

US EPA ARCHIVE DOCUMENT

Technical Expert Working Group (TEWG) Conference Call

August 2, 2013
10:00 – 11:00 a.m.

CALL SUMMARY

Attendees:

EPA Region 3 and contractors: Bill Arguto, Wendy Gray, Michelle Hoover, Beth Garcia, Kathy Martel (Cadmus), Anne Sandvig (Cadmus)

The Washington Aqueduct: Mike Chicoine

DC Water: Maureen Schmelling, Jessica Edwards-Brandt, John Civardi (Hatch Mott)

DDOE: William Slade

Concerned Citizen: Susan Kanen

Virginia Tech: Marc Edwards

Agenda and Housekeeping Issues

Bill Arguto led the call. He indicated that the Agenda for this call was sent to the work group. He also requested that if any workgroup members had comments on the minutes from the previous call, to please send them to him. Bill reviewed the meeting agenda (included as Attachment A to this call summary) and indicated that discussions will begin with the DC Water Pipe Loop Update.

Summary of Discussions by Topic Area

1. DC Water Pipe Loop Update

Maureen Schmelling provided pipe loop data from DC Water Loop 1 prior to the call. She indicated that the pipe loop samples show no change from the previous summary. There are some higher lead levels measured in the summer, most likely a result of physical vibrations due to construction activity.

Sue Kanen raised questions on the differences in lead levels measured from the different loops, the sampling method (i.e. re-circulation vs. stagnation samples), the pipe loop configuration and operation, and sample dilution resulting from the recirculation protocol. Ms. Kanen questioned why lead levels from Loop 3 were different than Loop 1 and if they had the same setup. Maureen Schmelling clarified that setup is the same for all the loops, and that Loop 3 is about four feet from Loop 1. Loop 3 had originally been a test loop, but was converted to a baseline loop several years ago. Originally, the baseline lead levels

measured from Loop 3 were slightly higher than the baseline lead levels measured from Loop 1, but they are now averaging around 5 ppb.

Ms. Kanen summarized the calculations she provided in March 2012 related to lead mass generated in the recirculating pipe loop setup. She questioned the validity of lead results obtained using a one day recirculation period, and requested that water in the pipe loops be recirculated for a few days before changing the water, to see if the lead levels would be different. Maureen Schmelling indicated that the current protocol is to change the water daily Monday through Friday. Previously, in 2005/2006, stagnation samples were collected. When the protocol was changed to a recirculation mode, little difference was seen in lead levels generated under the two protocols. If experts had raised a concern about the current protocol, DC Water would consider changing it, but none have raised this as an issue.

These same questions were raised in previous TEWG meetings; the questions and responses provided by DC Water and EPA are documented in previous call notes.

2. Washington Aqueduct Pipe Loop Update

Prior to the call, Mike Chicoine distributed graphs showing total and dissolved lead concentrations for the pipe loops located at both of Washington Aqueduct's water treatment plants (WTPs). Graphs for the McMillan WTP pipe loops summarize data for the period November 2010 to July 17, 2013 and graphs for the Dalecarlia WTP pipe loops include data for the period March 2005 to July 25, 2013. Mike Chicoine said that the flow rate for the Dalecarlia pipe loop was decreased to 1 gpm while the McMillan pipe loop flow rates remains at 3 gpm.

Sue Kanen stated that she is concerned that the data from the three loops are not in agreement and questioned whether the stagnation time or anything else had changed. Mike Chicoine responded that there were no scheduled changes that he was aware of through the course of collecting this data set. The Washington Aqueduct is continuing to run the pipe loops passively now, sampling according to the plan (once/week) for lead levels and temperature, and that his understanding is that the stagnation time has not been modified. He also indicated that there has been maintenance on the pipe loops since 2005 and throughout that period of data collection (to repair ruptured hoses, etc.) and these repairs may impact the data results. However, he indicated he has not interpreted those impacts and is just presenting the data that has been collected. Ms. Kanen also questioned why the temperature data between the three loops doesn't agree, and that she would like to see a three-day recirculating period used on these pipe loops as well.

3. DC Water Update on Posting Data to the Website

Maureen Schmelling reported that DC Water has a summer intern and they are in the process of updating the profile data collected over the last couple of years.

4. DC Water Preliminary Lead and Copper Rule Results Update

Maureen Schmelling reported that the January-June 2013 LCR sample results have been submitted and the 90th percentile lead level was 4 ppb. July 2013 samples have just been submitted to the lab so there are no results to report. These results should be available next month.

5. Review of Lead Sampling Procedures

Bill Arguto said that on the April TEWG call he indicated he would send a response to Yanna Lambrinidou's questions on lead sampling procedures. This response was initially sent to the people in the original email, and two days ago was sent to the entire workgroup.

Sue Kanen asked if lead profiles had been done in the summer and that she would like to see the website updated with summer lead profiles from sites that have been verified to have a lead service. Maureen Schmelling responded that she hoped to get profile data from the past couple of years posted. Ms. Kanen stated that she has seen lead levels of 30 ppb measured in the lead pipe section in 2009 and asked whether these levels are being seen in the more recent profiles. Maureen responded that a lead profile is triggered when results of first or second draw samples exceed the lead action level, so these are worst case homes. Numerous sampling is conducted at homes in addition to LCR sampling, and if any of the first or second draws exceed the action level, a profile is completed. Sometimes, lead levels around 30 ppb will be measured which could be in the first draw, the second draw, or another sample, and these levels can be seen in the summer or the winter. Maureen indicated that the lead level results may be more dependent on the home plumbing. Ms. Kanen asked if any lead levels over 30 ppb or in the 100 ppb range have been measured. Maureen responded that she has not seen these levels in lead service lines, but may measure these higher lead levels when high velocity sampling is conducted (i.e. when the faucet is opened all the way to scour the pipe).

Wendy Gray asked Maureen to explain how long it takes to collect the profile samples after they have been triggered. Maureen answered that the profile sampling can happen anytime because the sampling has to be coordinated with the customer. She also stated that more profiles are conducted from sites that are not LCR regulatory monitoring sites, and that these additional sites are monitored year round. Once results are back, the profile is conducted approximately one month later.

6. Wrap-Up

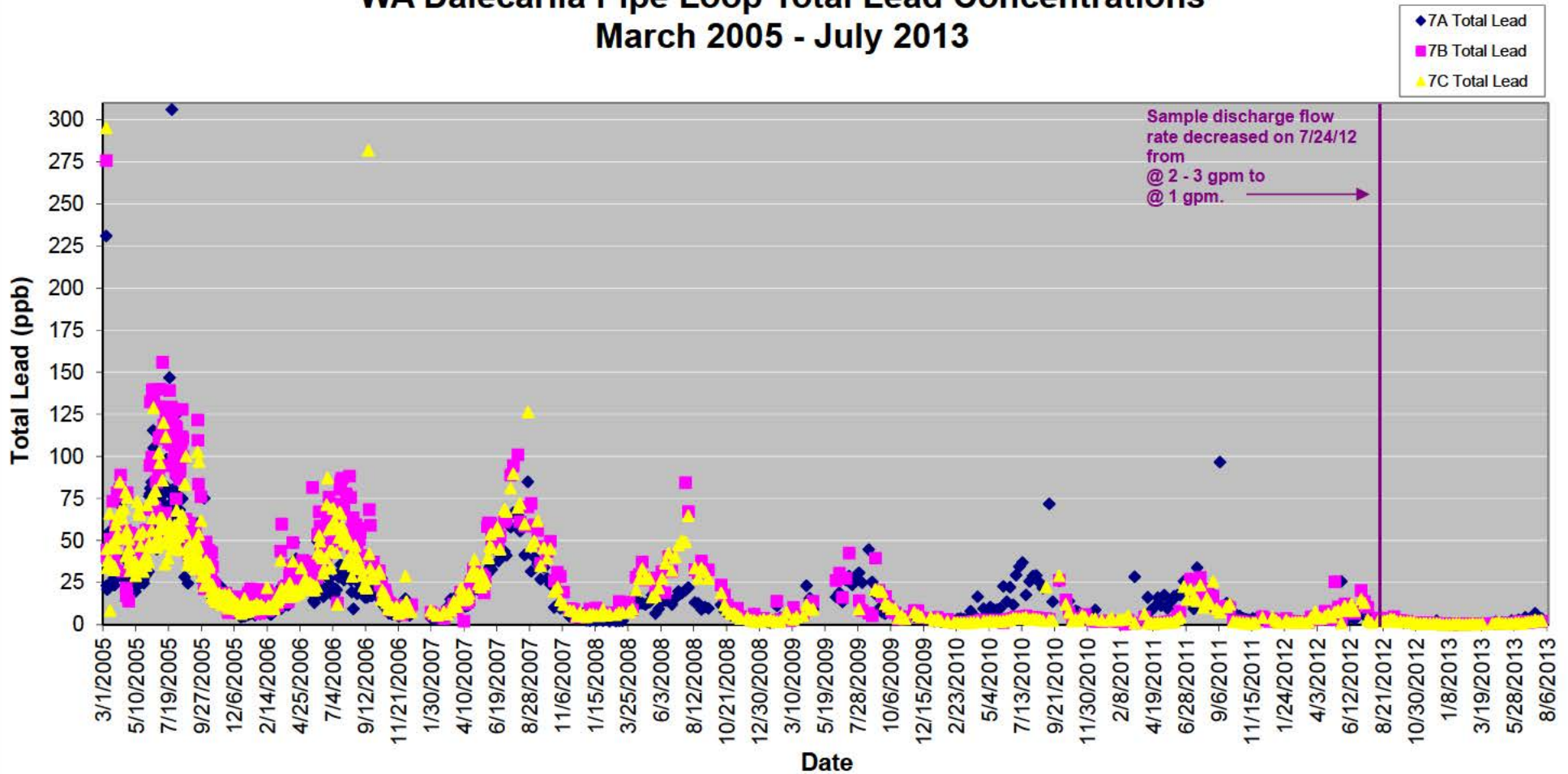
Bill Arguto indicated that the meeting notes will be prepared and distributed to TEWG members prior to the next call. The next call is scheduled for November 7, 2013 at 10:00 a.m., which is a Thursday rather than a Friday. If anyone has additional questions or comments, please email Bill Arguto or Wendy Gray.

Attachment A

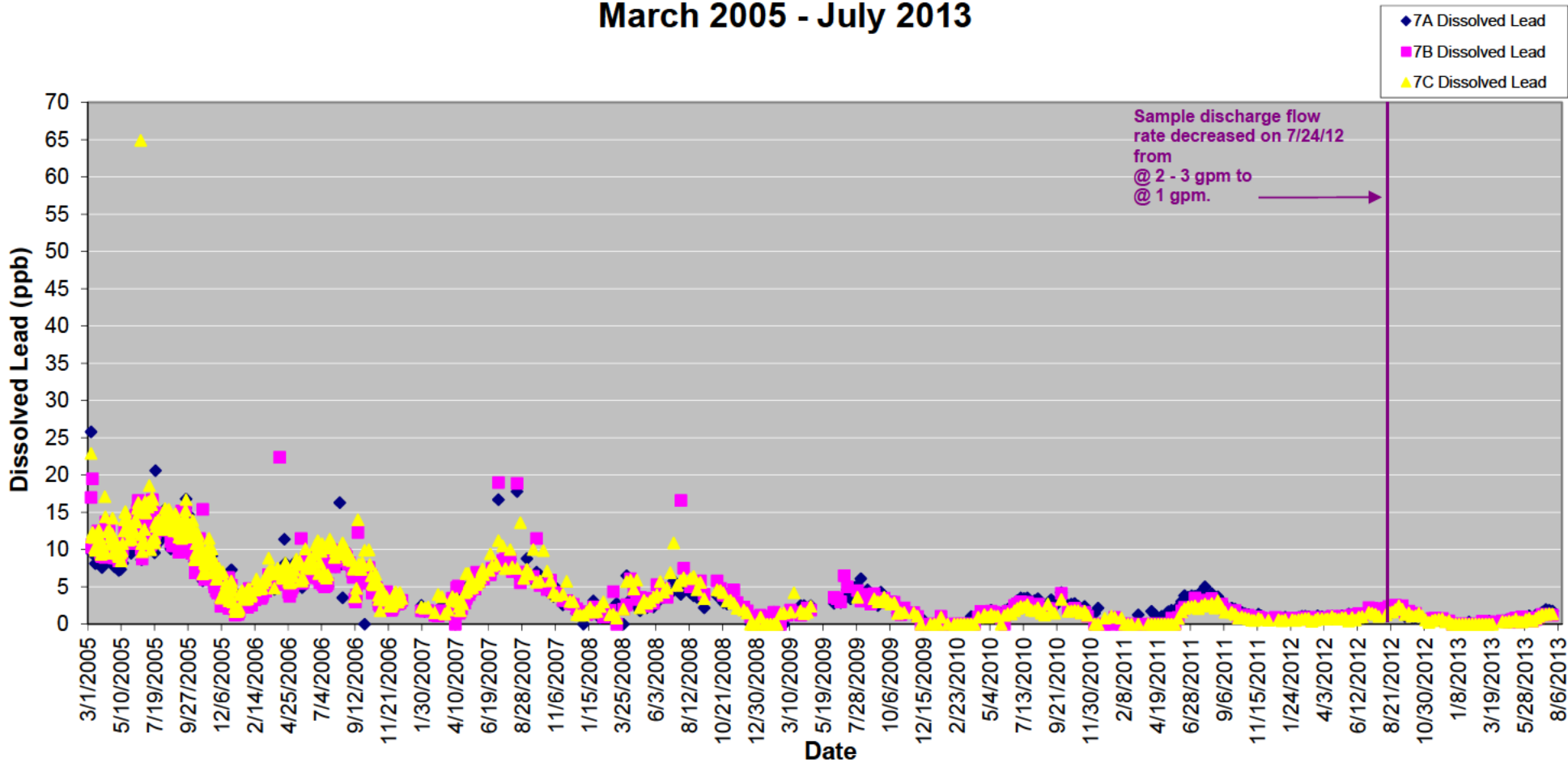
1. Call Agenda for TEWG Call on August 2, 2013

- * DC Water pipe loop update
- * Washington Aqueduct pipe loop update
- * DC Water update on posting data to website
- * DC Water preliminary lead and copper rule results update
- * Review of lead sampling procedures

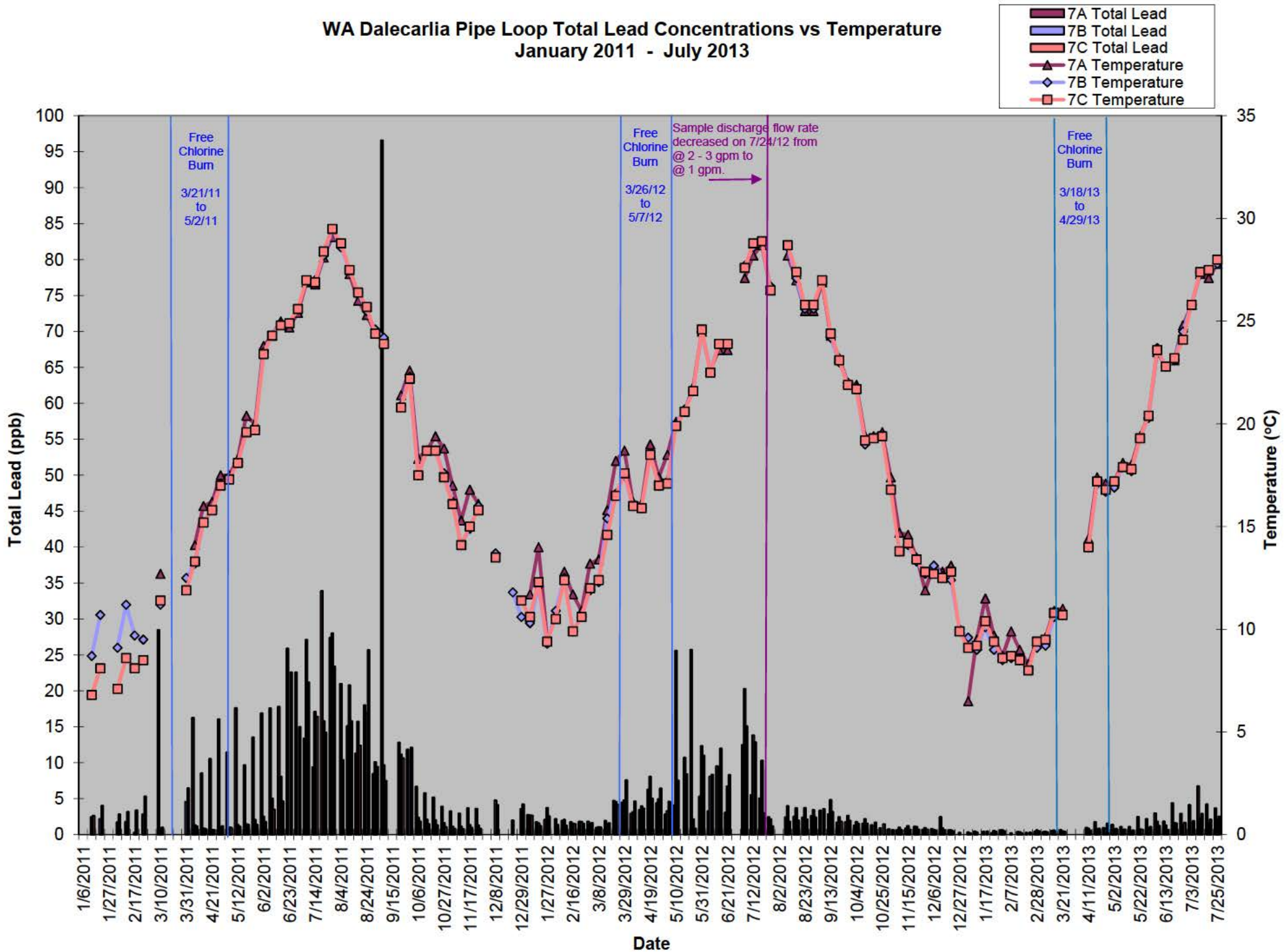
WA Dalecarlia Pipe Loop Total Lead Concentrations March 2005 - July 2013



WA Dalecarlia Pipe Loop Dissolved Lead Concentrations March 2005 - July 2013

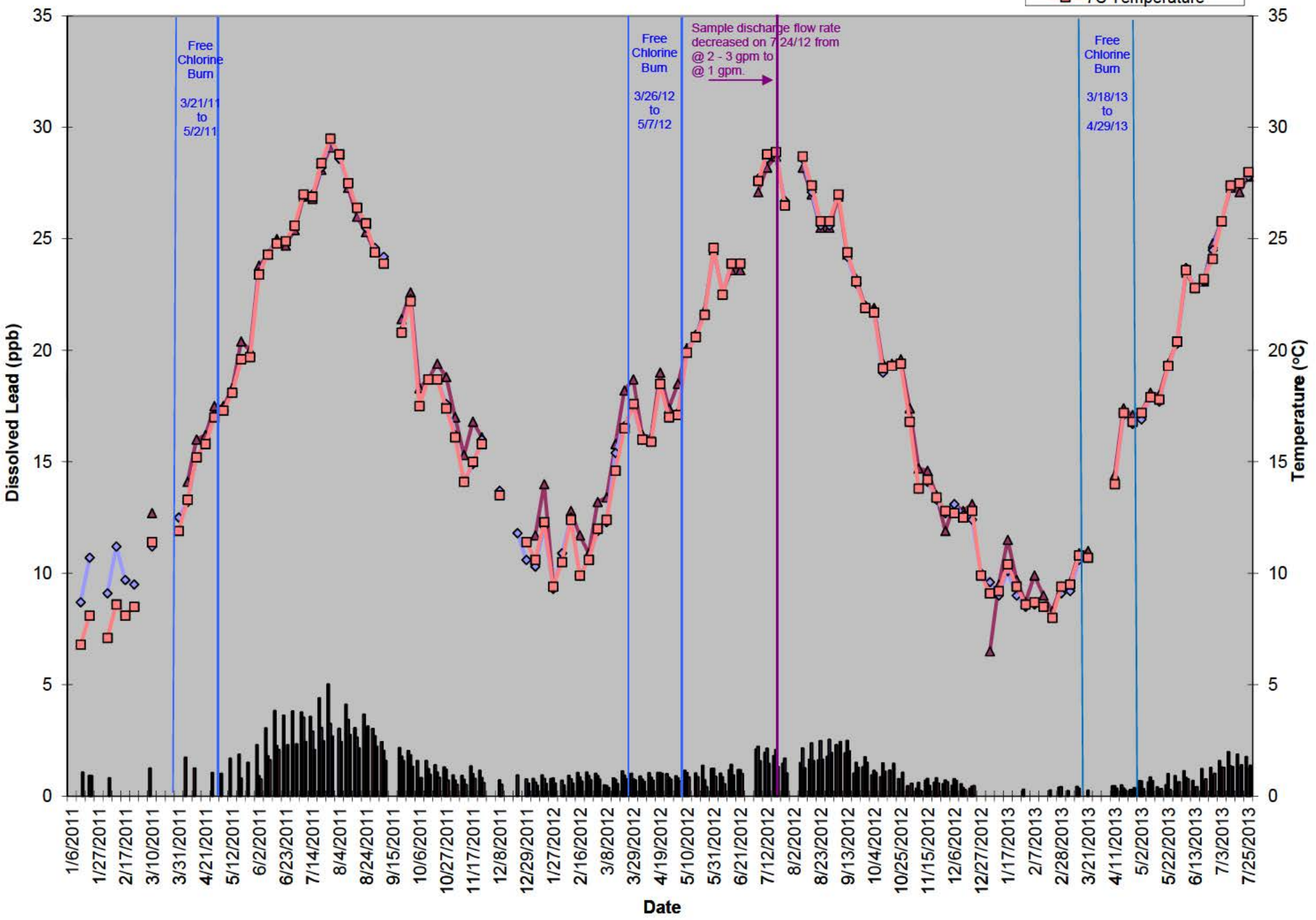


WA Dalecarlia Pipe Loop Total Lead Concentrations vs Temperature January 2011 - July 2013

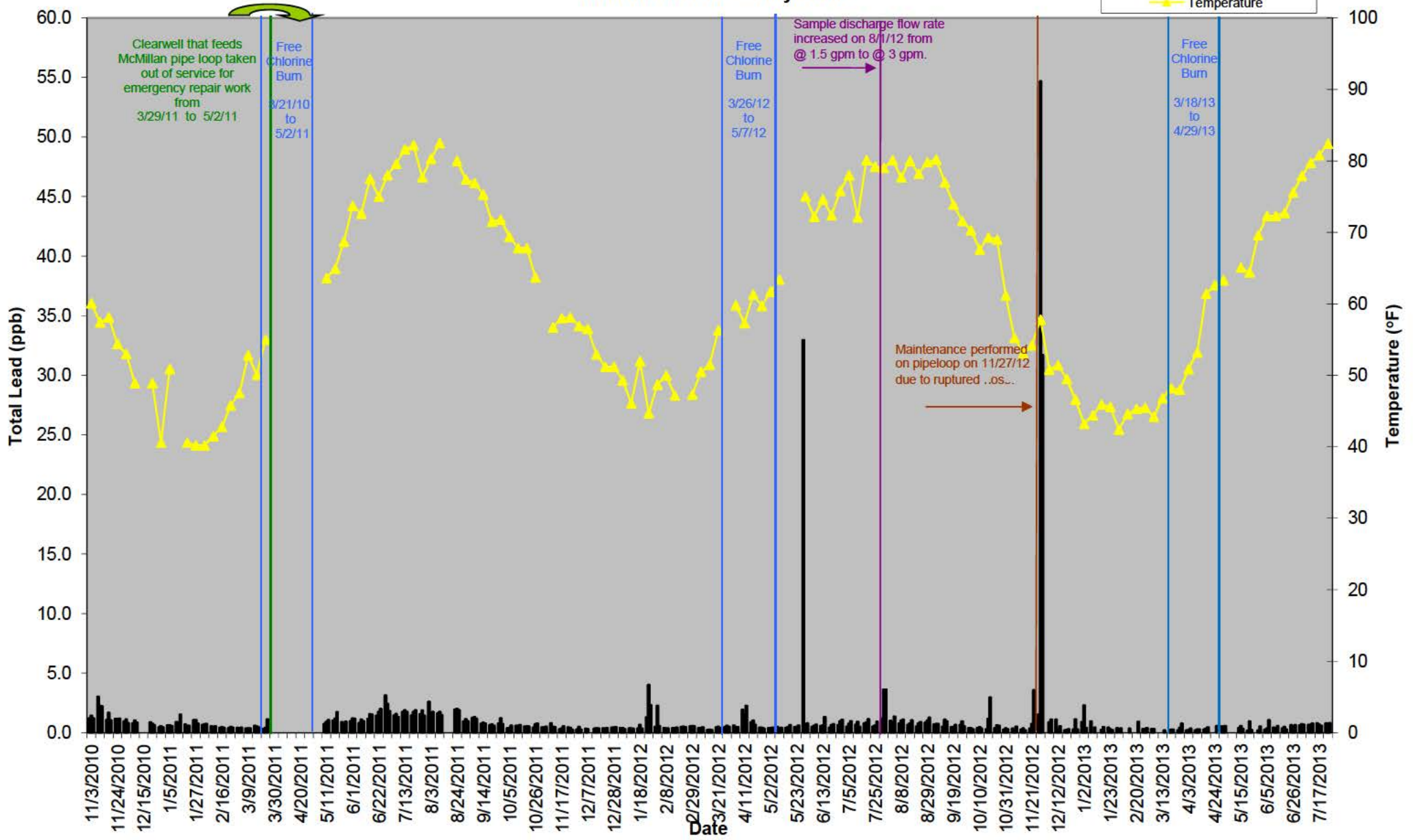


WA Dalecarlia Pipe Loop Dissolved Lead Concentrations vs Temperature January 2011 - July 2013

- 7A Dissolved Lead
- 7B Dissolved Lead
- 7C Dissolved Lead
- ▲ 7A Temperature
- ◆ 7B Temperature
- 7C Temperature

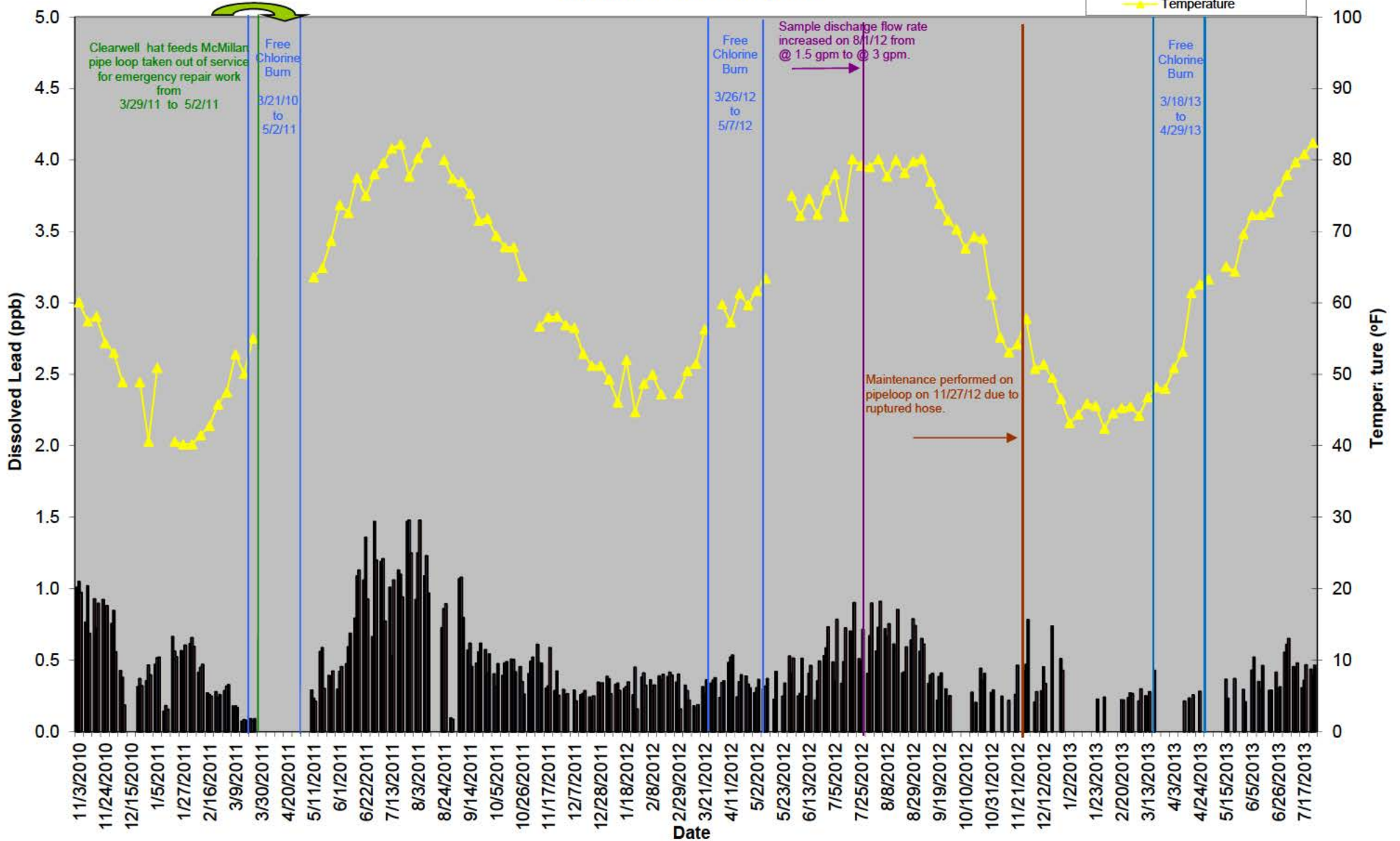


WA McMillan Pipe Loop Stagnation Samples Total Lead Concentrations vs Temperature November 2010 - July 2013



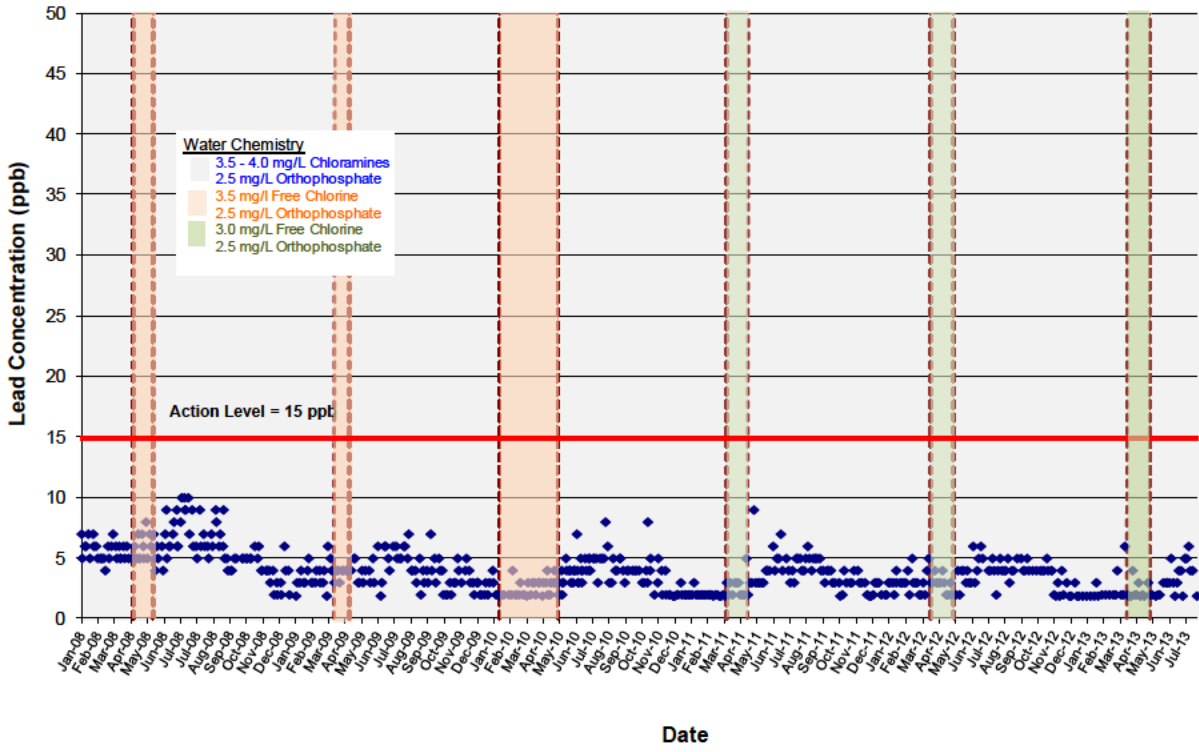
Note: Solenoids were installed on 6/7/2012 in order to isolate the sample discharges for loops 1, 2, and 3 from a common discharge. Lead data prior to this date represent the three loops being tied together at their discharge. So roughly prior to 6/7/2012, the first sample contains the first third of all three loops, the second sample the second third, and the last sample the final third.

WA McMillan Pipe Loop Stagnation Samples Dissolved Lead Concentrations vs Temperature November 2010 - July 2013



Note: Solenoids were installed on 6/7/2012 in order to isolate the sample discharges for loops 1, 2, and 3 from a common discharge. Lead data prior to this date represent the three loops being tied together at their discharge. So roughly, prior to 6/7/2012, the first sample contains the first third of all three loops, the second sample the second third, and the last sample the final third.

Pipe Loop 1 Final (Control Loop): 1/08 - Current



From: [Arguto, William](#)
To: "[Patricia.A.Gamby@wad01.usace.army.mil](#)"; "[Lloyd.D.Stowe@wad01.usace.army.mil](#)"; "[Mel.M.Tesema@wad01.usace.army.mil](#)"; "[Michael.L.Chicoine@usace.army.mil](#)"; "[Shabir.A.Choudhary@usace.army.mil](#)"; "[Jim.Bemis@nab02.usace.army.mil](#)"; "[Anne.L.Spiesman@usace.army.mil](#)"; "[Robert.P.Hoffa@wad01.usace.army.mil](#)"; "[snoeyink@uiuc.edu](#)"; "[Glenn.Palen@ch2m.com](#)"; "[regoca@cdm.com](#)"; "[vspeight@latisassociates.com](#)"; "[charles.kiely@dcwater.com](#)"; "[john.civardi@hatchmott.com](#)"; "[Steve.Reiber@hdrinc.com](#)"; [Arguto, William](#); [Rizzo, George](#); [Lytle, Darren](#); "[Laura.Dufresne@cadmusgroup.com](#)"; "[SRing@cadmusgroup.com](#)"; "[karen.sklenar@cadmusgroup.com](#)"; "[Katherine.Martel@cadmusgroup.com](#)"; "[korshin@u.washington.edu](#)"; "[hugh.eggborn@vdh.virginia.gov](#)"; "[Robert.Edelman@vdh.virginia.gov](#)"; "[william.slade@dc.gov](#)"; "[arj2@cdc.gov](#)"; "[mjacobi@fallschurchva.gov](#)"; "[dhundelt@arlingtonva.us](#)"; "[pnalternatives@yahoo.com](#)"; "[afellows@cleanwater.org](#)"; [Pressman, Jonathan](#); [Wahman, David](#); "[Arlen.Martin@afncr.af.mil](#)"; "[DVarle@cnmc.org](#)"; "[ajmurray@cadmusgroup.com](#)"; [Gray, Wendy](#); [Hoover, Michelle](#); [Chiu, Enid](#); "[tawana.spencer@navy.mil](#)"; "[nicole.r.johnson1@navy.mil](#)"; "[Jessica.Edwards-Brandt@dcwater.com](#)"; "[John.Aulbach@vdh.virginia.gov](#)"; "[Randall.Swartz@vdh.virginia.gov](#)"; [Brown-Perry, Kinshasa](#); "[Thomas.P.Jacobus@usace.army.mil](#)"

Subject: LCR Compliance questions - fwd
Date: Thursday, August 01, 2013 9:41:18 AM
Attachments: [LCR compliance question 4-26-2013.docx](#)
[Yanna Request.docx](#)

During the April 26 conference call of the Technical Expert Work Group, I had indicated that I would send the EPA response addressing the questions that were forwarded by Yanna Lambrinidou to the whole work group. This file was sent on April 26 to a subset of the workgroup. For your information this file is being sent to the work group members that did not receive the earlier distribution.

Please call or email if you need any additional information

Thanks
Bill

Dear Mr. Arguto and Ms. Gray:

As per your request during the Technical Experts Working Group (TEWG) meeting on Friday, June 1, we are sending you in writing the following request:

Parents for Nontoxic Alternatives, Clean Water Action, and the Water Alliance is asking for a face-to-face meeting in Washington, DC with EPA Region 3 to discuss several long-standing concerns of our organizations regarding the way in which LCR compliance monitoring is carried out in our city. We ask for this meeting with EPA Region 3 rather than DC Water because your office is directly responsible for interpreting the Lead and Copper Rule (LCR) for the water utilities you oversee and approving each utility's LCR compliance monitoring methodology. DC Water has already made several important improvements to its LCR monitoring methodology in response to our concerns (e.g., it no longer instructs residents to run the tap for 10 minutes prior to stagnation, it recommends a "normal" rather than a high flow rate for the flush between 1st and 2nd draw samples, it uses sampling bottles with a wide enough opening for sample collection at a normal flow rate), and has even asked you for permission to return to a "reduced" lead-in-water monitoring program (which involves only one monitoring cycle a year during the warmest months), a request that apparently you rejected (DC Water Board of Director "Meeting Minutes," 1/19/2012). Additional improvements, at this time, might be difficult for the utility to make when current LCR compliance monitoring practices are approved, if not actually recommended or required, by EPA.

As you know, our main concern is that DC Water's LCR monitoring samples may not in fact capture worst-case lead-in-water levels in Washington, DC -- which is the LCR's explicit intent. As such, they may be leaving the public unaware of and unprotected from potentially hazardous lead-in-water elevations during the highest-risk months of the year. Specifically, we are concerned about:

1. The lack of the monitoring cycle's focus on the District's warmest months

Basic scientific knowledge about the correlation between lead corrosion and outside temperatures and the Washington Aqueduct's (WAD) pipe loop data that show lead-in-water peaks in late July/early August, both suggest that the levels of lead in the District's drinking water are most likely to be highest in the warmest months of the year. Washington, DC's warmest months are June (av. temp. 84F), July (av. temp. 89F), and August (av. temp. 87F), with average temperatures peaking in July (<http://www.weather.com/weather/wxclimatology/monthly/graph/USDC0001>). Yet in 2011, for example, DC Water collected no LCR samples between 5/20/11 and 7/25/11, which represents a 2-month+ period when District residents may very well be exposed to some of the highest lead-in-water concentrations in the year. Instead, DC Water collected:

a) Only 23 (11.2%) of the 204 total LCR compliance samples in July (the good thing is that all of these samples were collected in late July, which supports the intent of the LCR)

b) Only 9 (4.4%) of the 204 total LCR compliance samples in August (all of these samples were collected the last week of the month, which misses three potentially very important weeks in August)

c) 90 (44%) of the 204 total LCR compliance samples during the coldest months of the year for Washington, DC (Jan-Feb-Mar and Nov-Dec).

This pattern of sampling seems to go against the LCR's requirement that all samples be taken when lead-in-water levels are most likely to be highest.

2. The collection of samples during the Washington Aqueduct's (WAD) chlorine burn

In 2011, for example, 45 (22%) of the 204 LCR compliance samples were taken during WAD's chlorine burn (3/21/11-5/1/11). We hope you would agree that lead-in-water levels in Washington, DC when the water's disinfectant switches to free chlorine are not likely to be highest.

Adding up the samples taken during the coldest months of the year (90 total) and the samples taken during the chlorine burn (45 total), and eliminating overlaps (19 samples taken in March), shows that 116 (57%) of the 204 total LCR monitoring samples for 2011 had a low to non-existent chance of measuring high for lead, and may have prevented the detection of lead-in-water problems during the months of the year that are indeed of highest public health risk (June-August).

3. The LCR compliance sampling pool

We continue to have questions about the homes that are selected for LCR compliance sampling. First, for how many of the homes listed as having an intact or partial lead service line does EPA know with certainty that the material of the line is documented correctly? We recently learned that DC Water told Dr. Marc Edwards that they are uncertain about the service line material at the vast majority of sites in the utility's LCR compliance pool. Second, in light of the fact that our organizations have not been given access to complete LCR monitoring-pool addresses from 2004 onwards, we continue to fear that DC Water's LCR-compliance monitoring may be focusing on homes that on paper meet EPA's criteria of "high risk" (i.e., with lead service lines and partial replacements), but that have a history of testing low for lead, even when the water is corrosive. If this is the case, it is again possible that the LCR compliance program carried out today may fail to capture worst-case lead-in-water levels in the District. As EPA Region 3 is responsible for approving DC Water's LCR compliance sampling site pool, what oversight investigations has your office conducted to ensure that a) intact and partial "lead service line" homes in DC Water's LCR compliance samples do indeed have an intact or partial lead service line, and b) homes targeted for LCR compliance sampling do not have a history of routinely testing low for lead, even when the water is corrosive?

4. The practice of not sending samples for analysis when their stagnation exceeds 18 hours

EPA's LCR guidance states explicitly that there is no cap whatsoever on stagnation prior to sampling collection (http://web.archive.org/web/20080326160910/http://www.epa.gov/OGWDW/lcrmr/memo_nov23-2004.html). We would like to understand better the basis on which EPA Region 3 allows DC Water's practice of not sending some samples for analysis in the District. Does your office know if homeowners are informed about their samples not getting analyzed due to stagnation periods greater than 18 hours?

5. The instruction to collect 2nd-draw samples "when the water temperature changes"

DC Water's 2nd-draw lead-in-water levels (which we know don't count for LCR compliance, but which can actually give us a better sense for potential lead-in-water problems in the District's distribution system) might be of questionable value. To our knowledge, between 1st- and 2nd-draw samples, residents flush their taps for an average of 4 minutes, by which time the water comes directly from the main and fails to capture lead levels in water sitting in lead service lines during stagnation. Has EPA Region 3 conducted any oversight investigations to document the time in minutes between 1st and the 2nd draw samples that customers record on their chain of custody forms? Would EPA Region 3 object to a change in DC Water's current instructions to homeowners from filling the 2nd bottle when the water temperature changes (a highly subjective criterion) to filling the 2nd bottle 1-2 minutes after the 1st draw (a more objective criterion)? This way, we believe, DC Water's 2nd draw samples will be far better able to capture the lead service line portion of the typical lead profile.

We appreciate your consideration of our request for a meeting, sometime in the next 8 weeks. We believe it is critical that we have the opportunity to discuss these matters in a face-to-face setting and are eager to arrive at satisfactory solutions, so that we can finally join both EPA (and DC Water) unequivocally in your assurances about the District's water meeting all LCR requirements.

We are copying Maureen Schmelling (DC WASA), Sarah Neiderer (DC WASA), and Collin Burrell (DDOE), among others, as we want this important conversation to take place with their participation and input.

We look forward to hearing back from you soon.

Regards,

Yanna Lambrinidou
Parents for Nontoxic Alternatives

Andrew Fellows
Clean Water Action

Paul Schwartz
Water Alliance

Thank you for providing your concerns regarding the way in which Lead and Copper Rule (LCR) compliance monitoring is carried out in the District of Columbia.

The following discussion serves as EPA Region III's response to your concerns.

1. Monitoring not in the warmest months

EPA Region III agrees with your expectation that lead corrosion is more likely to be higher in warmer months of the year. Although the data that you have provided were average monthly high air temperature results for the District of Columbia, EPA believes that using water temperatures would provide a better basis for comparison to lead corrosion. EPA also generally agrees with the statistics that you have provided in items a) through c) although EPA clarifies that there were 203 lead and 202 copper compliance samples reported by DC Water in 2011.

Routine monitoring under the lead and copper regulation requires that water systems monitor during two consecutive six-month periods. EPA requires DC Water to collect at least 100 routine monitoring samples during each of the two six month sampling periods, which equates to a minimum of 200 samples per year. As you noted, DC Water, in 2007, requested that EPA allow reduced monitoring frequency for lead and copper. EPA did not approve the request which would have resulted in a minimum of only 50 samples per year during the period of June to September.

Based on the information available to us, EPA is satisfied that DC Water is collecting samples as required by the LCR.

2. Collection of samples during chlorine burn

The LCR does not mandate that lead sampling be performed or not performed at specific times within a monitoring period, such as other than during a period of chlorine transition. In addition, the LCR does not mandate the distribution of monitoring throughout the monitoring period.

In 2011, the period of transition to free chlorine for DC Water was from March 26 to May 7, 2011. The duration of this transition period was 42 days which is equivalent to 23% of the days during the six- month monitoring period. DC Water collected 45 samples during this period in 2011 which is equivalent to 44% of its samples during the six month monitoring period. This sampling during the period of transition to free chlorine is not inconsistent with the requirements of the LCR.

3. LCR compliance sampling pool

The LCR does not require DC Water to confirm the materials of all service lines in the distribution system, although it does require water systems to perform a material evaluation of the LCR compliance sample pool sites. DC Water reports the materials of construction of the LCR compliance sample pool sites in its annual LCR Sampling Plan as well as with LCR compliance results. For the calendar year 2012, the designation of the 293 compliance sampling pool sites as listed in the LCR Sampling Plan is as follows:

	Primary	Secondary
Lead	146	64
Partial Lead	36	47

EPA relies on the information provided by the public water system with regard to the material of construction of the service line. EPA Region III reviews but does not specifically approve or disapprove DC Water's LCR compliance sampling site pool.

In addition to the requirements of the LCR, DC Water voluntarily reports its inventory of lead service lines to EPA on an annual basis. DC Water provided inventory of approximately 29,000 known and suspected lead service lines for 2001; this information is updated annually. As of September 2012, the inventory reported 13,149 confirmed lead service lines and 17,394 lines of unknown material.

4. Sample Collection and 18 hour stagnation period

The LCR does not specify an outer limit on the period of stagnation and further clarification is provided by EPA memo dated (November 23, 2004) Clarification requirements for Collecting Samples and Calculating Compliance, EPA will discuss with DC Water the consideration of analyzing samples having a stagnation period of greater than 18 hours.

DC Water is not required to analyze every sample that is collected, but does document why all samples are not analyzed.

DC Water reported that homeowners are informed when samples are not analyzed, and provided EPA with an example of the correspondence that it uses. The notifications tell the homeowner why the sample was not analyzed, offers the homeowner the opportunity to resample during the following month, and instructs the homeowner to contact DC Water. DC Water performs this voluntary notification and suggests resampling, thus providing an opportunity for the location to remain in the sampling pool.

5. Second draw sample method

The second draw sample, as you have acknowledged, is not required to be collected by a water system. DC Water began collecting second draw samples many years ago to obtain additional water quality data. These samples were not intended to be "service line samples" as defined by the LCR. The LCR describes "service line samples" and the methodology for determining lead concentration in water from lead service lines to allow lead service lines to be "tested out" of the replacement requirement. Such a "Service line sample" is defined by the LCR as a one-liter sample of water that has been standing for at least 6 hours in a service line. This sample may be collected by one of three methods:

- 1) at the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line,
- 2) tapping directly into the lead service line, or

3) if the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

Please note that the LCR does not define a period of time between the first and second draw as an allowable method for collection of the second draw sample. EPA Region III has not conducted a review to determine the time in minutes between the first and second draw samples.

In summary EPA remains unaware of any significant violations by DC Water in collecting samples as required by the LCR.. As you know, EPA is currently developing a proposal for revisions to the Lead and Copper Rule. Many of the concerns that you have expressed have been included in the discussions of the proposed revisions of the LCR. For additional information on the proposed revision please refer to

<http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/index.cfm>

Following publication of the proposed revisions in the Federal Register, there will be opportunity for you to formally comment through the process described in the regulation proposal.

Thank you providing your concerns to EPA and your patience with this response regarding clarification of LCR requirements as well as implementation of the LCR requirements in the District of Columbia. Should you have remaining questions regarding this response, or the public comment process, please feel free to contact me at 215-814-3367.

William Arguto, Chief
Drinking Water Branch
EPA Region 3