

Lead Sampling & Analysis

Phil Peters, CIH
DOSH IH Lab Director



Washington State Department of
Labor & Industries

Air Sampling

- Personal breathing zone samples
 - Battery operated air pump
 - Filter MCE or PVC

Surface Sampling

- Media
 - Ghost Wipes
 - Baby Wipes
 - Vacuum - Filter
- Location
 - Lunch/break rooms
 - Restrooms
 - Offices
 - Change Rooms

Material Sampling

- Ammunition Cartridges
 - Bullets, Casing, Powder and Primer
- Water
- Soil
- Vegetation

L&I 0009 Elements

- 1.5 ug Pb- Current Quantitation Limit (QL)
- 12.5 ug/M³ in a 120 L air sample
- Target QL is $\frac{1}{4}$ of the PEL = 2.5ug/M³
- $2.5 \times 0.12 \text{ M}^3 = 0.3 \text{ ug/sample}$
- $0.3 \text{ ug}/50 \text{ ml} = 0.006 \text{ ug/L} = 6 \text{ ppb}$
- Range ICPMS - 2- 4000 ppb
- Problem

Problem

- Background
- Filter media has low levels of Pb
- Currently we cannot measure Pb at 6 ppb

Solutions

- Increase sample volume by higher flow rate to 3 lpm for longer minimum sampling time(240 min)
- New minimum volume = 720 L, a six fold increase
- Change filter media with low BG Pb.
- But

Solutions

- The media has high levels of Chromium and other metals, not Lead
- Much ado about nothing
- We will be changing our Pb method so the method range will include samples at 10ug/M3

Questions

- Contact Info
 - Phil Peters
 - Email: petp235@lni.wa.gov
 - Phone 360-902-5171