Soil Environmental Chemistry Group

Research

- Risk-based environmental chemistry of organic and inorganic soil pollutants
- Soil chemical contaminant speciation
- Human and ecological *in vitro* bioaccessibility assays
- Bioavailability-based contaminant remediation
- Beneficial reuse of industrial and municipal byproducts

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Soil, Water, and Environmental Lab (SWEL) is a service lab in the School of Environment and Natural Resources at The Ohio State University

- Contracts with universities, industry, and government
- Research-quality data produced by professional staff from several labs specializing in water quality and soil health, contaminants, and biology.
- Comprehensive assessment of human and ecological contaminant exposure

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Outreach

- **Damaged soil Investigation, Restoration, and Treatment** (DIRT.osu.edu) provides testing information, treatment options, and soil lead education
- Offers low-cost soil heavy metal screening, testing interpretation, and workshops
- Students help assess vacant urban lots for remediation through City of Columbus partnership

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Soil Testing: SWEL.OSU.EDU
Urban Soil Education: DIRT.OSU.EDU
Restoring Urban Soils to Restore Communities
Investing in cities with low-cost soil testing and treatment

In the U.S
Vacant land results from population declines in cities
21% of land in Midwest cities is vacant
Reutilizing vacant land reduces problems like crime & food insecurity
Vacant lots need to be tested and treated for contaminants to protect public health

Reusing Vacant Land While Protecting Human Health

Lead in Cleveland Community Garden Soils
Although most vacant lots have little or no contamination, public fears can prevent lot reuse. Low-cost testing can increase reuse of sites with little or no contamination. Treatments like phosphorus fertilization, dilution, and capping protect public health on moderately contaminated sites, reuse locally-available materials, and reduce costs of traditional remove and replace remediation.

SUMMARY
Reusing vacant urban lots for food production, green space, and wildlife habitat brings humans and wildlife into contact with potentially-contaminated soil. Soil testing, inexpensive remediation practices, and education are needed to protect human and ecological health when revitalizing vacant urban lots.

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