



## COMPLIANCE DATA UPDATE 07/29/2019

To ensure continued transparency as we work to restore safe drinking water for all residents in University Park, Aqua Illinois is sharing its sampling results on WaterFactsIL.com regularly to keep the community and other stakeholders informed of our progress.

Before we provide some helpful background, here's an important update:

After weeks of studying and with a better understanding of the situation, we want our customers to know that that **you *can* drink, cook, make ice cubes and make formula with your tap water *if* you:**

1. **Run your faucets for 2 to 3 minutes before use if you have not used your water in six or more hours AND,**
2. **after running the tap, filter your water through pitchers or faucet filters certified by the NSF to reduce lead.**

Please see below for detailed information from our sampling program, what occurred, how we're working to fix the situation, a message from the Illinois Environmental Protection Agency, and the latest sampling results with an explanation of the data.

### Explaining compliance samples

The U.S. Environmental Protection Agency, through its lead and copper rule, requires water utilities to work with their customers to collect regularly scheduled stagnation samples, or compliance samples. This rule is designed to gather samples of water that have remained in customers' pipes for six or more hours. Water that sits in pipes unused for six or more hours provides worst-case scenario data for lead exposure. The U.S. EPA deems water treatment effective when test results are less than 15 micrograms per liter (ug/L) across 90 percent of sample locations. Utilities must choose locations to sample to represent properties with the highest inventory of lead. For example, Tier 1 locations include those with lead service lines or lead solder on copper pipes on homes constructed after 1982.



The lead and copper rule does not set a health-based lead limit. It is a treatment-based rule. That means if 90 percent of compliance samples are less than 15 ug/L, treatment is deemed effective, and any samples over 15 ug/L are analyzed on an individual basis. Do not consume advisories can be issued to be proactively protective.

To complete compliance sampling, Aqua Illinois provides bottles and instructions to participating customers, who then collect the samples. We pick up the sample bottles when customers tell us they samples are ready, and then we send them to an independent lab for testing.

### **Water compliance sampling**

Illinois Environmental Protection Agency regulations require Aqua Illinois to work with at least 40 homes and businesses in the University Park service area to conduct water compliance sampling. These locations must be submitted to IEPA before compliance sampling can begin.

We collected regularly scheduled samples in May 2019 as part of our biannual compliance testing schedule. On June 13, 2019, we began receiving those sampling results, some of which showed elevated lead levels. As a result, Aqua Illinois began working with the IEPA on a treatment plan and voluntarily increased the testing frequency, which now includes conducting biweekly compliance sampling, to help us understand and monitor progress as we resolve this issue.

We are committed to being fully transparent and we will share our results at [WaterFactsIL.com](http://WaterFactsIL.com).

### **What occurred and how we're fixing it**

We immediately issued a voluntary do-not-consume advisory on June 14, 2019 for all customers in the service area to be **as protective as possible** after receiving compliance samples that showed elevated lead levels in 14 homes on June 13, 2019, and while we investigated and gathered information about this situation. It is important to note that no state or federal regulation required us to issue the advisory and that we issued it as a precaution to protect the public until we learned more about the extent, cause, and level of the issue AND until we could implement alternative protective health measures. We have identified that the likely cause of elevated lead levels is due to water chemistry interacting with lead solder in the internal plumbing. Our information shows that the water in Aqua's distribution system and service lines does not have elevated levels of lead.



The U.S. EPA banned lead solder and pipe installation in 1986, and compliance testing results in post-1986 homes showed lead levels that met the U.S. EPA action level. We have since removed some areas from the do-not-consume advisory based on property age and water sample results. Aqua Illinois still recommends residents in these areas run their tap for two minutes before consuming the water and until you notice a temperature change. This ensures you're receiving fresh water from the mains in the street and not water that has been sitting in the plumbing. (Click [here](#) for more details on how running your tap water helps reduce lead levels in your water.)

On June 15, 2019, Aqua Illinois introduced a new treatment, orthophosphate, into the water system in the entire service area. This treatment is known for its ability to create a protective coating where lead is present, keeping it out of the water we consume. The treatment can take months to become effective. This treatment is not harmful to humans or pets.

A main part of our investigation includes water testing. Based on testing results of water in the distribution system and in homes, we now have a better understanding of how impacted customers can consume their water than we did at the time we discovered the elevated levels in June.

Please know that **you *can* drink, cook, make ice cubes and make formula with your tap water *if* you:**

- 1. Run your faucets for 2 to 3 minutes before use if you have not used your water in six or more hours AND,**
- 2. after running the tap, filter your water through pitchers or faucet filters certified by the NSF to reduce lead.**

Please visit [WaterFactsIL.com](http://WaterFactsIL.com) or call 877.987.2782 for the most up-to-date information.



## A Message from the IEPA

The Centers for Disease Control and Prevention indicates there is no safe blood lead level in children. Lead exposures come from a combination of environmental sources, which may include lead in water. U.S. EPA estimates that water can make up 20 percent or more of a person's total exposure to lead, and infants who consume mostly mixed formula can receive 40-60 percent of their exposure to lead from drinking water. The source of lead in water is most often from a building's plumbing system.

The IEPA and Illinois Department of Public Health support point-of-use (POU) filters as a short-term strategy for reducing lead in drinking water. *(Please note: Aqua Illinois is providing free faucet filters and pitcher filters to customers in University Park).* A POU system filters water at the point where water is being used and is installed at the water connection, typically under the sink in the kitchen or bathroom. Water pitchers with POU filters may also be used. POU filters are commercially available and can be effective at removing most lead. There are several POU cartridge filter units on the market. They can vary in price and effectiveness. Filters should routinely be replaced or maintained in accordance with manufacturers guidelines and recommendations to remain effective.

To select a lead-reducing POU filter, check with the manufacturer or a third-party website (such as [www.nsf.org](http://www.nsf.org)) to verify the product was tested and certified for lead removal (NSF/ANSI Standard 53). For additional protection for particulate lead, look for a POU filter that is also certified against NSF/ANSI Standard 42 (for class I particulate reduction, 0.5 micrometers to less than 1 micrometers). To be effective, the POU filters should be installed at locations used for drinking water or for food preparation according to the manufacturer's instructions. This includes kitchen water faucets and refrigerators with water dispensers and ice makers or in water pitchers.

POU filters should be considered an interim measure until [effective treatment is restored, or] the sources of lead have been removed and replaced with lead free plumbing materials. After replacement of lead plumbing materials or disturbance of a plumbing system, the plumbing system should be flushed for 30 minutes with aerators and screens removed from all faucets. Because you cannot see, smell, or taste lead in water, testing the water is the only way to determine if lead is present in drinking water.

To access additional information about lead in drinking water and a consumer tool for identifying POU filters certified to reduce lead, please visit U.S. EPA's website at <https://www.epa.gov/ground->



[water-and-drinking-water/basic-information-about-lead-drinking-water](#) and <https://www.epa.gov/water-research/consumer-tool-identifying-pou-drinking-water-filters-certified-reduce-lead>.

Lead in homes can also come from sources other than water. To access more information about other sources of lead, please visit IDPH's website at: <http://www.dph.illinois.gov/illinoislead>. Consider contacting your doctor to have your children tested if you are concerned about lead exposure.



## Understanding the Results:

This bi-weekly data update measures the change in lead levels in water and includes six sample groups as of July 22, 2019, and reflects 36 days with the current treatment in place.

Please note that the specific number of sites listed may differ in each sample group because we receive customer samples and results from the independent labs on different days. Also, through the cooperation of our customers, additional sample sites have been added.

It's important to know that although we can't predict an exact timeline, it will likely take several months for the new treatment to establish coating inside the pipes of homes with lead plumbing. The more customers use their water, the more exposure their plumbing will have to the new water chemistry, which will help restore the protective coating on the pipes.

In Sample Group 6, we saw a decrease in the number of samples with lead levels above 200 ug/L and an increase the number of samples with lead levels in the range of 25 to 50 ug/L levels. We also saw a decrease in the lead level for the 90<sup>th</sup> percentile result. The direction of these changes is consistent with what we expect to see if/when the treatment begins working. However, more than one sample group with decreasing levels is needed to confirm this as a trend. We do not know for certain if this is just normal variability from one event to another or if it is a trend in the right direction. We will need to observe a consistent change in the results before we can confirm the treatment is working.



### Phase 1 and Phase 2 Sampling Explained:

The samples for Sample Groups 1 through 3 included some homes built after 1990, or homes without lead solder in internal plumbing. Sample Groups 1 through 3 represent “Phase 1” of our water testing.

**Through our investigation, we believe that the source of elevated lead levels is from lead solder in homes built before 1990. Based on this information, we have coordinated with the IEPA to establish revised testing criteria to only include pre-1990 homes with lead solder in internal plumbing.** Aqua Illinois has also added more pre-1990 homes to our compliance sampling pool to advance our efforts to resolve the situation. The new sampling criteria represent “Phase 2” for the IEPA-approved water testing criteria.

Because Phase 2 represents only pre-1990 homes with lead solder, sample results for Sample Group 4 and subsequent sample groups are not directly comparable to those in Sample Groups 1 through 3 (Phase 1). This second phase of sampling criteria will enable us to conduct more targeted sampling based on the properties most likely to be impacted.

Phase 2 represents the most recent, and therefore most important, results and these will be presented first. The results for phase 1 are still included later for completeness.



## Phase 1 Sampling Results for Lead in University Park

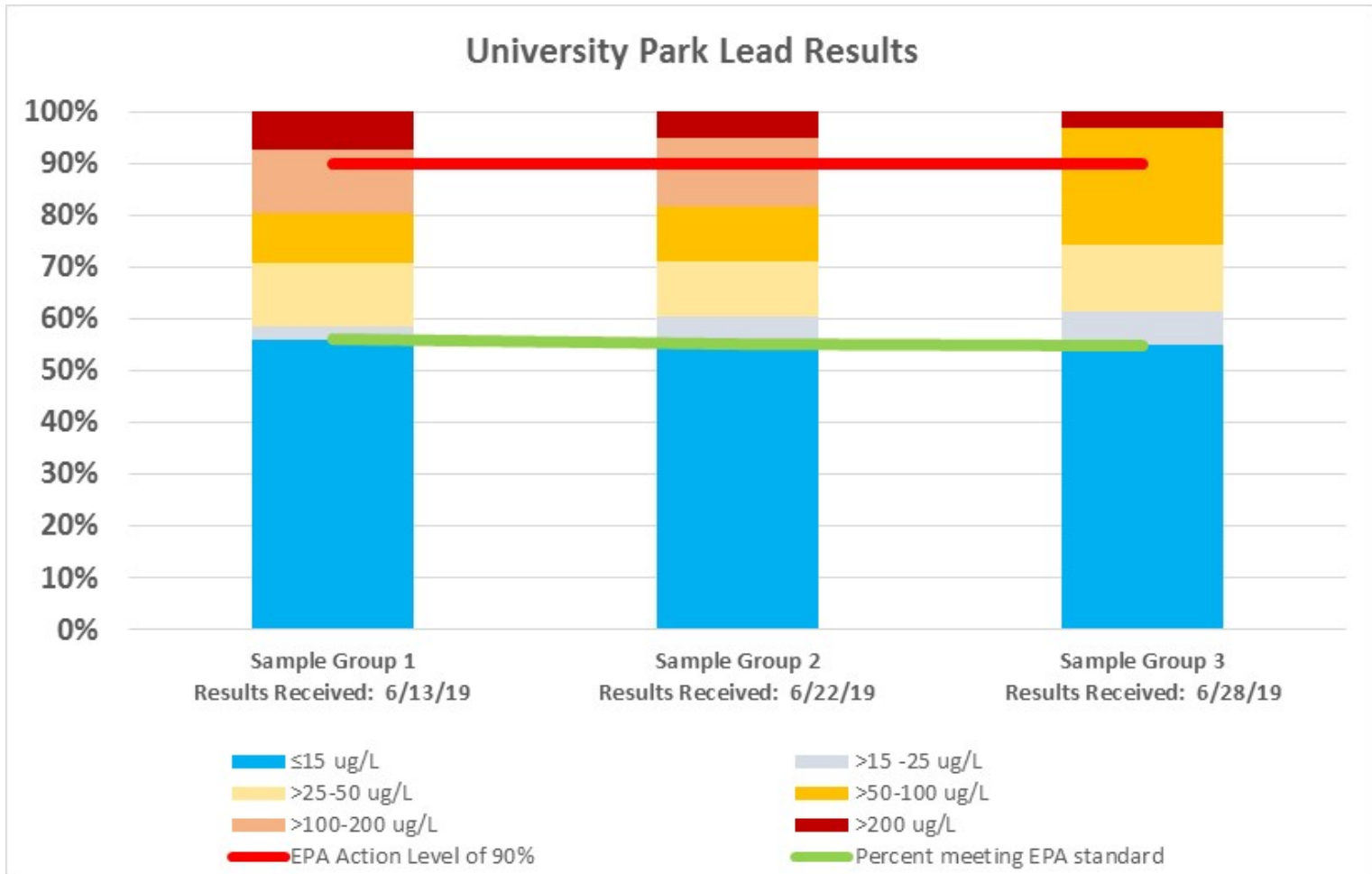
Sampling results below are provided from samples collected by customers at approximately 40 homes and businesses in the University Park area. Samples are collected after the water sat in plumbing pipes for more than 6 hours to represent a worst-case scenario. The information is shown in a graph (Figure 1) and in a data table (Table 1).

**The EPA standard states that 90% of the sample results should be below a lead concentration of 15 micrograms per liter (ug/L) in drinking water.**





Figure 1 - Original (Phase 1) IEPA Compliance Samples including Post-1990





### Phase 1 Lead Sampling Results for University Park - Sampling Groups 1 - 3

The table below represents lead sampling results from Sample Group 1 collected in May 2019 as part of our biannual required sampling, and subsequent Sample Groups 2 and 3. We were conducting weekly testing during this time period. Please note, not all results may be available in the table below for each sample group, because we may receive samples back from customers or results from the lab on different days. The table will be updated to include results as they become available. To maintain privacy of individual owners, we have identified each sample with a Home ID rather than actual street address.

**Table 1 - Original (Phase1) IEPA Compliance Samples including Post-1990 Homes – Sample Groups 1 – 3**

Home ID	Year Built	Lead Concentration (ug/L)		
		Sample Group 1 Results Received: 6/13/19	Sample Group 2 Results Received: 6/22/19	Sample Group 3 Results Received: 6/28/19
1	1970	110	150	41
2	1970	<1.0	*	*
3	1970	1.3	1.3	2.4
4	1970	<1.0	4.1	1.3
5	1970	1.3	<1.0	<1.0
6	1970	<1.0	<1.0	<1.0
7	1970	66	620	79
8	1970	14	2.5	2.4
9	1970	<1.0	<1.0	*
10	1970	92	480	59



Home ID	Year Built	Lead Concentration (ug/L)		
		Sample Group 1 Results Received: 6/13/19	Sample Group 2 Results Received: 6/22/19	Sample Group 3 Results Received: 6/28/19
11	1972	<1.0	1.4	<1.0
12	1972	<1.0	<1.0	*
13	1973	23	19	9.8
14	1973	31	38	*
15	1973	3.5	5.1	17
16	1973	670	140	240
17	1973	170	25	45
18	1970	140	160	63
19	1974	280	130	15
20	1974	88	35	24
21	1975	110	62	43
22	1975	2.8	40	*
23	NA	46	42	52
24	1975	180	130	100
25	1975	7.9	<1.0	*
26	1975	6.2	<1.0	*
27	1975	66	44	*
28	1975	41	3.2	83
29	1975	29	51	<1.0
30	1975	1	<1.0	<1.0
31	1975	9.7	9.2	5.2
32	1975	35	54	41
33	1975	1700	77	*
34	1979	1.9	<1.0	<1.0



Home ID	Year Built	Lead Concentration (ug/L)		
		Sample Group 1 Results Received: 6/13/19	Sample Group 2 Results Received: 6/22/19	Sample Group 3 Results Received: 6/28/19
35	1990	<1.0	1.3	1.6
36	1996	<1.0	<1.0	<1.0
37	1998	1.7	<1.0	*
38	2002	<1.0	<1.0	<1.0
39	2006	<1.0	*	<1.0
40	2008	<1.0	<1.0	*
41	2007	<1.0	1.1	<1.0
42	1970	*	*	91

\* Property did not return sample

Concentration Statistics (ug/L)	Parameter	Sample Group 1 Results Received: 6/13/19	Sample Group 2 Results Received: 6/22/19	Sample Group 3 Results Received: 6/28/19
	minimum	<1.0	<1.0	<1.0
	maximum	1700	620	240
	median	7.9	5.1	9.8
	average	96.1	60.0	33.1



## **Phase 2 Sampling Results for Lead in University Park**

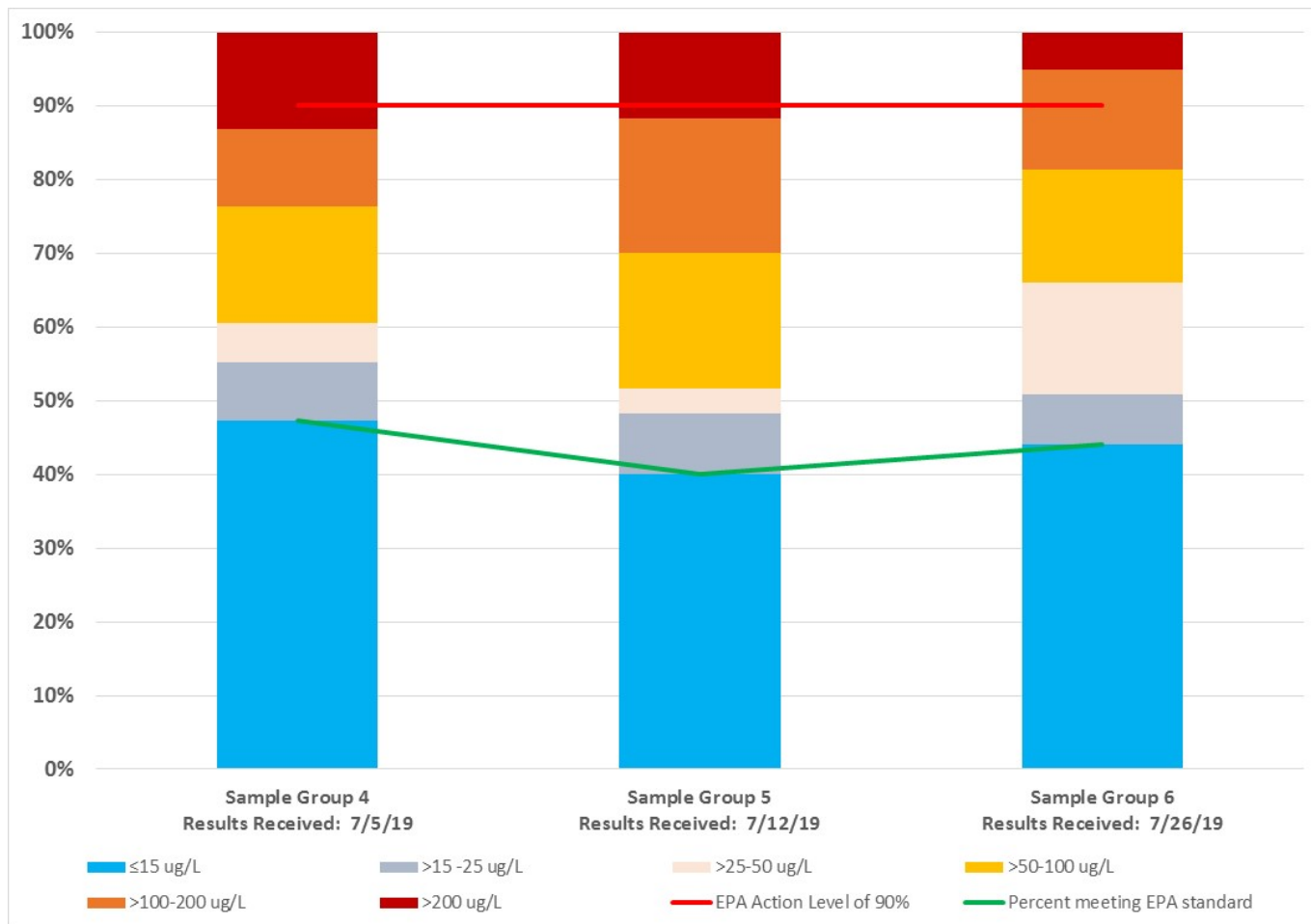
Sampling results below are provided from samples collected by customers at the expanded number of sample locations. During this period, the number of locations was increased, thanks to the cooperation of our customers, from approximately 40 to more than 80 homes and businesses in the University Park area. As part of our investigation, we removed post 1990 homes and added more pre-1986 sampling locations to the existing sample set. This ensures that our lead testing represents the various property types, ages, and plumbing construction in the community.

Samples are collected after the water sat in plumbing pipes for more than 6 hours to represent a worst-case scenario. The information is shown in a graph (Figure 2) and in a data table (Table 2).

**The EPA standard states that 90% of the sample results should be below a lead concentration of 15 micrograms per liter (ug/L) in drinking water.**



**Figure 2 – New (Phase 2) IEPA Compliance Samples including Only Pre-1990 Homes with Lead Solder in Internal Plumbing – Sample Groups 4 - 6**



\*Note: Sample Group 5 includes 15 additional pre-1990 homes beyond those included in Sample Group 4. These sample groups are not directly comparable.



**Table 2 – New (Phase 2) IEPA Compliance Samples including Only Pre-1990 Homes with Lead Solder – Sample Groups 4 – 6**

Home ID	Year Built	Sample Group 4 Results Received: 7/5/19	Sample Group 5 Results Received: 7/12/19	Sample Group 6 Results Received: 7/26/19
1	1970	130	370	120
2	1970	*	*	*
3	1970	<1.0	13	1.2
4	1970	<1.0	<1.0	3
5	1970	*	<1.0	<1.0
6	1970	<1.0	180	<1.0
7	1970	130	77	39
8	1970	3.4	7.5	2.3
9	1970	<1.0	*	*
10	1970	19	120	54
11	1972	<1.0	1.5	<1.0
12	1972	<1.0	1.5	<1.0
13	1973	18	76	120
14	1973	55	63	22
15	1973	8	12	<1.0
16	1973	150	3900	*
17	1973	83	89	74
18	1970	**	**	**
19	1974	40	100	*
20	1974	*	*	31



Home ID	Year Built	Sample Group 4 Results Received: 7/5/19	Sample Group 5 Results Received: 7/12/19	Sample Group 6 Results Received: 7/26/19
21	1975	220	230	89
22	1975	**	**	**
23	1975	66	110	60
24	1975	**	**	**
25	1975	1.2	5.3	*
26	1975	*	*	*
27	1975	*	110	120
28	1975	5.4	200	85
29	1975	52	84	87
30	1975	*	*	23
31	1975	7.2	18	17
32	1975	22	81	7.3
33	1975	480	860	3100
34	1979	<1.0	*	<1.0
35	1990	**	**	**
36	1996	**	**	**
37	1998	**	**	**
38	2002	**	**	**
39	2006	**	**	**
40	2008	**	**	**
41	2007	**	**	**
42	1970	<1.0	<1.0	*
43	1975	3.3	7.3	<1.0
44	1975	170	140	110





Home ID	Year Built	Sample Group 4 Results Received: 7/5/19	Sample Group 5 Results Received: 7/12/19	Sample Group 6 Results Received: 7/26/19
45	NA	240	140	46
46	1975	<1.0	<1.0	*
47	1973	<1.0	3.7	1.1
48	1975	5.2	5	1.4
49	1970	**	**	**
50	1972	350	1800	150
51	1973	35	1.6	6
52	1974	52	55	*
53	1976	440	140	*
54	1975	***	7.1	460
55	1975	***	24	14
56	1975	***	110	<1.0
57	1975	***	55	110
58	1979	***	2	4.7
59	1950	***	<1.0	*
60	1975	***	2.3	48
61	1972	***	210	190
62	1970	***	<1.0	<1.0
63	1975	***	41	16
64	1975	***	12	37
65	1975	***	1.5	*
66	1970	***	1.4	2.6
67	1965	***	9.5	170
68	1972	***	85	*
69	1970	***	190	84



Home ID	Year Built	Sample Group 4 Results Received: 7/5/19	Sample Group 5 Results Received: 7/12/19	Sample Group 6 Results Received: 7/26/19
70	1970	***	130	60
71	1975	***	55	27
72	1975	***	460	220
73	1975	***	34	32
74	1970	***	<1.0	<1.0
75	1973	***	16	12
76	1984	***	22	*
77	1983	***	18	6.9
78	1970	***	***	3.9
79	NA	***	***	44
80	1975	***	***	2.4
81	1970	***	***	43
82	1970	***	***	77
83	1970	***	***	14
84	1973	***	***	4.7

\* Property did not return sample

\*\* Property removed from compliance sampling poll

\*\*\*Property not yet added to sampling pool



Concentration Statistics (ug/L)	Parameter	Sample Group 4 Results Received: 7/5/19	Sample Group 5 Results Received: 7/12/19	Sample Group 6 Results Received: 7/26/19
	minimum	<1.0	<1.0	<1.0
maximum	460	3900	3100	
median	18.5	37.5	23.0	
average	76	175	103	
90th percentile	224	210	123	