BROWNELL STEM ACADEMY

Outlet Sampling and Plumbing Assessment Recommendations

6302 Oxley Drive, Flint, Michigan 48504

BACKGROUND INFORMATION

On Friday, October 30, 2015, the Department of Licensing and Regulatory Affairs (DLARA) and the Department of Environmental Quality (DEQ) conducted an assessment of the plumbing system at Brownell STEM Academy to gain a comprehensive understanding of how water moves through the building and what types of plumbing materials are used. The assessment identified the following potential sources of lead leaching into drinking water:

- Lead solder joints on copper piping
- Brass valves and brass fittings
- Brass components in fixtures
- Galvanized piping

The assessment also identified a total of 23 faucets or fountains that provide water for drinking, cooking and/or food preparation. The team developed a sequence for sampling the faucets/fountains based on how water travels through the school building.

On Saturday, October 31, 2015, the DEQ and the DLARA completed sampling of the 23 faucets/fountains in the Brownell STEM Academy school building in the order determined by the plumbing assessment from the previous day, following a stagnation period of over 12 hours. At each of the 23 faucets/fountains identified, staff collected four samples. Two initial, 125-mililiter samples (P1 and P2), were collected immediately after turning on the tap. The water was then flushed for 30 seconds and a third, 125-mililiter sample (F01) was collected. Finally, the water was flushed for another two minutes, and the fourth 125-mililiter sample (F02) was collected. These samples were used to determine the impact of any lead sources in and around each specific faucet/fountain and its connecting plumbing.

The DEQ and the DLARA then completed consecutive sampling at three of the 23 faucets/fountains in the Brownell STEM Academy school building. This consecutive sampling was used to determine the impact of any lead sources located deep in the supply plumbing of the school building. The three sites included one site near the building service line, one site near the plumbing mid-point, and one site at the far end of the plumbing system. At each of these three sites, staff collected ten, 1-liter samples. The ten samples were collected immediately after turning on the tap, and consecutively, without any flushing time in between.

WATER SERVICE INFORMATION

A four-inch diameter cast iron water service line enters the main school building in the mechanical room located in the middle of the building. Piping in the boiler room immediately transitions into galvanized metal piping and then into copper piping with lead solder joints for cold water lines. Two separate copper cold water supply lines exit the mechanical room. One through the north wall in the west corner appears to serve fixtures in the north end of the main wing of the school building. A second line exits the south wall and appears to serve fixtures in the south end of the main wing, and then continues over and serves fixtures in the west wing of the school building. Copper piping with lead solder joints branches off of the copper supply lines. Hot water is distributed in continuous loops that feed from and return to a central water heater in the mechanical room. Hot water piping material, where exposed, was copper piping with lead solder joints. Brass valves were seen throughout the building.

Outlets With Lead Levels Greater Than 15 Parts per Billion

The DEQ recommends school facilities take action if samples from any drinking water outlets show lead levels greater than 15 parts per billion. Based on the sampling conducted at 23 faucets/fountains on October 31, 2015, the following 12 drinking water outlets had lead water level results greater than 15 parts per billion. Each of these 12 outlets is listed below with its sample results, including a description of the potential source(s) of lead, and recommended actions for the school to take.

Outlet: Bubbler Drinking Fountain (DW001)

Location: North Hallway, across from Classroom 12
Results: P1=64 parts per billion, P2=4 parts per billion
F01=2 parts per billion, F02=non-detect

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Laboratory Sink Faucet, Right (CF004)

Location: Classroom 17, west wall
Results: P1=56 parts per billion, P2=29 parts per billion,
F01=7 parts per billion, F02=3 parts per billion

These results suggest the highest contribution of lead may be from the faucet and its connecting plumbing. This faucet appears to be constructed of coated brass. Connecting plumbing for this faucet was not accessible, but should be checked for additional lead containing components, including brass fittings and a brass valve.

Replacement of this faucet and its connection plumbing with lead free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Laboratory Sink Faucet, Left (CF005)

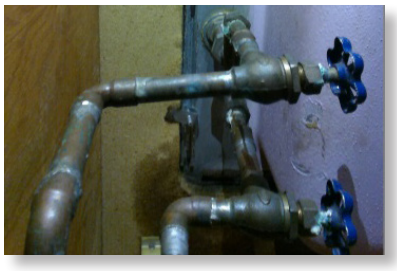
NO IMAGE AVAILABLE

Location: Classroom 17, west wall
Results: P1=31 parts per billion, P2=6 parts per billion, F01=2 parts per billion, F02=1 part per billion

These results suggest the highest contribution of lead may be from the faucet itself. This faucet appears to be constructed of coated brass. Connecting plumbing for this faucet was not accessible, but should be checked for additional lead containing components, including brass fittings and a brass valve.

Replacement of this faucet and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Sink Faucet, Left (CF007)



Location: Classroom 26, south wall
Results: P1=164 parts per billion, P2=166 parts per billion, F01=15 parts per billion, F02=1 part per billion

These results suggest the highest contribution of lead may be from the faucet and its connecting plumbing. The base of this faucet is chrome plated brass, and has a brass connection on the underside of the sink. Hot and cold water lines connect to this faucet with a brass mixer fitting under the sink. Connecting plumbing in the cabinet under the sink is copper piping with lead solder and contains additional brass components and brass shutoff valves.

Copper results for samples P1 and P2 at this location were also at levels above which the DEQ recommends school facilities take action. Copper results suggest these same brass components are contributing to this condition.

Replacement of this faucet and its connection plumbing with lead free materials will significantly reduce lead and copper exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

This faucet also has an aerator/screen at the outlet. If the faucet is not replaced, the aerator/screen should be removed, inspected for particulate accumulations, scrubbed clean, and reinstalled. If particulates are found, the aerator/screen should be periodically checked and cleaned.

Outlet: Bubbler Drinking Fountain, Right (DW008)

Location: South Hallway, across from Classroom 26
Results: P1=46 parts per billion, P2=11 parts per billion, F01=4 parts per billion, F02=1 part per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Bubbler Drinking Fountain, Left (DW009)

Location: South Hallway, across from Classroom 26
Results: P1=23 parts per billion, P2=7 parts per billion, F01=3 parts per billion, F02=2 parts per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass, has a brass connection on the underside of the unit, and a brass operating valve on the side of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Sink Faucet (CF010)

Location: Room 27 Lounge, north wall
Results: P1=25 parts per billion, P2=34 parts per billion, F01=2 parts per billion, F02=non-detect

These results suggest the highest contribution of lead may be from the faucet and its connecting plumbing. The base of this faucet is chrome plated brass, and has a brass connection on the underside of the sink. Connecting plumbing in the cabinet under the sink includes brass connectors and brass shut off valves.

Replacement of this faucet and its connection plumbing with lead free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Bubbler Drinking Fountain, Left (DW013)

Location: West Wing South Hallway, between Classrooms 1 and 2
Results: P1=27 parts per billion, P2=15 parts per billion,
F01=8 parts per billion, F02=2 parts per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Bubbler Drinking Fountain, Right (DW014)

Location: West Wing South Hallway, between Classrooms 1 and 2
Results: P1=16 parts per billion, P2=3 parts per billion,
F01=2 parts per billion, F02=1 part per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Sink Faucet (KC019)

Location: Classroom 4, east wall
Results: P1=16 parts per billion, P2=10 parts per billion,
F01=non-detect, F02=non-detect

These results suggest the highest contribution of lead may be from the faucet and its connecting plumbing. The base of this faucet is chrome plated brass. Connecting plumbing for this faucet should be checked for additional lead containing components, including brass fittings and brass valves.

Replacement of this faucet and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Bubbler Drinking Fountain, Right (DW020)

Location: West Wing North Hallway, between Classrooms 6 and 7
Results: P1=33 parts per billion, P2=15 parts per billion,
F01=20 parts per billion, F02=2 parts per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlet: Bubbler Drinking Fountain, Left (DW021)

Location: West Wing North Hallway, between Classrooms 6 and 7
Results: P1=38 parts per billion, P2=27 parts per billion,
F01=2 parts per billion, F02=2 parts per billion

These results suggest the highest contribution of lead may be from the bubbler itself. This bubbler fixture is made of chrome plated brass with a brass connection on the underside of the unit. The connection piping to the unit also contains some brass components, including brass fittings and a brass valve.

Replacement of this bubbler tap and its connection plumbing with lead-free materials will significantly reduce lead exposure at this location. If replacement is not currently feasible, sample results indicate that flushing this tap for three minutes following periods of stagnation is likely to reduce lead concentrations and lead exposure.

Outlets With Lead Levels 15 Parts per Billion or Less

While the remaining 11 outlets showed sample results to be at levels requiring no further action, several recommendations have been identified.

The fourth sample (F02) at all 23 outlets following approximately three minutes of use and flushing at a reduced flow resulted in reduced lead concentrations of 3 parts per billion or less. This indicates that flushing of all taps used for drinking, cooking, and/or food preparation for four minutes following periods of stagnation will further reduce lead exposure. It is recommended that a flushing operational procedure be developed for use by staff responsible for plumbing operations and maintenance with emphasis on flushing after weekends and holidays.

Five of these 11 outlets are comprised of similar materials as the outlets listed above and could potentially experience higher lead levels under extended periods of stagnation. These faucets/fountains include:

- Bubbler Drinking Fountain Unit in North Hallway, across from Classroom 12 (DW002)
- Chrome Plated Brass Base Faucets in Classroom 15 (CF003), Classroom 26 (CF006), Classroom 6 (CF022), and Classroom 7 (CF023)

Replacement of these fixtures with lead-free materials is also recommended.

The remaining six outlets showed sample results of 15 parts per billion or less, requiring no further action or additional recommendations. These faucets/fountains include:

- Kitchen Faucets in the Community Room (CF012), Classroom 2 (KC017), and two in Classroom 1 (KC015 and KC016).
- Integrated Bubbler Faucet in the Classroom 4 restroom (CF018)
- Water Cooler in the hallway east of the Gym (WC011)

Consecutive Sampling Results and Building Plumbing Recommendations

The consecutive samples taken on October 31, 2015, at three sites in the Brownell STEM Academy school building provide additional confirmation that the highest contribution of lead appears to be from the individual faucet/fountains and not from the larger diameter supply plumbing within the school building. However, results from Classroom 17 also suggest that the copper supply line with lead solder joints serving the north hallway in the main wing may contain more stagnant water due to the limited number of fixtures served by this line and their lack of use. A flushing operational procedure may further reduce lead contributions from this supply line caused by stagnant conditions related to its use. Results of the consecutive sample monitoring are listed in the table below.

Consecutive Sample No.	1	2	3	4	5	6	7	8	9	10
LOCATION	**LEAD RESULT (PARTS PER BILLION; ND = NOT-DETECTED)**									
Classroom 17 Lab Sink Faucet (CF004)	10	3	3	3	2	2	2	2	2	2
Community Room Sink Faucet (CF012)	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Classroom 7 Sink Faucet (CF023)	2	ND	ND	ND	ND	ND	ND	ND	ND	ND

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ANALYTE	RESULT (mg/L)	ANALYTE	RESULT (mg/L)	Sample Description	Site Code	Site Code Description
Lead	0.027	Copper	0.14	DW013-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.015	Copper	0.13	DW013-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.008	Copper	0.09	DW013-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.00	DW013-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.038	Copper	0.10	DW021-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.027	Copper	0.00	DW021-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.00	DW021-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.00	DW021-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.008	Copper	0.00	CF023-RM #7	P1	First Primary draw of 125 milliliters
Lead	0.012	Copper	0.15	CF023-RM #7	P2	Second Primary draw of 125 milliliters
Lead	0.000	Copper	0.06	CF023-RM #7	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF023-RM #7	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.016	Copper	0.08	DW014-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.003	Copper	0.00	DW014-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.00	DW014-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.001	Copper	0.00	DW014-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.016	Copper	0.18	KC019-RM #4	P1	First Primary draw of 125 milliliters
Lead	0.010	Copper	0.28	KC019-RM #4	P2	Second Primary draw of 125 milliliters
Lead	0.000	Copper	0.00	KC019-RM #4	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	KC019-RM #4	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.033	Copper	0.16	DW020-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.015	Copper	0.12	DW020-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.020	Copper	0.00	DW020-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.00	DW020-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.012	Copper	0.14	DW002-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.007	Copper	0.08	DW002-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.004	Copper	0.00	DW002-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.001	Copper	0.00	DW002-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.011	Copper	0.20	CF022-RM #6	P1	First Primary draw of 125 milliliters
Lead	0.006	Copper	0.22	CF022-RM #6	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.00	CF022-RM #6	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.07	CF022-RM #6	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.009	Copper	0.07	CF006-RM 26	P1	First Primary draw of 125 milliliters
Lead	0.010	Copper	0.15	CF006-RM 26	P2	Second Primary draw of 125 milliliters
Lead	0.004	Copper	0.16	CF006-RM 26	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF006-RM 26	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.056	Copper	0.21	CF004 RM 17	P1	First Primary draw of 125 milliliters
Lead	0.029	Copper	0.14	CF004-RM 17	P2	Second Primary draw of 125 milliliters
Lead	0.007	Copper	0.16	CF004-RM 17	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.003	Copper	0.17	CF004-RM 17	F02	Flush Sample taken 2 minutes after First Flush Sample

Note: Results of "Not Detected" have been converted to a numerical value of zero to allow for ease of sorting.
Results in RED exceed 15 ppb for lead or 1.3 ppm for Copper
1 ppb = 0.001 mg/L

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ANALYTE	RESULT (mg/L)	ANALYTE	RESULT (mg/L)	Sample Description	Site Code	Site Code Description
Lead	0.011	Copper	0.14	KC016-RM-#1	P1	First Primary draw of 125 milliliters
Lead	0.003	Copper	0.14	KC016-RM-#1	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.05	KC016-RM-#1	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	KC016-RM-#1	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.013	Copper	0.18	KC017-RM #2	P1	First Primary draw of 125 milliliters
Lead	0.008	Copper	0.18	KC017-RM #2	P2	Second Primary draw of 125 milliliters
Lead	0.001	Copper	0.00	KC017-RM #2	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	KC017-RM #2	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.010	Copper	0.09	CF018-RM #4	P1	First Primary draw of 125 milliliters
Lead	0.007	Copper	0.11	CF018-RM #4	P2	Second Primary draw of 125 milliliters
Lead	0.000	Copper	0.00	CF018-RM #4	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF018-RM #4	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.007	Copper	0.13	KC015-RM #1	P1	First Primary draw of 125 milliliters
Lead	0.002	Copper	0.27	KC015-RM #1	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.00	KC015-RM #1	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.07	KC015-RM #1	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.031	Copper	0.08	CF005-RM 17	P1	First Primary draw of 125 milliliters
Lead	0.006	Copper	0.07	CF005-RM 17	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.06	CF005-RM 17	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.001	Copper	0.06	CF005-RM 17	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.064	Copper	0.11	DW001-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.004	Copper	0.09	DW001-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.09	DW001-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	DW001-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.023	Copper	0.33	DW009-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.007	Copper	0.09	DW009-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.003	Copper	0.00	DW009-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.00	DW009-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.025	Copper	0.19	CF010-RM 27	P1	First Primary draw of 125 milliliters
Lead	0.034	Copper	0.16	CF010-RM 27	P2	Second Primary draw of 125 milliliters
Lead	0.002	Copper	0.00	CF010-RM 27	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF010-RM 27	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.164	Copper	2.04	CF007-RM 26	P1	First Primary draw of 125 milliliters
Lead	0.166	Copper	1.74	CF007-RM 26	P2	Second Primary draw of 125 milliliters
Lead	0.015	Copper	0.78	CF007-RM 26	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.001	Copper	0.06	CF007-RM 26	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.007	Copper	0.14	CF003-RM 15	P1	First Primary draw of 125 milliliters
Lead	0.011	Copper	0.11	CF003 RM 15	P2	Second Primary draw of 125 milliliters
Lead	0.001	Copper	0.09	CF003-RM 15	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF003-RM 15	F02	Flush Sample taken 2 minutes after First Flush Sample

Note: Results of "Not Detected" have been converted to a numerical value of zero to allow for ease of sorting.
Results in RED exceed 15 ppb for lead or 1.3 ppm for Copper
1 ppb = 0.001 mg/L

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ANALYTE	RESULT (mg/L)	ANALYTE	RESULT (mg/L)	Sample Description	Site Code	Site Code Description
Lead	0.000	Copper	0.06	CF012	P1	First Primary draw of 125 milliliters
Lead	0.014	Copper	0.13	CF012	P2	Second Primary draw of 125 milliliters
Lead	0.000	Copper	0.00	CF012	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.000	Copper	0.00	CF012	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.011	Copper	0.56	WC011-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.014	Copper	0.67	WC011-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.014	Copper	0.39	WC011-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.002	Copper	0.06	WC011-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.046	Copper	0.42	DW008-DRINKING	P1	First Primary draw of 125 milliliters
Lead	0.011	Copper	0.10	DW008-DRINKING	P2	Second Primary draw of 125 milliliters
Lead	0.004	Copper	0.00	DW008-DRINKING	F01	Flush Sample taken 30 Seconds after Second Primary Draw
Lead	0.001	Copper	0.00	DW008-DRINKING	F02	Flush Sample taken 2 minutes after First Flush Sample
Lead	0.010	Copper	0.17	CF004 - RM #17	CA1	First Sequential Sample
Lead	0.003	Copper	0.17	CF004 - RM #17	CA2	Second Sequential Sample
Lead	0.003	Copper	0.18	CF004 - RM #17	CA3	Third Sequential Sample
Lead	0.003	Copper	0.19	CF004 - RM #17	CA4	Forth Sequential Sample
Lead	0.002	Copper	0.20	CF004 - RM #17	CA5	Fifth Sequential Sample
Lead	0.002	Copper	0.19	CF004 - RM #17	CA6	Sixth Sequential Sample
Lead	0.002	Copper	0.19	CF004 - RM #17	CA7	Seventh Sequential Sample
Lead	0.002	Copper	0.19	CF004 - RM #17	CA8	Eigth Sequential Sample
Lead	0.002	Copper	0.18	CF004 - RM #17	CA9	Ninth Sequential Sample
Lead	0.002	Copper	0.17	CF004 - RM #17	CA10	Tenth Sequential Sample
Lead	0.002	Copper	0.00	CF012 -	CB1	First Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB2	Second Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB3	Third Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB4	Forth Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB5	Fifth Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB6	Sixth Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB7	Seventh Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB8	Eigth Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB9	Ninth Sequential Sample
Lead	0.000	Copper	0.00	CF012	CB10	Tenth Sequential Sample
Lead	0.002	Copper	0.00	CF023	CC1	First Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC2	Second Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC3	Third Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC4	Forth Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC5	Fifth Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC6	Sixth Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC7	Seventh Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC8	Eigth Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC9	Ninth Sequential Sample
Lead	0.000	Copper	0.00	CF023	CC10	Tenth Sequential Sample

Note: Results of "Not Detected" have been converted to a numerical value of zero to allow for ease of sorting.
Results in RED exceed 15 ppb for lead or 1.3 ppm for Copper
1 ppb = 0.001 mg/L