

ATTACHMENT 12 - AURORA TREE SIGNATURES FEBRUARY 2007

●Question

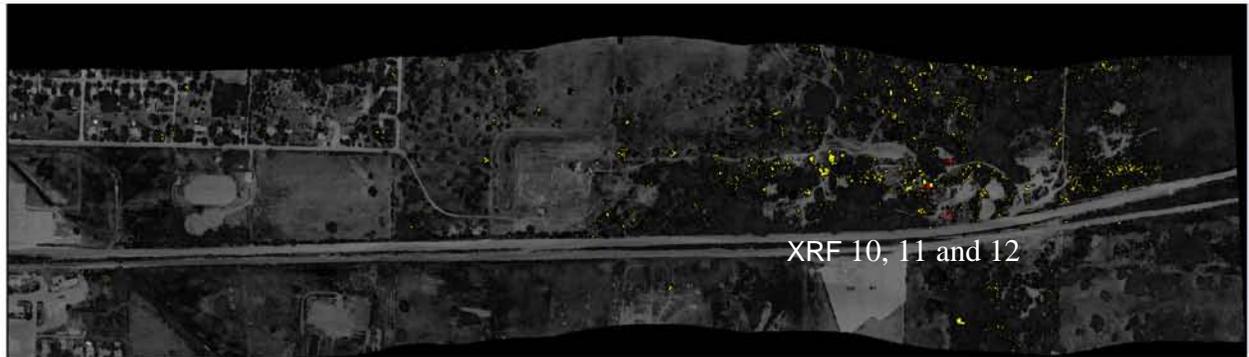
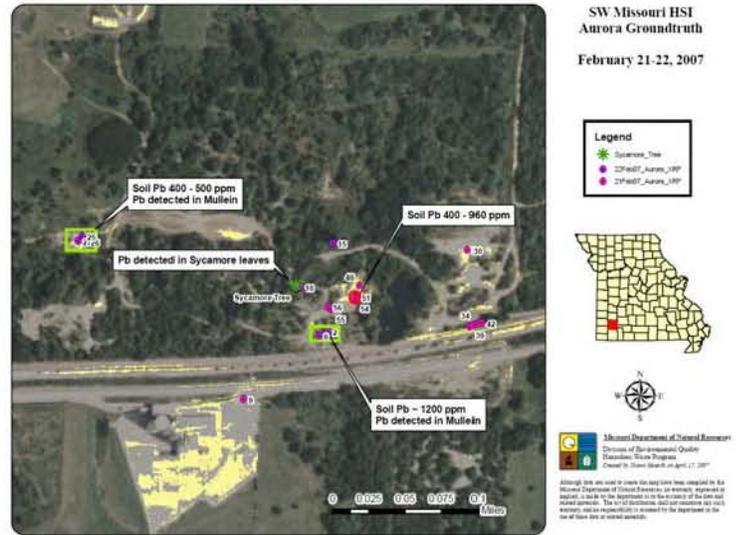
- Does vegetation uptake contamination or collect contamination dust?
- Does contaminated vegetation have a distinguishable signature?

●Analytical Approach

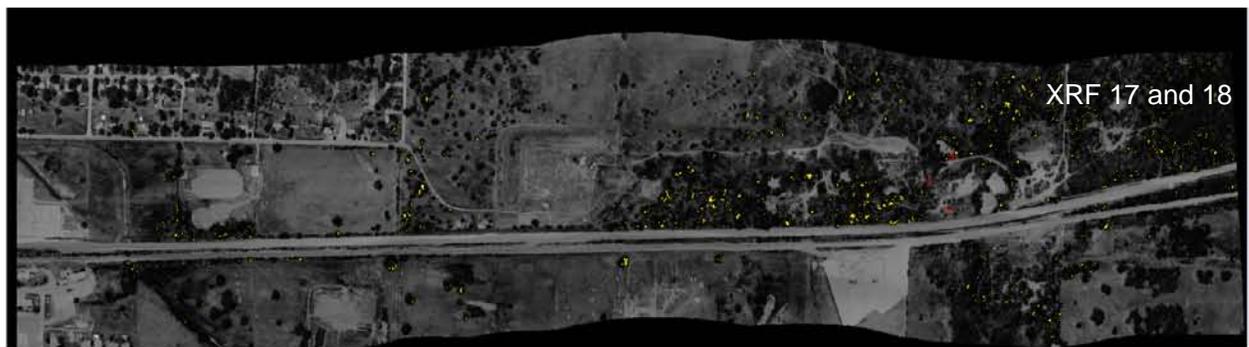
- Screen leaves with XRF.
- Plot contaminated trees and plants and use signatures from the known trees to identify other contaminated trees.

●Conclusion

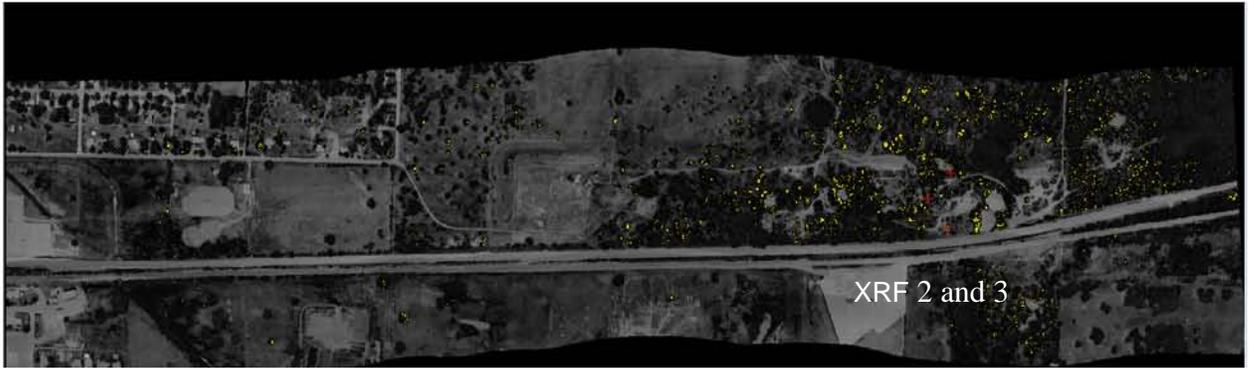
- Sycamore, Oak and Mullein in contaminated area showed varying levels of lead and zinc. XRF was not configured to determine if contamination was on or in leaves.
- HSI appears to identify tree species, but field survey indicated that the identification was not consistent.
- There was not sufficient data to determine if there was a different signature for a contaminated and non-contaminated tree of the same species.



Spectral Signature Taken From XRF Reading 10, 11 and 12 - Sycamore Tree - Spectral Angle Mapper Classification



Spectral Signature Taken From XRF Reading 17 and 18 - Red Oak - Spectral Angle Mapper Classification



**Spectral Signature Taken From XRF Reading 2 and 3 - Mullein Plants - Spectral Angle Mapper Classification**