately 10,000	
Stored Parts and Equipment		
	Materials *	
Corp stops, curb stops, couplers, other adapters, meters	Brass, lead free	
Pipes, 2"	Plastic	
Pipes, 24"	Ductile iron, lead free	
Pipes, between 2" and 24"	Various, lead free	
Fire hydrants		
Valves, repair bands, couplers, saddles and air release valves		
High service pumps		
Booster pumps		

* NOTE: Spare parts and equipment in our inventory supply are "lead-free" certified; i.e., all products meet a weighted average lead content of ≤0.25% with respect to the wetted surfaces, meeting the requirements of the 2014 Reduction of Lead in Drinking Water Act.