

Lead Poisoning Hazard Investigation





- Lead is a very soft, bluish-white metal
- It is very resistant to corrosion upon exposure to air
- When mixed with paint, they taste...



but really...

....it taste "just like chicken"

Purpose Of Environmental Investigation

- Identify Hazards



- Discuss Interim Controls

- Education Opportunity



When
Do
We
Investigate?



- 
- A hand holding a lit matchstick is positioned diagonally across the frame. The matchstick is lit, with a bright yellow flame at the tip. The background is a solid red color. The text is overlaid on the left side of the image.
- Confirmed Cases
 - Elevated Cases
 - Reasonable Suspicion
 - all defined/explained in rules

Investigation Team (pbi)

Public Health Nurse



Local EHS



Regional EHS





**so deadly, yet
so delicious!**

Forms...we got 'em

Refer to Manual



Questions

Questions

Questions

Education

Education

Education

• Pap

Introduction and Explanation

- Who are we, why are we there and what are we going to do...

Parent Interview

(education and questions)

- Correct name, address, date of birth
- What does child do, where does he go, where does she play, what does he put in his mouth, where does she sleep, what does he eat, etc.

Parent interview (continued)



-What other activities occur in and around the house...

-Fire place

-Cooking utensils

-Hunting and fishing supplies

-Other hobbies

-Any remodeling

-Use creative questioning

-2 months better than one



Regularly Visited Places and Supplemental Housing

- Schools, Child Care Centers, Neighbors, Relatives, etc.
- Previous Housing, Relatives...
- must refer to definition in rules

How Does Lead Enter The Body?



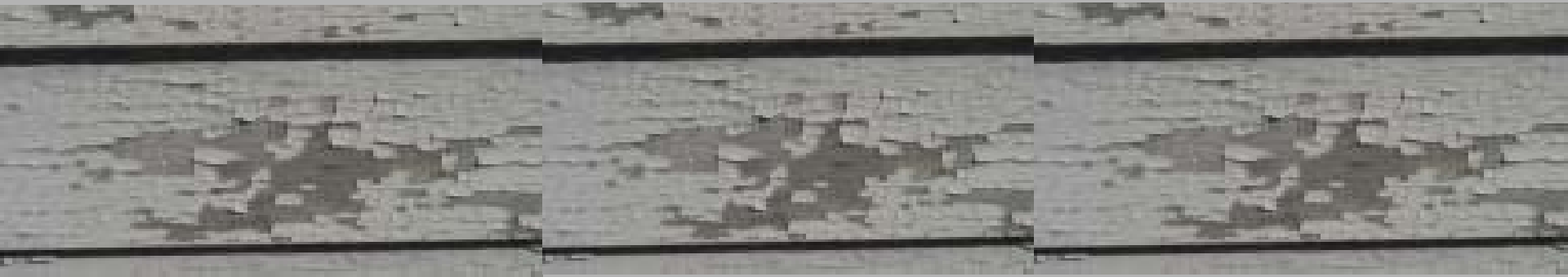


We are generally not concerned with paint in "good condition".....or "intact" surfaces



Our Concern Is Deteriorated Paint

Flaking, Peeling, Chipping, Loose,
Paint



Friction Surfaces & Impact Surfaces



A photograph of a building undergoing renovation. The structure is partially covered in green safety netting and scaffolding. The visible parts of the building show stone masonry and arched windows. The sky is overcast.

Readily Accessible Substances

Include deteriorated paint that is peeling, chipping, cracking, flaking, or blistering to the extent that the paint has separated from the substrate.

Readily Accessible Substances (continued)

Soil.....water, water
toys, bathtubs & lavatories.....

.....doors, door jambs, stairs, stair rails,
windows, interior window sills, vinyl
mini-blinds, baseboards, and
paint that is chalking.

How Do We Know If Lead Is In Stuff?







Blood Lead Level of 12 Ug/dL

But How Do We *Really* Know If
Lead Is In Stuff?

Identification of lead poisoning
hazards must be based on

quantitative analysis

Quantitative Analysis

X-Ray Fluorescence
Analyzer (XRF)

and

Laboratory Analysis

X-Ray Fluorescence Analyzer (XRF)

The primary method for providing *quantitative analysis* of lead poisoning hazards is the XRF analyzer

Gives quick in-field results

XRF (continued)

The most cost effective method of screening a large number of sites

Lead content is expressed in milligrams per square centimeter (mg/cm^2)

1.0 mg/cm^2 or greater is considered a lead poisoning hazard





Work



Work

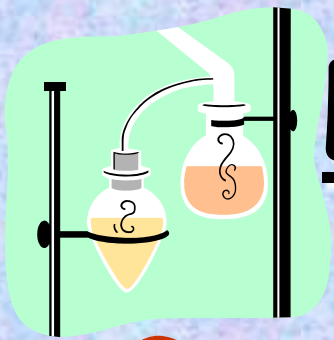


Work

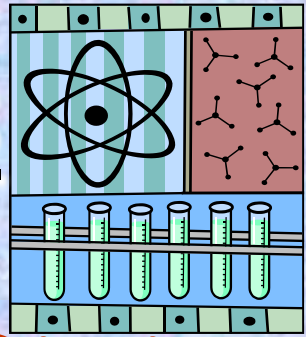




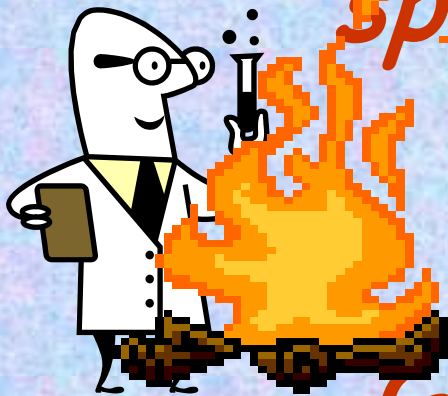
Not Quantitative



Laboratory Analysis



- Samples submitted to the State Laboratory of Public Health.
- Chemical concentration of lead determined by atomic absorption spectroscopy (AAS).



(quantitative analysis)



Paint Sampling

- Only collected from *readily accessible* locations
- Collected from surfaces not accessible to the XRF
- Collected from surfaces with inconclusive XRF readings
- At least one “positive” tested XRF surface for validity surfaces

Paint Sampling (continued)

- Any paint suspected as a source of exposure to children
- Lead content reported as percent by weight
- 0.5 per cent or greater is considered a lead poisoning hazard.



Soil Sampling



- Children playing in bare soil areas are of most concern due to hand to mouth exposure
- Highest lead contents are generally found near the house foundation
- Battery, auto salvages operations or paint stripping locations
- Wood heaters or burn piles

Soil Sampling (continued)

- Sandboxes, playgrounds....



- Results are reported in parts per million (ppm)

- A lead concentration of 400 ppm or greater is considered a poisoning hazard





Dust Sampling

- Dust hazards occur as lead based paint deteriorates, breaks down or is disturbed



- Floors, window sills and mini-blinds are usual suspects

- Other items/areas sampled based on information gained during the visit

Dust (continued)

- Hobbies may indicate the need to sample related items
- If parent's occupation is suspected, may sample clothes, shoes, change area or car
- Dust sampling is required after remediation



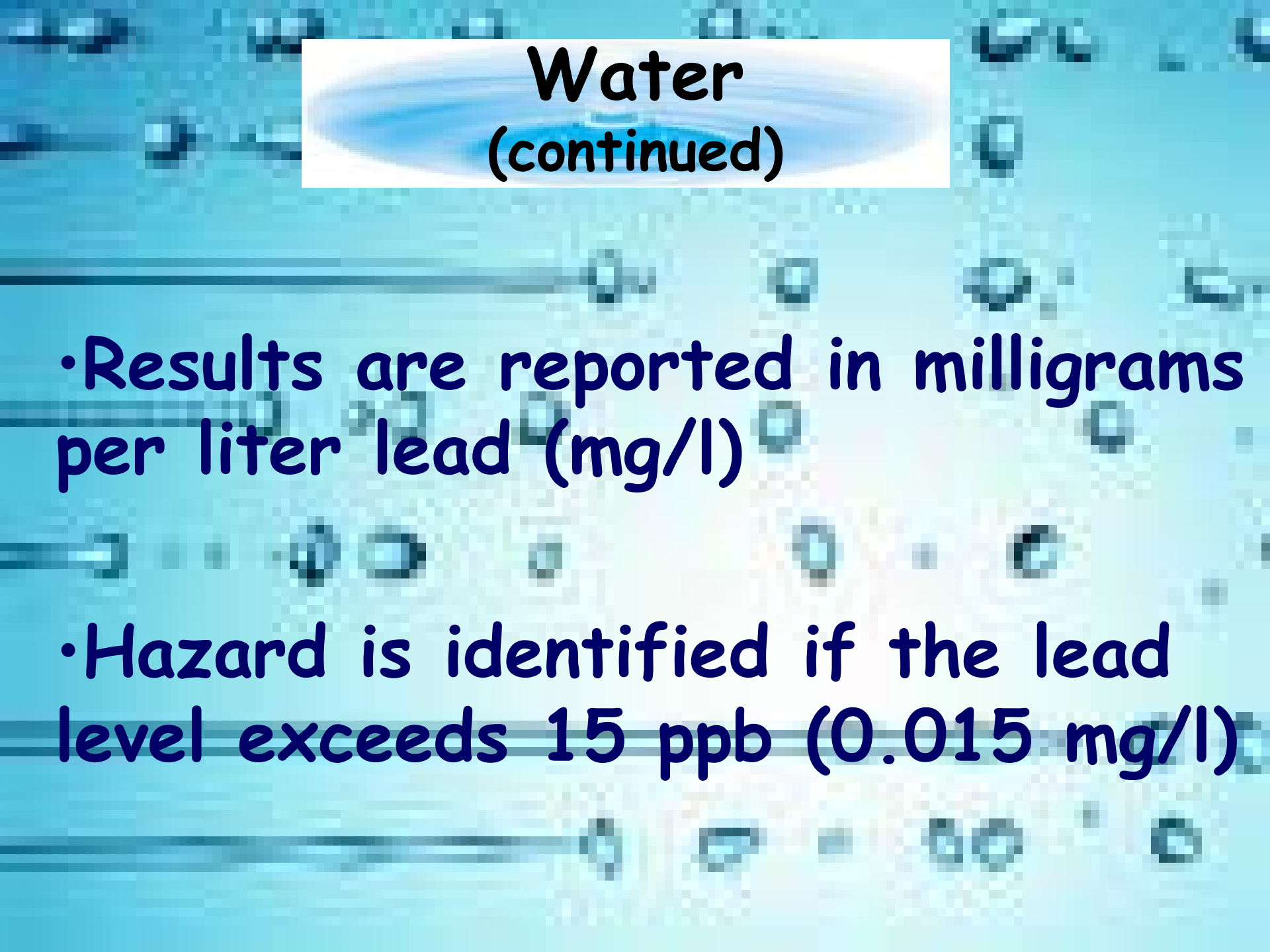
Dust

(continued)

- Results are reported in micrograms (ug) of lead
- Lead poisoning hazard standards and clearance levels for dust:
 - Floors: 40 ug/ft²
 - Window sills: 250 ug/ft²
 - Window troughs 400 ug/ft²
(clearance only)

Water Sampling

- Usually contaminated by lead leaching from pipes or lead soldered joints
- Sample when no other potential sources of lead exposure can be found
- “First draw” samples are most desirable.....

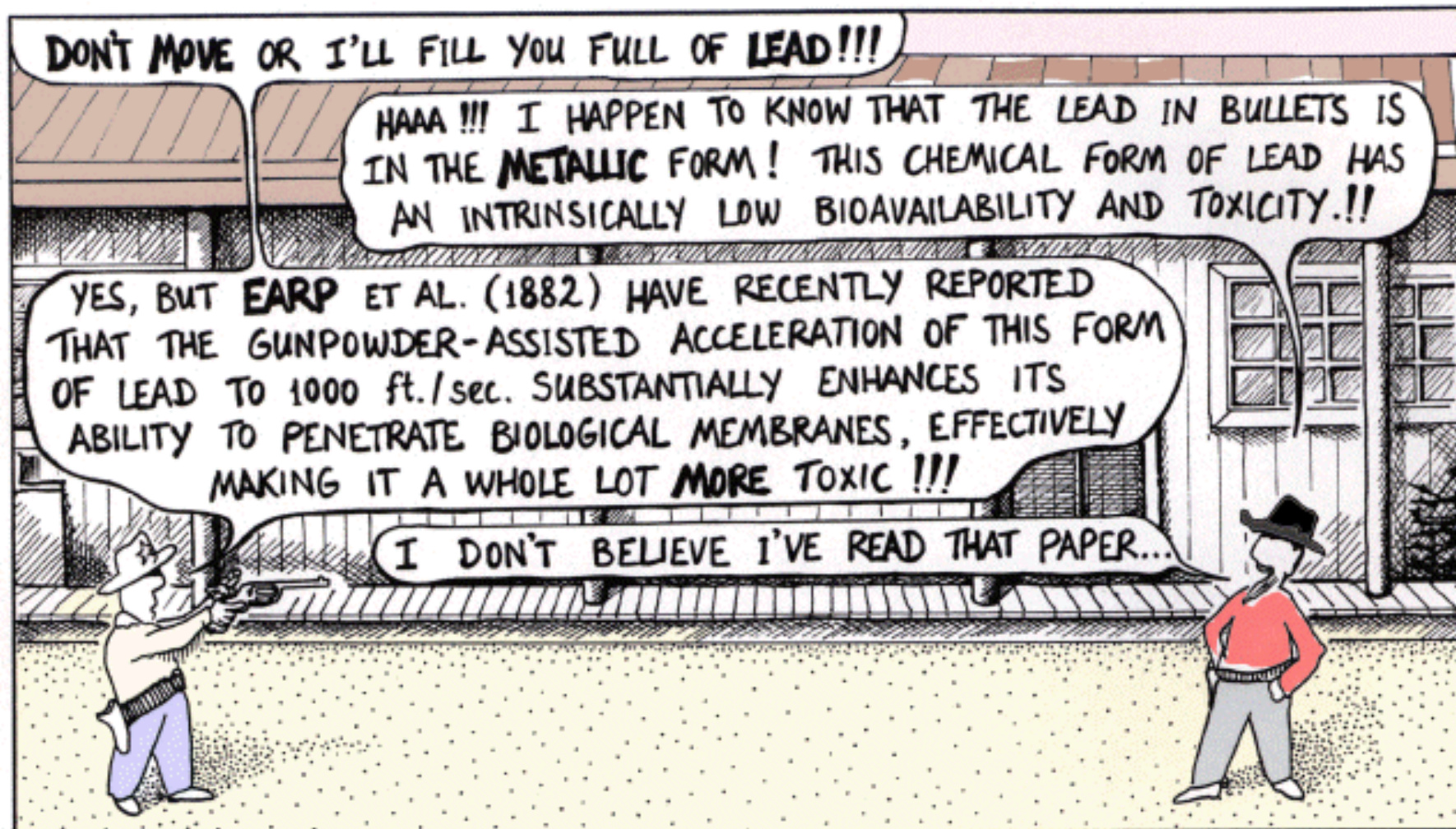


Water (continued)

- Results are reported in milligrams per liter lead (mg/l)
- Hazard is identified if the lead level exceeds 15 ppb (0.015 mg/l)







ENVIRONMENTAL SCIENTISTS IN THE WILD WEST

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<http://strangematter.sci.waikato.ac.nz/>

Where is the lead?



Paint

Dust

Soil

Water

Lurking In Other Places Too...

Applied Engineering and Development Laboratory

Niton Corporation

The XL-309 provides fast, accurate lead-based-paint screening. It is ideal for HUD and OSHA--regulated testing with 95%--confident result displayed as soon as result is achieved. It includes a user option to continue readings for greater precision.

Lead Foot May Lead To Light Wallet

90 Percent of Drivers Surveyed Admit to Speeding; Tickets Can Increase Auto Insurance Rates By As Much As 25 Percent Or More

MAYFIELD VILLAGE, Ohio — March 1, 2004 — Usually it's because they have a long way to go and a short time to get there. Sometimes they do it because they're late for work. Or maybe they know Officer Friendly is nowhere in sight. **Lead foot** drivers typically have an excuse, but when the long arm of the law catches up to them, **lead footers** pay for their haste when it's time to buy or renew their auto insurance.

PROGRESSIVE®



Testing for

Lead in Dust Lead in Soil

Lead in Paint

Many folks may want to have Paint, Dust or Soil samples tested for lead for lead contamination, only to find that

- Local Government Agencies no longer perform the tests.
 - Laboratories are not interested in small customers.
 - Costs are exorbitant.
- Sample turn around times are at a snail's pace.

even if you can find a laboratory to do the sample analysis

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Questions.....Questions.....Questions

During
lead u

dust

invest
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soil

n process
ther items

water





ur files are attached and ready to send with this message.



Lead-based paint chips can be easily ingested by children

**Chipped paint can cause lead
contamination of soil.**







RFI spectrum analyzer



Designed as a "point and shoot" analyzers that can produce results virtually anywhere.

