

Reducing Lead in Schools

Testing School Drinking Water for Lead

EPA REGION 8

JULY 9, 2019

Presenters



Kim Bartels
EPA Region 8
Children's Environmental Health Advisor
bartels.kim@epa.gov
303.312.6346



Natalie Cannon
Former EPA Region 8 Lead and Copper Rule Manager

For Questions, Please Contact:
Chelsea Ransom
Current EPA Region 8 Lead and Copper Rule Manager
ransom.chelsea@epa.gov
303.312.6876

Co-Presenters from Pinedale, WY



Spencer Hartman
Town of Pinedale
Microbiology Lab Analyst
Water / Wastewater Operator
spencerhartman@townofpinedale.us



Jay Harnack
Sublette County School District #1
Superintendent
jharnack@sub1.org

Presenter from Northern CO



Jess Arnold
Thompson School District
Environmental Specialist
jess.arnold@thompsonschools.org

Webinar III – WIIN & 3Ts

Coming this Fall

Building the Capacity of Drinking Water Systems

Building the Capacity of Drinking Water Systems Home

About Small Systems

Small System Resources

Information for States

Compliance Help

Capacity Development Partners

EPA Capacity Development Contacts

WIIN Grant: Lead Testing in School and Child Care Program Drinking Water

Authorized under the Water Infrastructure Improvements for the Nation (WIIN) Act, the Lead Testing in School and Child Care Program Drinking Water Grant creates a voluntary program to assist with testing for lead in drinking water at schools and child care programs. The grant will include a approximately \$43.7 million in funding.

[View the national allotments for this grant](#)

CONTACT US
SHARE [f](#) [t](#) [p](#) [e](#)

Upcoming Webinar

June 27th, 2019 - [Webinar on EPA's Lead Testing in School and Child Care Program Drinking Water Grant.](#) [EXIT](#)

<https://www.epa.gov/ground-water-and-drinking-water/3ts-reducing-lead-drinking-water-toolkit>

<https://www.epa.gov/dwcapacity/wiin-grant-lead-testing-school-and-child-care-program-drinking-water>

Ground Water and Drinking Water

CONTACT US SHARE [f](#) [t](#) [p](#) [e](#)

3Ts for Reducing Lead in Drinking Water Toolkit

EPA's 3Ts - **Training, Testing, and Taking Action** - provides tools for schools, child care facilities, states, and water systems to implement voluntary lead in drinking water testing programs.



Additional Resources

- [3Ts Case Studies Map](#)
- [EPA schools and child care WIIN grant](#)
- [3Ts Highlights \(printable version\)](#)

[View slides about how to develop a 3Ts Program](#)

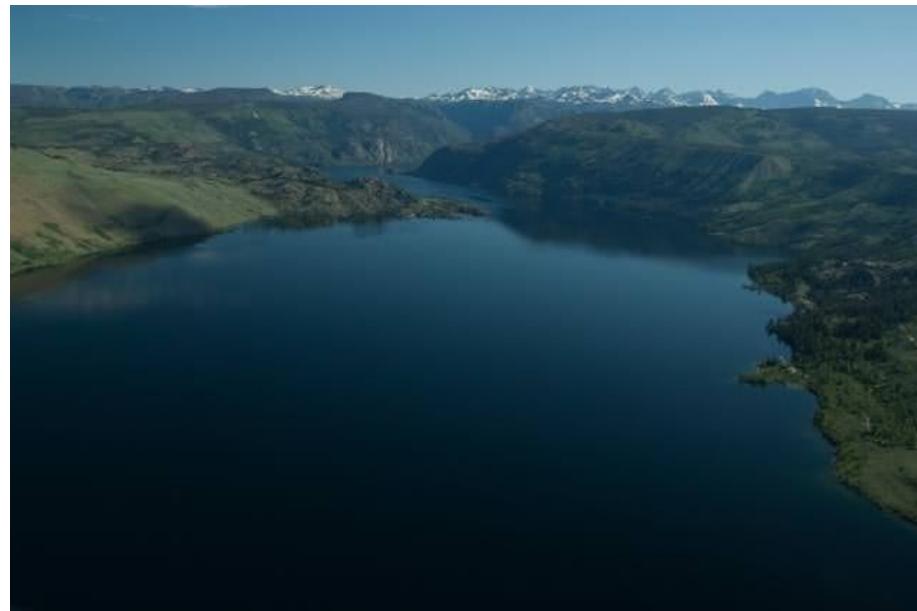
EPA Region 8 Reducing Lead in Schools Webinar

Town of Pinedale
and
Sublette County School District 1

Town of Pinedale Water System

Town of Pinedale, WY

- 1,200 service connections
- 2,000 Town residents
- Fremont Lake is Town's water supply
- Pristine glacial water that does not require filtration



Lead & Copper Siting Plan

- Updated sample siting plan in Summer of 2016
 - Incorporate latest EPA guidance on sampling locations
- Identify Tier 1 homes (built between 1983-1988)
- Two school facilities identified as Tier 2 locations
 - Non-single family homes built between 1983-1988
- Sampling began in Fall of 2016
- One location at the High School tested above 0.015 mg/L

Corrosion Control Treatment

- During the Fall of 2016 the Town was also working through the process of changing corrosion control treatments
- Identified pH adjustment as most effective method of corrosion control
- Shared information with School District throughout the study and implementation phase

Long Term Corrosion Control Strategy

- Monitoring pH throughout the Town's distribution system
- Conduct routine flushing program to prevent stagnant water
 - Coordinate flushing program with School District
- Use Hach LeadTrak to allow faster results for in-house lead testing
- Test school facilities at the beginning of each school year

Lead Exposure in a Rural School District

Sublette County School District 1

- Rural Western Wyoming
- 1100 students
- 5 schools
- 100 miles from a population center with common services
(Walmart, etc.)



Lead Exposure in a Rural School District

- Notified by the Town of Pinedale on September 7, 2016 that lead was detected above the action level at several locations on our high school campus and administration building.
- The administration building included an early childhood program.
- School was in session.

Lead Exposure in a Rural School District

Immediate Action Steps: Day 1

1. Prohibit access to all identified sources and all water fountains, and showers in identified buildings until full testing could be done to identify the source of lead.
2. Provide clean drinking water for all schools affected.
 - a. This was a challenge. There is no company in our town capable of this. The nearest provider was 100 miles away.
 - b. Estimate the volume of water needed and delivery method (bottles, stations, etc.).
3. Press release of notification from town regarding test results.

Lead Exposure in a Rural School District

Short-Term Action Steps: Days 2-10

1. Develop a scope and timeline for lead testing within the school(s).
 - a. Identify a lab capable of providing EPA level lead testing.
 - i. For us, this was four hours away and required driving or shipping water samples.
 - b. Understand the cost of sampling every water source in a school to identify the source. \$25 per test.
 - c. Work with an engineering firm to identify the source and remediation actions.
 - d. A public notification of lead in the water at a school will result in large scale concern for all schools. We tested all sources in affected buildings and adjacent schools that did not show elevated lead levels to demonstrate an abundance of caution and provide confidence to students, parents and staff. Our initial sample was nearly 50 sources.

Lead Exposure in a Rural School District

Short-Term Action Steps: Days 2-10

2. Develop a communications plan including mechanism for two-way communication with stakeholders.
 - a. Get in front of the issue and over communicate, particularly on social media.
 - b. Demonstrate transparency and a sense of urgency.
 - i. We posted raw testing data on our school website.
 - ii. Provide regular updates on the process.
 - iii. Joint press releases with utility provider if they are willing.
 - iv. Be a mythbuster. Educate your stakeholders on the truths of lead in water and lead exposure. We used official EPA and CDC resources and websites.

Lead Exposure in a Rural School District

Long-Term Action Steps: Days 10+

1. Identify the source(s).
 - a. Easier said than done in some cases.
 - b. We were fortunate. In our case, it was not a result of lead pipes, but of lead solder on copper pipes (primarily in fixtures) leaching into the water as a result of a pH change in the water arriving from the utility.
2. Develop a remediation plan.
 - a. Ours involved a joint plan with the town who was changing their treatment plan and included flushing and the replacement of fixtures.

Lead Exposure in a Rural School District

Long-Term Action Steps: Days 10+

3. Develop a long-term testing plan and communication plan.
 - a. We have worked with the town to test regularly. We notify our stakeholders and post official results.
 - b. Because pH is a key indicator for us, we purchased low cost pH meters and routinely check pH in-house as a leading indicator for potential issues.

Lead Exposure in a Rural School District

Recommendations

1. If you have buildings that are at-risk based on age, develop and implement a consistent testing plan.
2. Develop a budget for routine testing and a contingency fund for a positive result.
3. Develop a communication plan that provides for two-way communication.
Partly as a result of this event, we now use a social platform that allows stakeholders to ask questions of district staff. The platform archives all communication and responses and increases the priority of responses based on critical words the district identifies.

Testing of School Drinking Water for Lead

Jess Arnold, Environmental Specialist
Kristen Battige, Director of Operations



#WeAreThompson

Overview

- Thompson School District
- Grant Opportunity
- Local Partnerships
- Application Process
- Sampling, Results, Actions
- Conclusions & Next Steps
- Acknowledgements

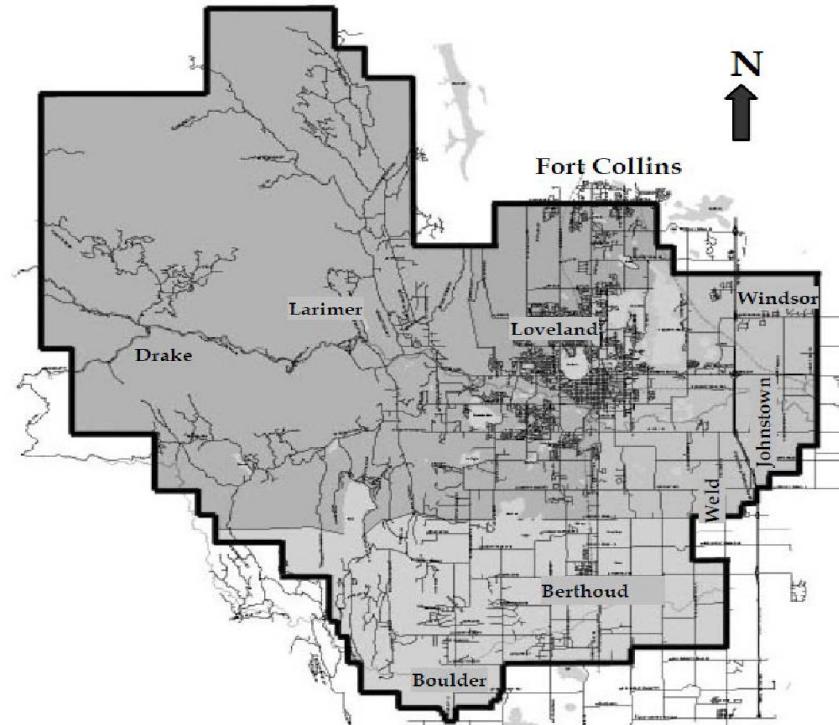


Thompson School District

- 31 schools
- ~16,000 students
- ~2,000 staff

Limited prior testing due to resources and staffing

Testing performed for tap safety



Grant Opportunity

- ❖ Dec 2017
 - TSD applied for Lead Testing in Public Schools Grant via CDPHE
 - Submitted 22 applications for Phase 1 schools
 - Oldest schools with youngest student populations
- ❖ June 2018
 - Submitted 9 applications for Phase II schools
 - Newer construction and older student populations



Local Partnerships

- ❖ City of Loveland Water Dept

- Performed lead testing at WQL

- Provided documents, analysis and staff time

- NO charge for services

- ❖ Colorado State University

- Dept of Civil & Environmental Engineering

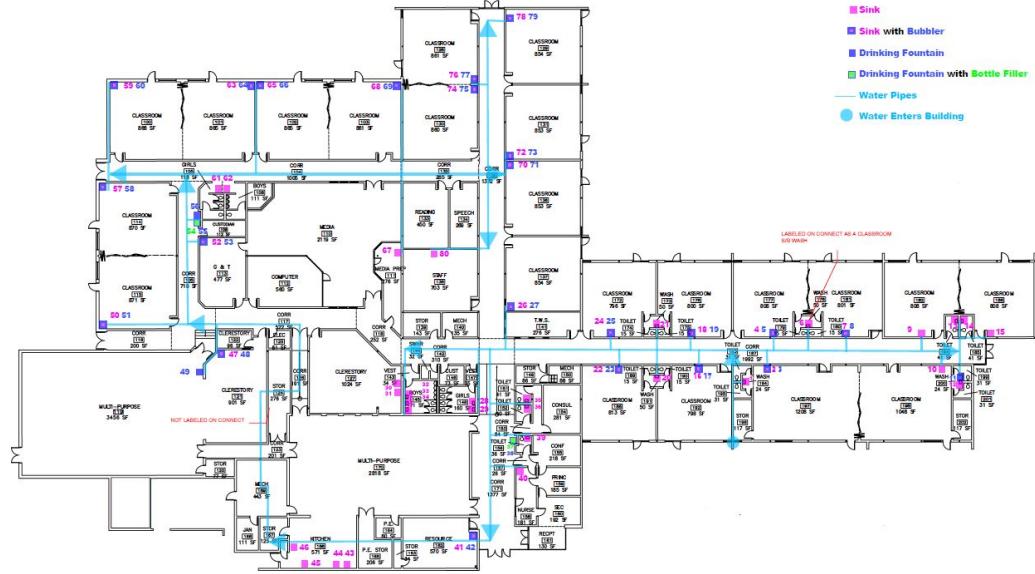
- Interns performed sampling, COC's and delivery of samples



Application Process

Individual applications for each location, including date of construction, number of students, budgetary information, and a detailed sampling plan.

School name	County	Number of students	Sample ID	Room	Room Type	Wall	Sample Fixture
TSD Example School	Larimer	500	1	121	Classroom	NW	Sink
TSD Example School	Larimer	500	2	126	Kitchen	NE	Sink
TSD Example School	Larimer	500	3	124	Bathroom	NW	Sink
TSD Example School	Larimer	500	4	123	Pre-K	NE	Sink
TSD Example School	Larimer	500	5	123	Pre-K	NE	Drinking Fountain
TSD Example School	Larimer	500	6	130	Bathroom	SE	Sink
TSD Example School	Larimer	500	7	129	Pre-K	SE	Sink
TSD Example School	Larimer	500	8	129	Pre-K	SE	Drinking Fountain
TSD Example School	Larimer	500	9	122	Bathroom	SW	Sink
TSD Example School	Larimer	500	10	119	Bathroom	NE	Sink
TSD Example School	Larimer	500	11	118	Classroom	NW	Sink
TSD Example School	Larimer	500	12	106	Bathroom	SW	Sink
TSD Example School	Larimer	500	13	107	Bathroom	SW	Sink
TSD Example School	Larimer	500	14	105	Bathroom	NE	Sink
TSD Example School	Larimer	500	15	104	Clinic	NE	Sink
TSD Example School	Larimer	500	16	143	Women's	SW	Left Sink
TSD Example School	Larimer	500	17	143	Women's	SW	Right Sink
TSD Example School	Larimer	500	18	144	Men's	SW	Right Sink
TSD Example School	Larimer	500	19	144	Men's	SW	Left Sink
TSD Example School	Larimer	500	20	147	Cafeteria	N	Left Most Drinking Fountain
TSD Example School	Larimer	500	21	147	Cafeteria	N	Left Bottle Filler
TSD Example School	Larimer	500	22	147	Cafeteria	N	2nd Drinking Fountain from Left
TSD Example School	Larimer	500	23	147	Cafeteria	N	2nd Drinking Fountain from Right
TSD Example School	Larimer	500	24	147	Cafeteria	N	Right Bottle Filler
TSD Example School	Larimer	500	25	147	Cafeteria	N	Right Most Drinking Fountain
TSD Example School	Larimer	500	26	148	Music	NE	Sink
TSD Example School	Larimer	500	27	149	Kitchen	E	Sink
TSD Example School	Larimer	500	28	149	Kitchen	Island	Sink
TSD Example School	Larimer	500	29	151	Bathroom	S	Sink
TSD Example School	Larimer	500	30	149	Kitchen	SE	Sink
TSD Example School	Larimer	500	31	190	Women's	N	Right Sink
TSD Example School	Larimer	500	32	190	Women's	N	Left Sink
TSD Example School	Larimer	500	33	187	Classroom	S	Sink
TSD Example School	Larimer	500	34	186	CTFAM	S	Sink

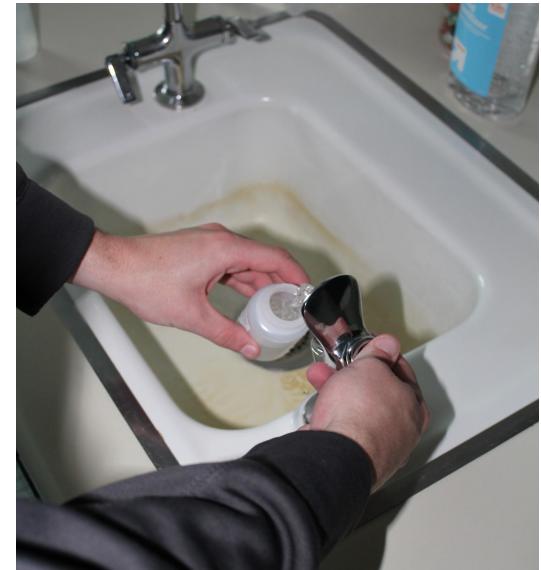
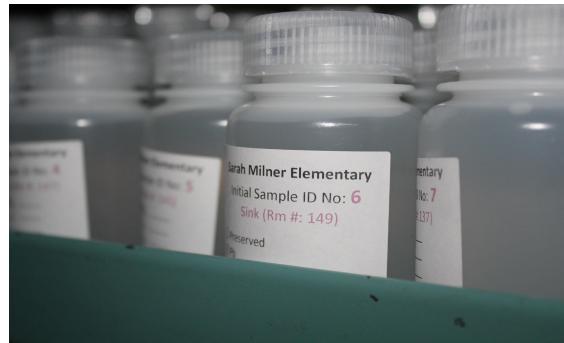


*The City of Loveland Water Department staff were instrumental in supporting these grant submittals.

Sampling

- ❖ Conducted from March to December 2018
- ❖ Collected first draw and 30 sec flush samples (hand sinks, drinking fountains, and bottle fillers)
- ❖ Analysis by City of Loveland WQL
- ❖ One week turnaround on samples
- ❖ Action threshold of 15 ppb for remediation

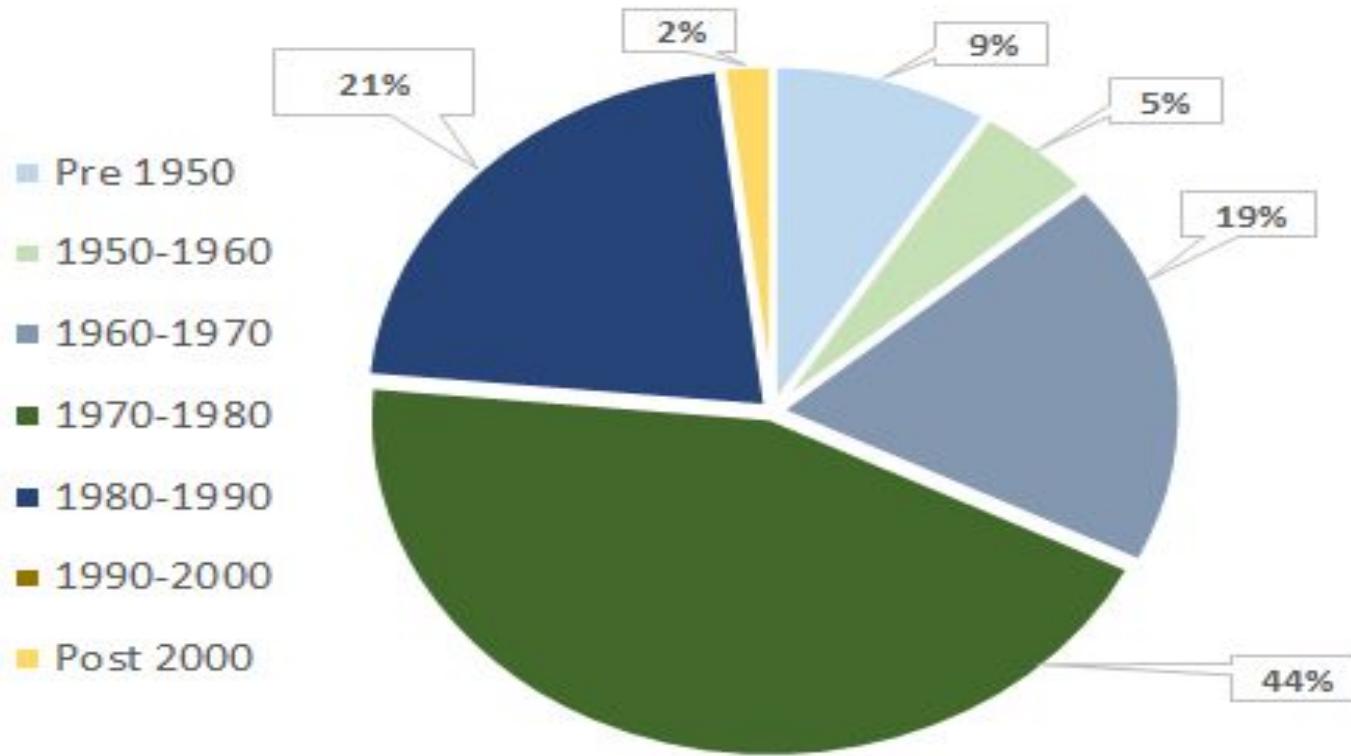
Building ID: 122				Sampling	
Time	Sample ID	Room	Room Type	Sample Type	Location
7:49	32	161	Classroom	N	Sink
7:49	33	161	Classroom	N	Bubbler
OFF	34	160	Classroom	N	Sink
OFF	35	160	Classroom	N	Bubbler
7:55	36	A12	Classroom	N	Sink
7:55	37	A12	Classroom	N	Bubbler
7:57	38	A13	Classroom	N	Sink
7:57	39	A13	Classroom	N	Bubbler
8:07	40	A16	Classroom	N	Sink
8:00	41	A16	Classroom	N	Bubbler
8:02	42	A8	Girls Bathroom	S	Left sink
8:02	43	A8	Girls Bathroom	S	Right sink
8:04	44	A5	Boys Bathroom	S	Left sink
8:04	45	A5	Boys Bathroom	S	Right sink
8:04	46	A17	Classroom	S	Sink
47	A17	Classroom		S	Bubbler
48	A20	Classroom		S	Sink
49	A20	Classroom		S	Bubbler
50	A21	Classroom		S	Sink
51	A21	Classroom		N	Right sink
52	A42	Boys Bathroom		N	Left sink
	A42	Boys Bathroom		N	Sink



	Phase 1 Sampling School Name	Number of Drinking Water Fixtures Tested	Number of Samples above 15 ppb (as of 5/7/18)
1	B.F. Kitchen Elementary	53	1
2	Berthoud Elementary	80	3
3	Big Thompson Elementary	58	1
4	Bill Reed Middle School	101	8
5	Carrie Martin Elementary	66	3
6	Centenial Elementary	101	1
7	Conrad Ball Middle School	94	7
8	Cottonwood Plains Elementary	105	0
9	Garfield Elementary	59	3
10	Ivy Stockwell Elementary	66	12
11	Laurene Edmondson	68	1
12	Lincoln Elementary	69	1
13	Mary Blair Elementary	90	0
14	Monroe Elementary	83	0
15	Namaqua Elementary	94	8
16	Sarah Milner Elementary	72	5
17	Stansberry Elementary	59	6
18	Truscott Elementary	32	0
19	Turner Middle School	61	5
20	Van Buren Elementary	76	2
21	Walt Clark Middle School	93	2
22	Winona Elementary	104	1
Total Drinking Water Samples Collected		1684	70
% of Samples Above District Action Threshold			4.16%

Phase 2 Sampling School Name		Number of Drinking Water Fixtures Tested	Number of Samples above 15 ppb
1	Berthoud High School	92	13
2	Coyote Ridge Elementary	77	0
3	Harold Ferguson High School	46	2
4	High Plains Elementary	94	0
5	Loveland High School	145	7
6	Lucile Erwin Middle School	90	0
7	Mountain View High School	149	2
7	Mountain View Aquatic Center	27	0
8	Ponderosa Elementary	97	0
9	Thompson Valley High School	109	7
10	**Turner Early Childhood Center	5	0
11	**Monroe Early Childhood Center	18	0
12	**Community Connections	12	1
Total Drinking Water Samples Collected		961	32
Drinking water samples collected with CDPHE grant		926	31
**Non-funded samples collected		35	1
% of Samples Above District Action Threshold			3.3%

Percentage of Samples >15.00 ppb By Year Built



Note: % is based on 102 total samples from 34 TSD locations

Actions Taken

- School notified and fixtures taken out of service
- Signage placed for handwashing only
- PIO notified parents and staff
- Maintenance staff investigated and chose best action; fixture replacement or filter install
- Resampled fixtures with 1st draw or 30 second flush
- Remediation included fixture replacement, installation of lead filters, removal of fixtures, or permanent signage

Conclusion & Next Steps

- ❖ April 2019 all remediation actions are complete
- ❖ A total of 2,645 fixtures sampled across 34 locations
- ❖ 3.9% of fixtures in TSD required remediation
- ❖ Goal of improving building safety for students, staff, and community achieved
- ❖ Implementation of a process to flush water supplies
- ❖ Developing a recurring sampling plan and management system



Acknowledgements

- City of Loveland: Michelle Erickson, Ruth Hecker, Sandy Mauer
- Colorado State University: Dr. Pinar Omur-Ozbek and student interns
- CDPHE: Thomas Valenta, Kristen Hughes
- Thompson School District: Larry Tanella, Steve Schaefer, Jason Arebalos, Glen Cooper, Mindy Oliphant, Mike Hausmann, Custodial Staff, Principals, and Administration





- *Empower to Learn*
- *Challenge to Achieve*
- *Inspire to Excel*

Questions?

Jess Arnold
Environmental Specialist
255 S. Cleveland
Loveland, CO 80537
jess.arnold@thompsonschools.org
970-613-5381