Charge Questions – SHC BOSC Topic 1

1. SHC expanded its research on *mining-related contamination* in response to OLEM and Regional priorities, with a focus on mining-influenced waters. This has been given added priority by the inauguration of OLEM's new Office of Mountains, Deserts, and Plains that focuses on remediation of mining sites across the western United States. What recommendations does the BOSC SC have on this research to improve ORD's development of innovative approaches for the remediation of mine wastes, mining-influenced waters, and mine-wastewater source-control? What recommendations do you have for ORD to enhance transfer of innovative technologies for field-ready application?

2. SHC expanded its research on *Leaking Underground Storage Tanks* in response to OLEM and Regional priorities, adding spatial analysis and vulnerability assessment for nearby drinking water sources and augmenting technical assistance efforts. Are ORD's research approaches appropriately implemented to produce usable vulnerability assessments to protect groundwater and innovative technologies to prevent and clean-up leaking UST sites? What recommendations can the BOSC Subcommittee offer to facilitate usability of ORD's research on LUST by the EPA and state- or tribal-delegated programs?

3. SHC expanded its research on *solvent vapor intrusion* in response to OLEM and Regional priorities, adding: assessment and mitigation in multicompartment buildings; sampling methods and modeling of sub-slab gas flux; and collecting data and modeling temporal and spatial variability in indoor vapor concentrations under different geographical and geological settings. What recommendations do you have on the approach, structure, and components of this research to increase confidence in, and to facilitate use of, vapor intrusion measurements and models in site mitigation and Agency decision making?

4. SHC expanded its research on *lead exposure and mitigation* in response to the Agency priorities, OLEM, Regional, and state needs, and as part of the cross-federal agency Federal Action Plan to Reduce Childhood Lead Exposure and Associated Health Impacts[1]. SHC's efforts include innovative methods to identify locations of high lead exposure and the key drivers of exposure, evaluate the bioavailability of lead in ingested soil and dust, and efforts to reduce the cost of remediation of soil lead. (SHC research is coordinated with research in HERA and SSWR to address additional lead mitigation issues). What recommendations does the BOSC SC have on the approach, structure, and components of this research to increase confidence in and to facilitate use of science-based methods to identify: locations of high potential lead exposure, remaining sources of lead exposure in the environment, methods to quantify risk from ingestion of lead-containing soil and dust, and methods to remediate lead in soil?

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[1] https://www.epa.gov/lead/federal-action-plan-reduce-childhood-lead-exposure

Focus Areas and Outputs for BOSC Review

Focus Area	Research Area	Output Number	Output
Mining-Related Contamination	2	4	In Situ Treatment for Mining-Influenced Waters
		5	Innovative Technologies to Eliminate or Control Mining Wastes as Sources of Water Contamination
Solvent Vapor Intrusion	3	1	Characterize Vapor Intrusion in Large Multi-Compartment Buildings
		2	Field Testing and Data to Update Guidance on Subslab Sampling of Soil Gas
		3	Data and Models of Temporal and Spatial Variability in Vapor Intrusion
Leaking Underground Storage Tanks	4	1	Models, Metrics, and Spatial Tools to Evaluate Ground Water Vulnerability
		2	Updates to Technical Manuals and Evaluations of Risks to UST Systems Due to Compatibility with Fuel Formulations
Lead (Pb)	2 & 5	1	Methods, Tools, and Guidance on Remediation Options • Assessing the ability of soil amending agents as a remediation method over the short and long term • Assessment tools for heavy metal (Pb, As) bioavailability in sediments and soils
		2	Methods and Approaches to Improve Characterization of Heterogeneous Contaminant Sites • Pb Isotopes as a Tool for Source Apportionment
		1	Collaborative Science-Based Approaches and Results to Identify High Lead (Pb) Exposure Locations in the U.S. and Key Drivers at those Locations
		2	Methods and Data on Key Drivers of Blood Lead Levels in Children