Water Testing Protocols

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Today’s Discussion

• Drinking Water Resources
• Drinking Water Quality
• Drinking Water Requirements
• Issues, Updates & Funding
• Best Practices for Water Testing
• Mitigation to Improve Water Quality
Drinking Water Resources

- [https://www.michigan.gov/mileadsafe](https://www.michigan.gov/mileadsafe)
  - Lead in drinking water information
  - Educational resources, health effects, reducing risk
  - “Together, Let’s Get the Lead Out” video
  - Links: regulatory information, drinking water in schools, etc.

- [https://www.michigan.gov/schoolwater](https://www.michigan.gov/schoolwater)
  - School drinking water training program
    - Templates, guidance documents & videos

- [https://www.michigan.gov/pfasresponse](https://www.michigan.gov/pfasresponse)
  - Emerging chemical contaminants
  - Frequently asked questions
Drinking Water Quality

• “Contaminant”
  – Anything other than water molecules
  – Presence may not pose health risk
  – Certain amounts may be harmful

• Potential contaminants
  – Biological
    • Bacteria, viruses, protozoan, parasites, algae
  – Chemical
    • Metals, pesticides, herbicides, solvents, toxins, etc.
  – Physical
    • Organic material, sediments
Drinking Water Requirements

Michigan Safe Drinking Water Act

Community Water Supply (CWS)

Noncommunity Water Supply
Drinking Water Requirements

- Construction
- Operation
- Maintenance
- Monitoring
- Public Notice
- Education
Drinking Water Issues

- No regulations for school buildings on CWS
- Building plumbing concerns
Drinking Water Issues

- Living organisms
  - Coliform bacteria
  - E. coli
  - Viruses
Drinking Water Issues

- Lead & Copper

Old Buildings

Old Plumbing

Intermittent Water Use

Water Quality Problems

Vulnerable Population
Drinking Water Issues

• PFAS
  – Per- and polyfluoroalkyl substances
  – Large group of man-made chemicals
  – Used globally for
    • Fire-fighting foams
    • Carpeting
    • Waterproof clothing
    • Food paper wrappings
  – A source water issue, not a plumbing issue
Updates & Funding

- Lead & copper rule changes
- Legislative mandates
- Federal assistance
- Other funds
Best Practices for Water Testing

Michigan Department of Environment, Great Lakes and Energy
Drinking Water and Environmental Health Division
525 West Allegan Street
P.O. Box 3041
Lansing, Michigan 48909-7741

MICHIGAN SAFE DRINKING WATER ACT
1976 PA 399, as Amended,
MCL §§325.1001 to 325.1023
And the
Administrative Rules,
Supplying Water to the Public
R 325.10101 to R 325.12820

Compliance

Investigative
SCHOOL DRINKING WATER TRAINING PROGRAM
10 Basic Steps to School Water Testing

This document is intended to serve as basic steps to help schools and child care facilities reduce lead in drinking water. For more information on school drinking water go to www.michigan.gov/schoolwater.

10 Basic Steps

☐ 1 COMMUNICATE WITH PARENTS & STAFF
   Show your commitment to protecting children and staff.

☐ 2 DO A PLUMBING ASSESSMENT
   Look for lead plumbing and determine the flow of water through the building.

☐ 3 IDENTIFY DRINKING WATER FIXTURES
   Find and assign a unique code to each fixture in preparation for sampling.

☐ 4 DEVELOP A SAMPLING PLAN
   Develop a Drinking Water Sampling Plan in order to collect proper samples.

Before sampling, have a plan for communicating to parents and staff on:
- What you are doing
- When you will do it
- How you will respond to sample results to protect everyone in the building
- Who to contact for more information

☐ 5 COLLECT SAMPLES
Best Practices for Water Testing

• Pre-Sampling Preparation
  – Conduct plumbing assessment
  – Identify water outlets
  – Develop the plan
  – Schedule
  – Gather
  – Notify

http://www.quotationof.com/preparation.html
Best Practices for Water Testing

- **Bottles**

**Bacteriological Samples**

New Unit 30 bottle

Bottles must be filled between the 100 ml line and the MAX FILL line. Any samples received over or under these lines will not be tested.

**Lead and/or Copper Samples**
Best Practices for Water Testing

Do not shut off valves!
Best Practices for Water Testing
Best Practices for Water Testing

• Sampling Day (Investigative)
  – 8-hours of no water use
  – Sample in specific order
  – First-draw sample
  – Flush sample
    • 30-second flush at taps
    • 15-minute flush at water coolers
Best Practices for Water Testing
Best Practices for Water Testing

Do not remove aerators or screens

SAMPLE FROM COLD WATER SIDE ONLY
Best Practices for Water Testing

• Record observations
Best Practices for Water Testing

- Flush Samples

30 second flush
Best Practices for Water Testing

• Paperwork!
Suggested Mitigation

- Action on high results is health based

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<th>Sample Point:</th>
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<td>Untreated Public Distribution System</td>
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<td>Date Tested:</td>
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The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have:

5 ppb = 0.005 mg/L
5 ppb = 5 ug/L
Suggested Mitigation

• Immediate response
Suggested Mitigation

• Short-term actions
Suggested Mitigation

• Long-term actions
Suggested Mitigation

• Institutional Control
Clean it Out!
Flush it Out!
Questions?