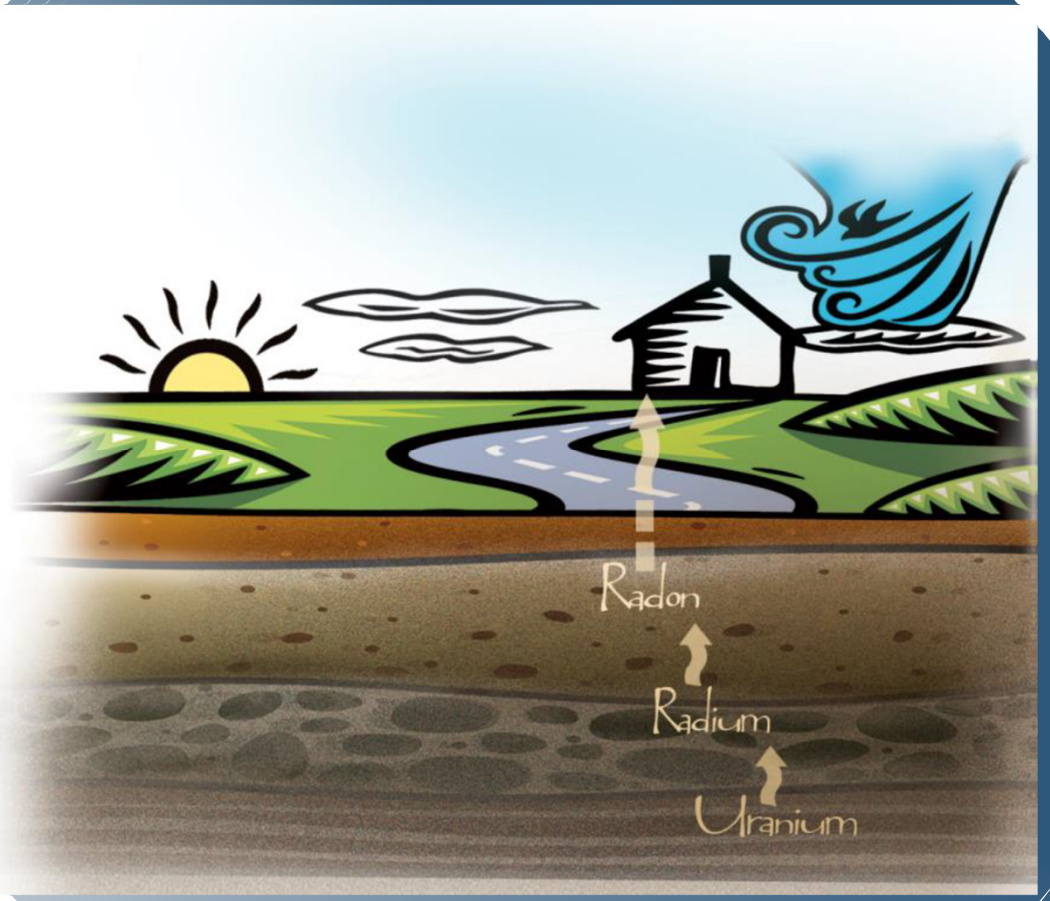
RADON IN MINNESOTA SCHOOLS

AMY SATTERFIELD

OCTOBER 17, 2018

RADON OVERVIEW

- Naturally occurring radioactive gas
- Radon comes from the natural decay of uranium, which is found in soil & rock all over the U.S.
- MN is a “Radon” State



Average Annual Number of Properties Tested	241.1
Average Annual Properties Tested per 10,000	20.7
Properties Tested ≥ 2 pCi/L	1,273 (82.3%)
Properties Tested ≥ 4 pCi/L	988 (63.9%)
95th Percentile Radon Value pCi/L (^)	17.9
Average (Geometric) Radon Value pCi/L	4.4
Average (Arithmetic) Radon Value pCi/L	6.7

BLUE EARTH COUNTY, MN

HEALTH AFFECTS

- Known carcinogen
- 2nd leading cause of lung cancer deaths behind smoking
- Risk of getting lung cancer from radon
  - Level of radon
  - Duration of exposure
  - Other risk factors

EXPOSURE: Children

- **Home is likely most significant source**
- **For most in MN, the second largest source is their school**

SCHOOL RADON TESTING

REQUIRED?

No, but strongly recommended

Most likely will be required via legislation in future

FREQUENCY

Every 5 Years

After Major Renovations

After HVAC Changes

TYPE OF TESTING

All frequently Occupied Room in Contact with the Ground

Short Term Detectors

Long Term Detectors

REPORTING

Report Radon Results to School Board

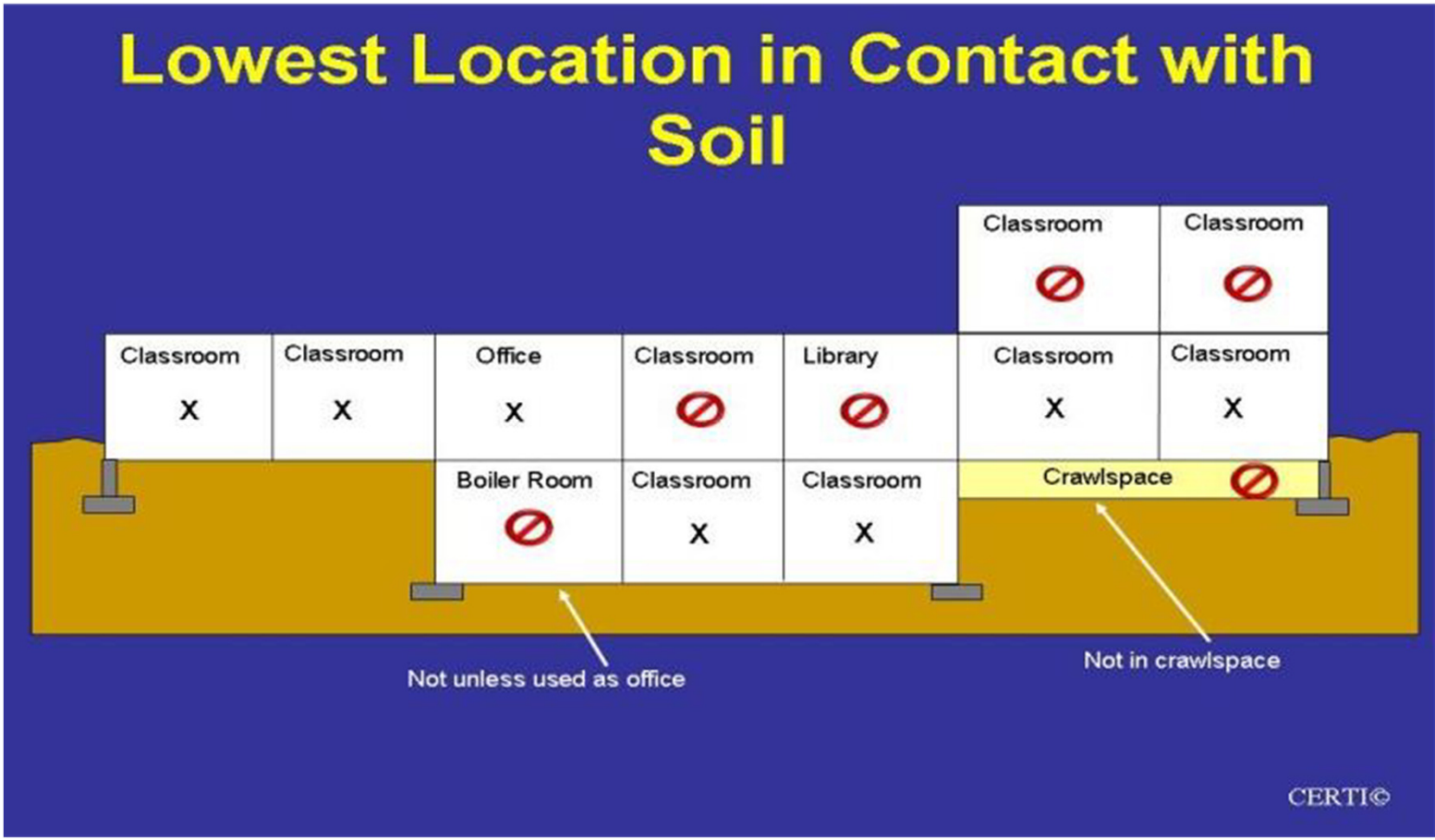
Submit Results to MDH

FUNDING

Per 123B.571 Sub. 4 fundable LTFM

UFARS 349 Hazardous Substance

TESTING


Lowest Location in Contact with Soil
Classroom
Classroom
Classroom
Classroom
Office
Classroom
Library
Classroom
Classroom
X
X
X
X
X
Boiler Room
Classroom
Classroom
Crawlspace
X
X
Not unless used as office
Not in crawlspace
CERTI©

TESTING

If using LTFM, must be conducted per MDH plan

≥4 picocuries per liter (pCi/L) = follow up testing

Elevated rooms must be mitigated

Use certified radon testing devices

Appropriate QA/QC devices included in sampling strategy

LICENSURE

Companies completing radon measurements must:

- Certify each person placing or retrieving radon devices
- Quality Assurance Officer and SOPs
- Quality Assurance Plan that follows AARST MALB 14, “Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings” [Duplicate (10%), blank (5%), and spiked devices (varies)]

***SCHOOLS NOT REQUIRED TO BE LICENSED TO TEST**

RADON CONTACTS

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RADON QUESTIONS?

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Lead
82
Pb
207.2

LEAD IN WATER MINNESOTA SCHOOLS

AMY SATTERFIELD

OCTOBER 17, 2018

LEAD IN WATER OVERVIEW

Lead-based distribution systems used extensively

Historically, lead has been used in plumbing fixtures

64 million housing units effected.

Why was lead used?

- Prevents Corrosion
- Kills mold and mildew
- Easy to shape
- Melts at low temperature
- Elasticity
- Included in pipes, solders, faucets, and valves

LEAD EXPOSURE

Routes of exposure to human beings occurs by ingestion and inhalation

Both adults and children are affected by lead exposure

- Most common source of lead exposure in children is lead paint in older homes
- Home plumbing is concern as well

SCHOOL LEAD IN WATER TESTING

REQUIRED?

Yes, by July 1, 2018

MN Statute 121A.335

(Public & Charter Schools)

FREQUENCY

Every 5 Years

Recommended: after Construction/ Renovations

TYPE OF TESTING

Inventory all potable cold water taps

First Draw Sample ALL taps used for consumption or food prep

REPORTING

Adopt Testing Plan

Create Testing Schedule

Communciate Results to Public

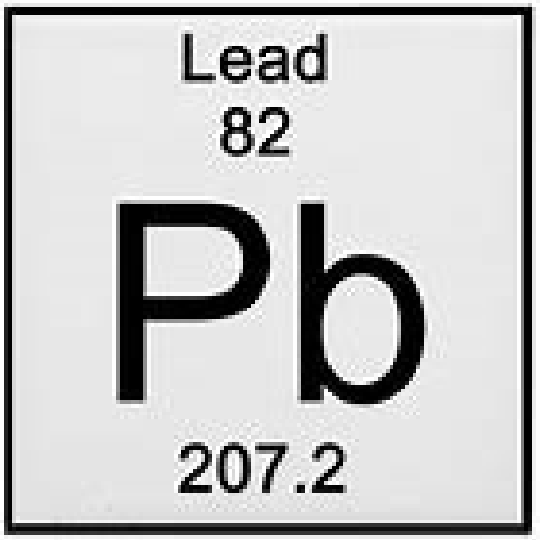
FUNDING

Per 123B.571 Sub. 4 fundable LTFM

UFARS 349 Hazardous Substance

TESTING: Inventory

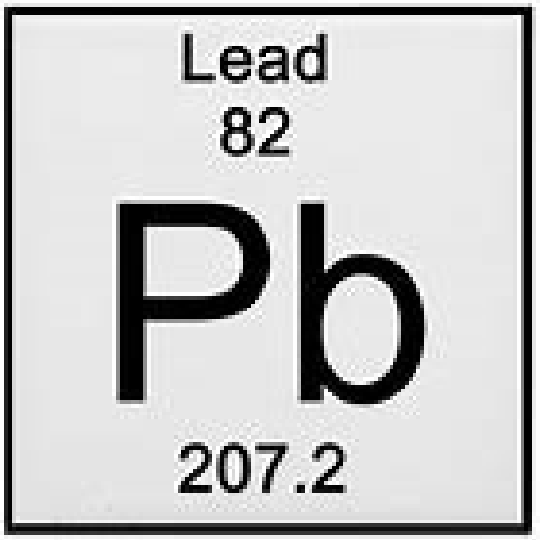
- Sinks and drinking fountains
- Kitchens, staff lounges, elementary school classrooms, FACS classrooms, hallways
- Water coolers and bottle fillers
- Districts are encouraged to label non-potable water fixtures



TESTING: Inventory

Typically <u>NOT</u> tested:

- Restroom sinks
- Science sinks
- Art room sinks
- Custodial closet sources
- Outside water spigots



TESTING: Analysis

Field Analyzer Testing

Or

Accredited Laboratory

TESTING: Testing

- FIRST DRAW SAMPLES
- Normal usage of tap day prior
- No tap use 6-18 hours prior to sampling
- Sample closest to building inlet point
- Collect flushing sampling if part of program

Lead Level At The Tap	Lead Hazard Reduction Options
< 2 ppb or Non-Detected	• Lead was not detected. Tap may be used as normal; • Record result and test again in 5 years; and • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
2 ppb to 20 ppb*	The tap may be used for cooking and drinking water while steps are taken to reduce overall exposure. A higher number of taps with elevated results increases the urgency to implement hazard reduction. Options include: • Retest the sample tap and attempt to more accurately determine the source of the lead; consider monitoring tap more frequently until the source of lead is found and removed; • Consider the feasibility of flushing or other steps to minimize lead exposure, including limiting softened water supplies to hot water taps only, taking into account other actions that the school may already have in place; • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
> 20 ppb*	Action should be taken to reduce exposure. The specific action(s) taken will be dependent on individual school conditions. Options include: • Remove tap from service until problem is demonstrably corrected by replacement, a flushing program, filtration, or treatment; • Do ***not*** use tap for cooking or drinking water; • Retest the tap and attempt to determine the source of the lead; If the tap is not replaced, consider monitoring tap more frequently, such as annually, until the source of lead is found and removed; • Implement a flushing protocol or other lead hazard reduction option; sampling should be use to evaluate effectiveness; • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request; and • Provide targeted communication and education to individuals, parents, and staff members that routinely use that tap.

*established by EPA 3Ts guidance; if EPA amends, Table 3 will be adjusted to be consistent with new value

DEPARTMENT OF HEALTH

Action Level

Determine District Lead Action Level

When Approaching or Elevated:

- Replacement of fixtures
- Removal of fixtures
- Post signs “Not Potable Water Source”
- Investigate if flushing reduces lead levels
- Install NSF certified filter
- Notify staff and public

FLUSHING ALTERNATIVES

As an alternative to repair or replacement

Requires a flushing strategy be determined

Recommended following any two-week vacancy or prior to the beginning of school in the Fall

Communication

PLAN

Create a Plan

Schedule for Testing

School Admin & Board Review Plan

COMMUNICATE RESULTS

Designate Contact

Notify of Results in Reasonable Time

Post on Website But Ensure Non-Internet Can Be Aware

RESOURCES

Statute 121A.335

MDH Lead Website

EPA 3T's Document

EPA Lead & Copper Rule

LEAD IN WATER CONTACTS

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