

EMERGING CONTAMINANTS & CLEAN-UP CHALLENGES

MECC REMEDIATION WORKSHOP
2024

BURNS  MCDONNELL.

Agenda

- 1** Panelist Introductions
- 2** Missouri DNR Program Updates
- 3** Lead Remediation – Industry Perspective
- 4** Q&A

Panelists



**Chris
Cady PhD**
MDNR



Jared Geissler
PE, MBA, PMP, CHMM
Terracon



**Chris
Neville**

The Doe Run Company



**Emily
Pulcher PE**

Burns & McDonnell



**Chris
Redington**

WSP

Part-Way to PFAS

Chris Cady, PhD

Brownfields/Voluntary Cleanup Section

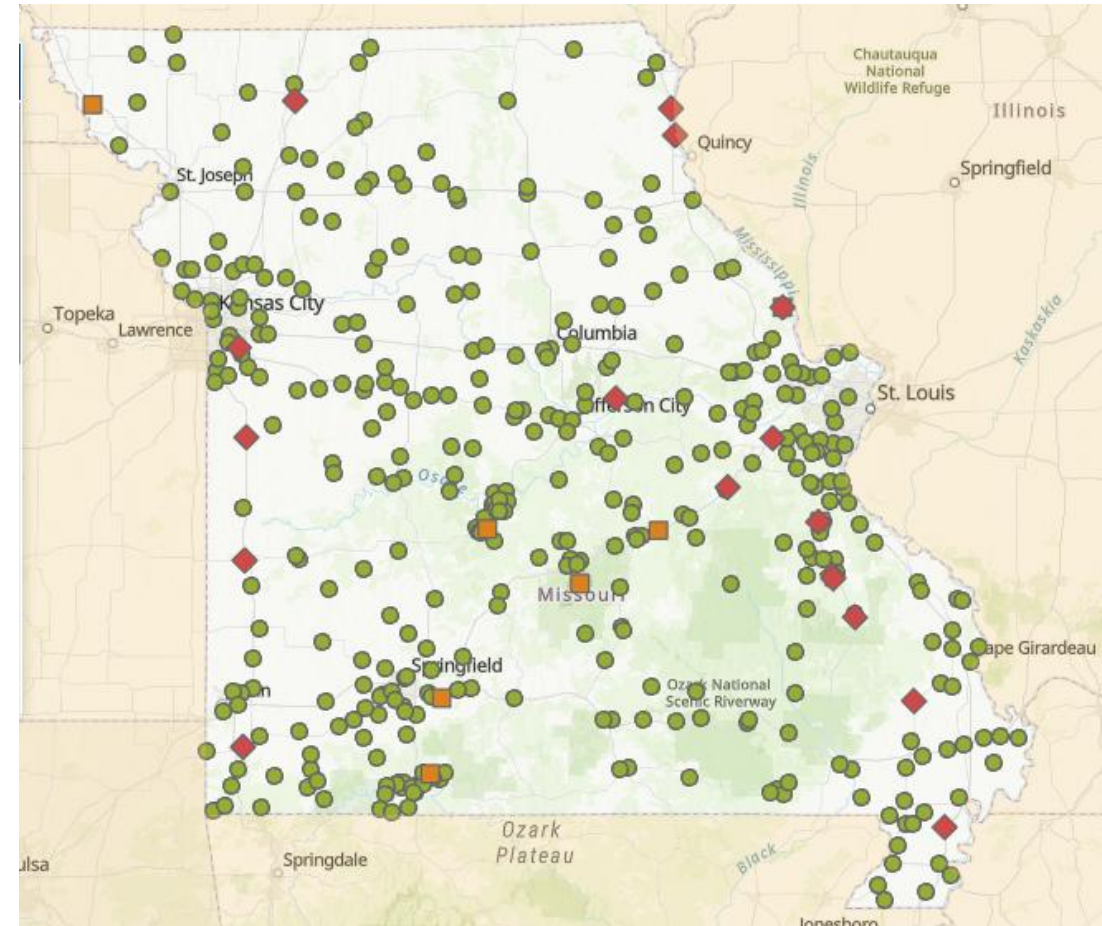
Midwest Environmental Compliance Conference

September 2024

Overland Park KS

What's Happening in MO: Drinking Water Program

- MoDNR sampling & monitoring of public water supplies since 2013 (UCMR + other programs)
- Systems sampled to date serve >75% of population
- PFAS Dashboard:
<https://dnr.mo.gov/contaminant-spotlight/perfluoroalkyl-polyfluoroalkyl-substances-pfas>
- PFAS Viewer Tool →



What's Happening in MO: Water Protection Program

- 2022: Began voluntary PFAS sampling program for facilities renewing permits
- Purpose: acquire data for use when regulatory standards come along
- Challenges
 - So many PFAS
 - Treatability
 - Waste disposal
 - \$\$\$\$

Achieve Regulatory Compliance

Plan to meet or exceed Clean Water Act regulatory requirements over the next 20 years.

Wastewater Treatment Regulation Compliance

- Phosphorous removal limits - \$16.5 million
- More stringent Ammonia limits - unknown million \$
- E-coli limits on effluent - \$40 million
- PFAS compliance - unknown million \$

Study cost benefit of significant maintenance and rehabilitation of the constructed v

KOMU 8 News, Aug 21 2024

Superfund

Brownfields

**Cleanup
Programs**

RCRA

**Federal
Facilities**

Tanks

Superfund

- Haz Substance listings PFOA, PFOS
- MCLs for 6 PFAS
- Regional Screening Levels
- EPA is lead agency on MO sites
- No known PFAS sites under SPF yet
- MoDNR's 5-Yr Reviews will include PFAS recommendations



Federal Facilities

- Mostly DOD and DOE sites
- Handled under CERCLA
- New DOD Memo 9/3
- MO home to various DOD and DOE sites
- 2 NPL sites in MO have PFAS
- More to be investigated

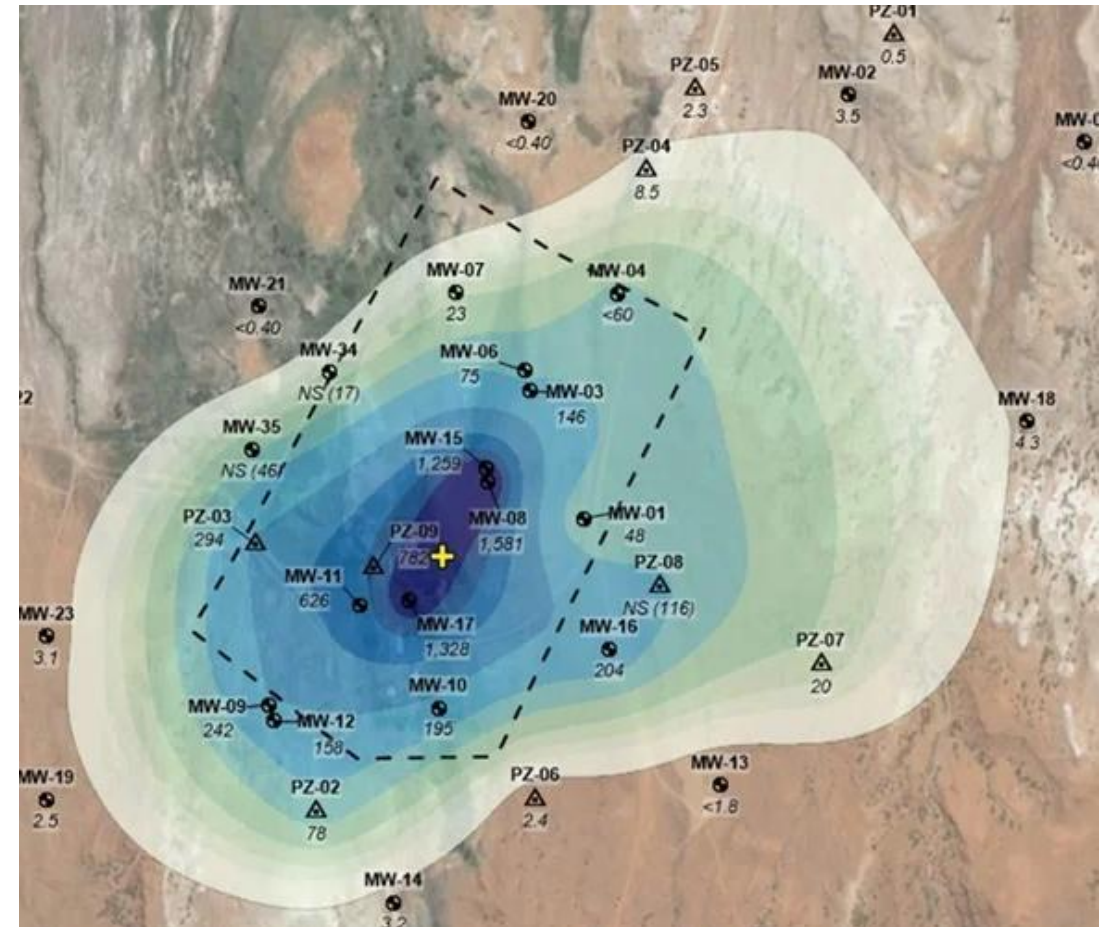


Brownfields/Voluntary Cleanup Program

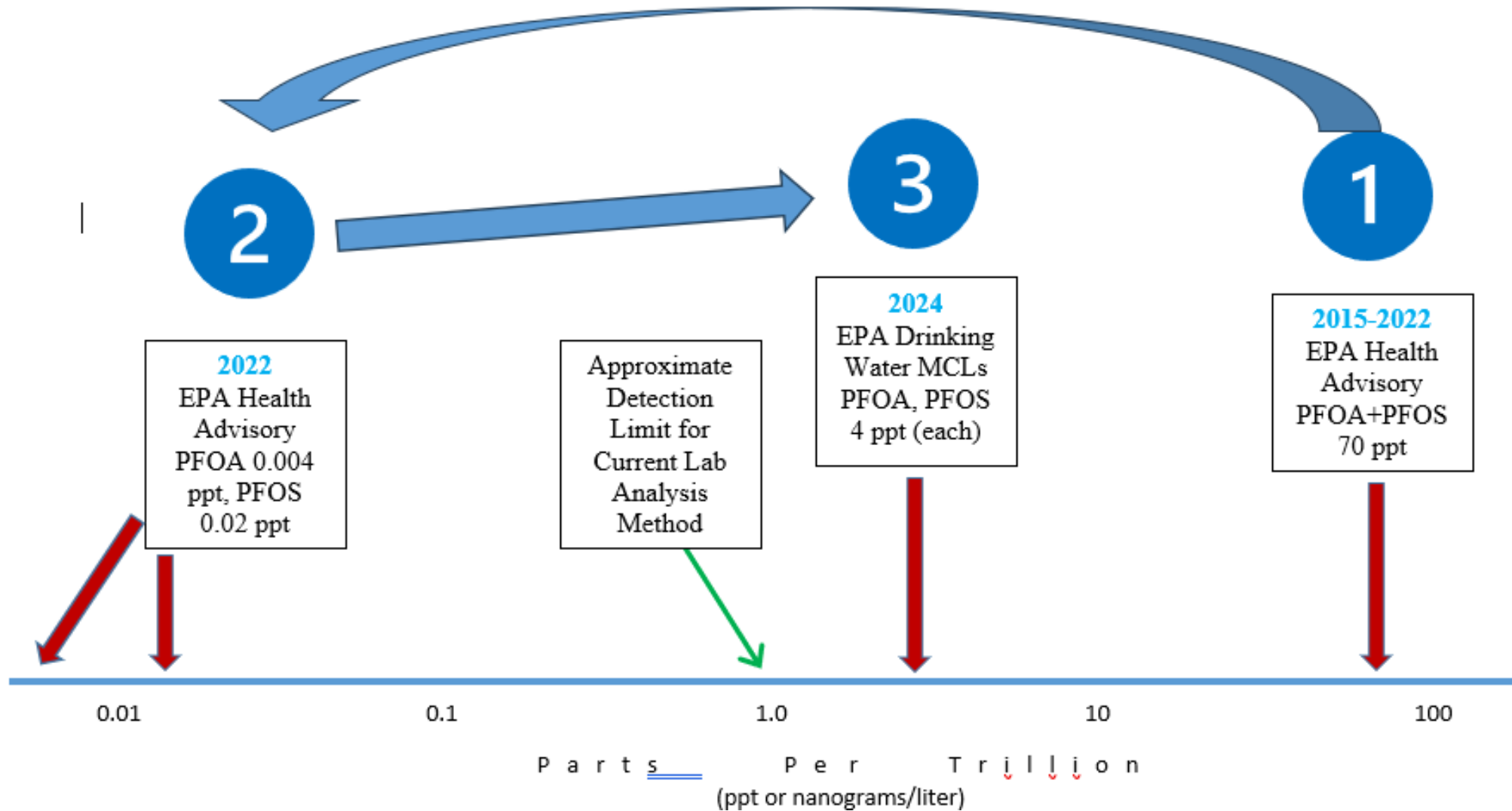
- 3 Active PFAS Sites: 2 Plating, 1 AFFF
- 2 Active plating sites that have not looked for PFAS (yet)
- 5 Closed plating sites (not tested)
- No other sites with PFAS as a COC at present
- List of possible PFAS sources is huge; which sites should require sampling?
- Likely candidates?
 - Dry Cleaners – FL study
 - Wherever consumer products end up: Landfills, Dumps, POTWs, Wastewater Lagoons

About Those Current Sites: Activities & Issues

- All enrolled in BVCP prior to 2024
- Significant levels in groundwater
- Offsite migration: at least 1 site
- Private wells affected: 1 site
- All 3 in 3d party litigation
- Background/Other Sources?!
- None have reached remedy stage for PFAS



Evolution of Drinking Water HAs and MCLs



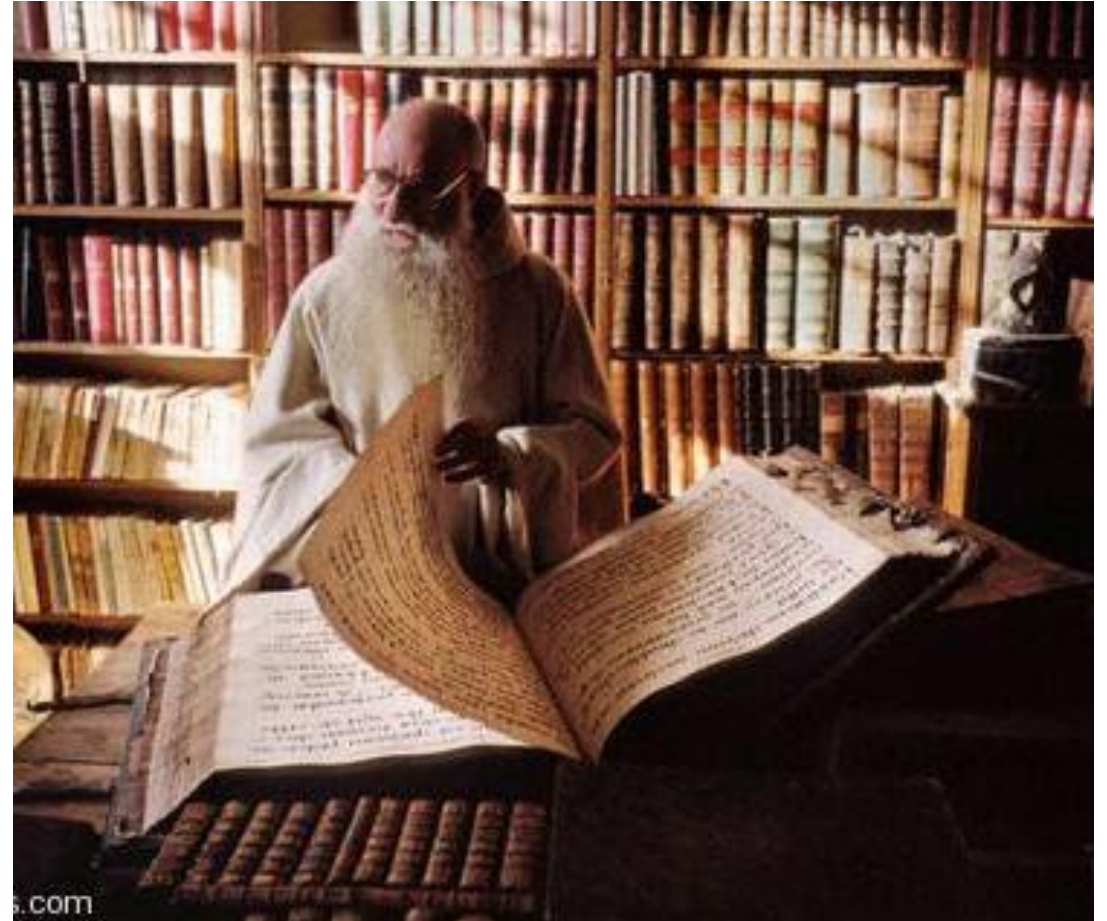
Remediation Challenges: PFAS checks all the boxes!

- Ubiquitous Contaminants
- Highly Mobile
- Non-biodegradable
- Specialized Sampling Requirements
- Expensive Lab Analysis, Wait Times
- Most Traditional Remediation Methods Don't Work
- Endpoint Has Been A Moving Target
- AWWA and ACC/NAM both suing EPA re: MCLs
→ uncertainty
- Tip of the Iceberg?
- Time for Another Feat of American Ingenuity!



MRBCA Revision

- Imminent Release for Public Comment
- Tier 1 RBTL tables will now look much like EPA RSL table
- 29 PFASs included
- Pb in Soil will change
 - Residential surface soil: 260 mg/kg → 200 mg/kg
 - Non-Residential: Unchanged @ 660 mg/kg
 - Constr. Worker soil: 660 mg/kg → 315 mg/kg



Contact

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Environmental Remediation Program

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BVCP web page: missouribrownfields.com

MRBCA Revision

Web Page: missouribrownfields.com, Resources tab

Email: MRBCA@dnr.mo.gov

Stewardship. Integrity. Commitment.

THE
DOE RUN
COMPANY

160
YEARS

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COMPANY

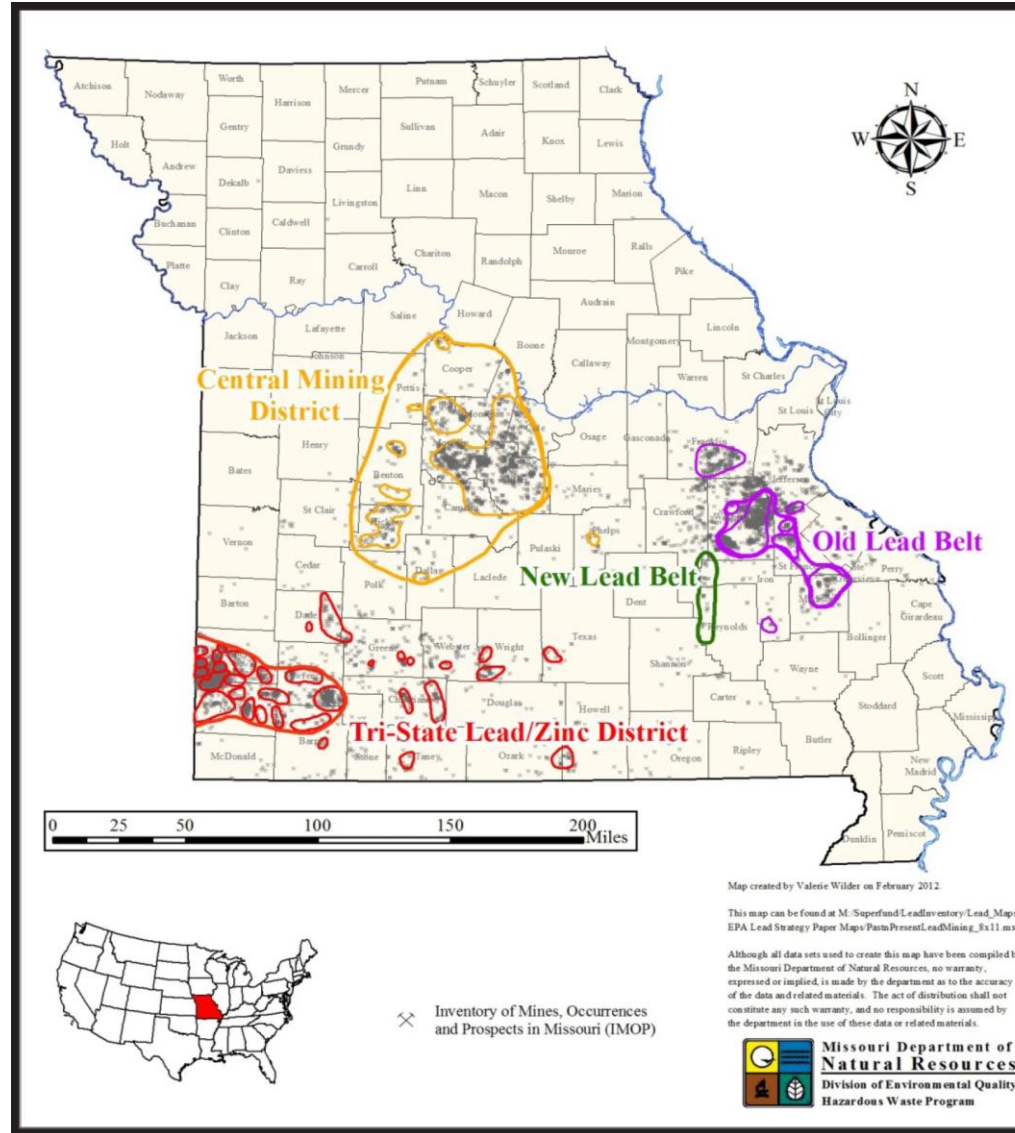
Lead (Pb) Remediation Issues

Chris Neaville
Asset Development Director

Midwest Environmental Compliance Conference
September 23, 2024



Lead (Pb) Mining Districts - Missouri



Lead Remediation “Key Points”

- >\$500M spent on lead remediation in the region by PRPs and EPA of historic mine NPL Superfund sites and surrounding residential areas in Missouri and Tri-State (Kansas, Oklahoma)
- In January 2024 EPA lowered the recommended screening level for lead in residential soil from 400 parts per million (ppm) to 200 ppm
- How will this be implemented in EPA Region 7?
 - Could have significant financial impact in this region due to historic lead mining and naturally occurring mineralization

Herculaneum Lead Smelter - Before



Herculaneum Lead Smelter - Before



Herculaneum “Post-Smelter” – Looking Northeast



Phase 1 Remediation - Port Development



Railcar Loading from Port



Port Expansion – 2nd Dock



Bulk Storage Building



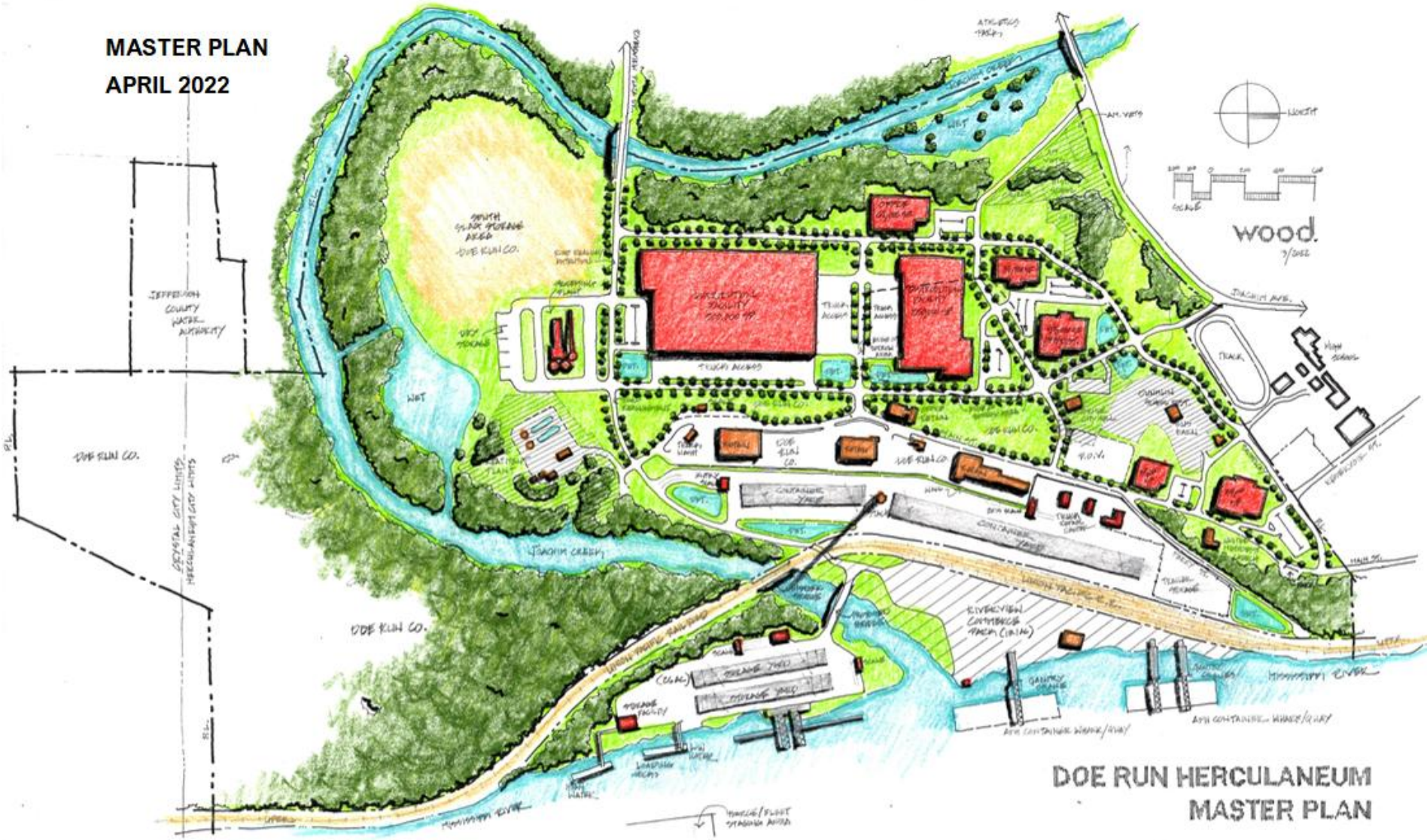
Barge Loading



Rail Loading

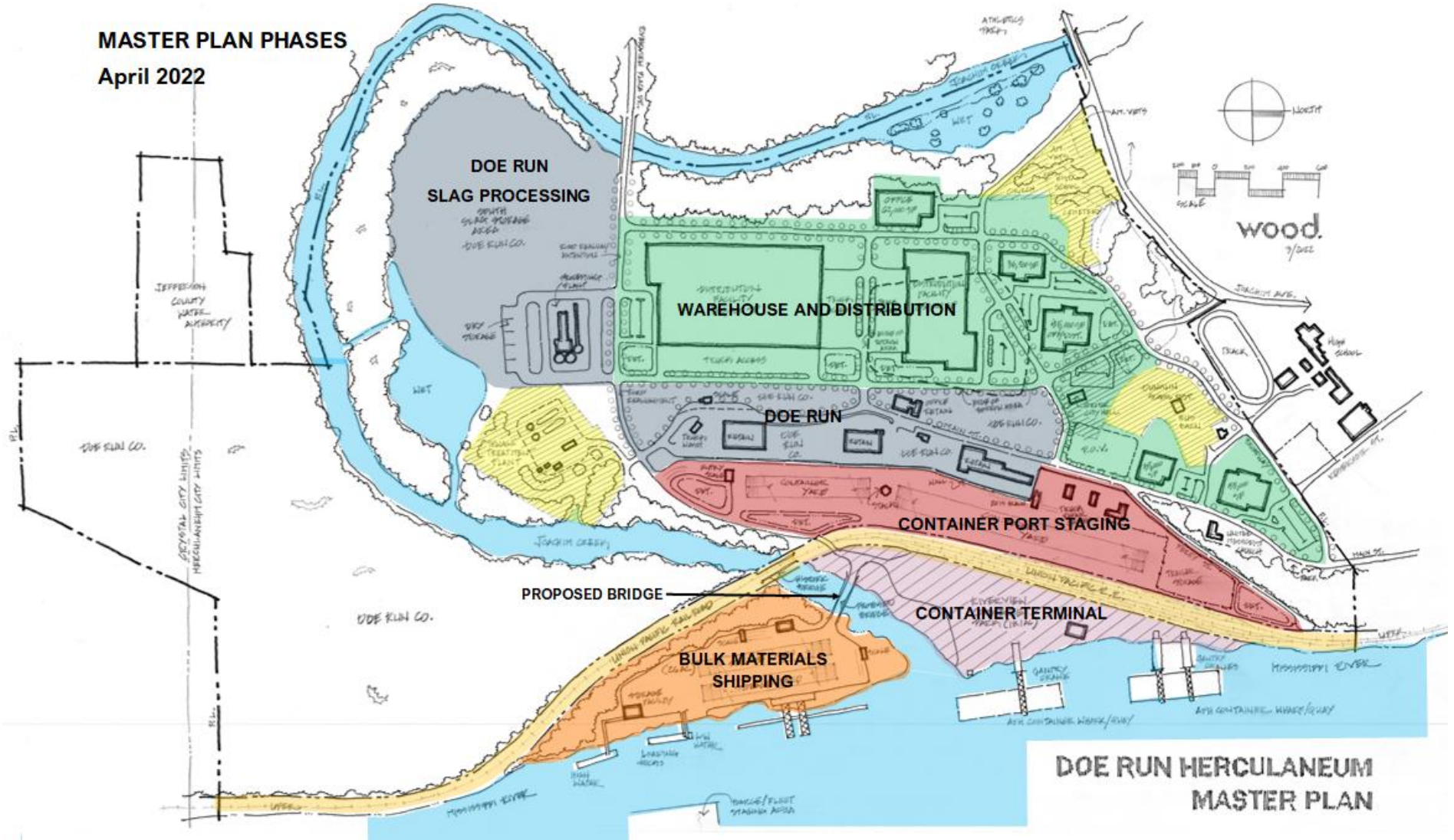


MASTER PLAN
APRIL 2022



DOE RUN HERCULANEUM
MASTER PLAN

MASTER PLAN PHASES
April 2022



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Smelter Site – Phase 2 Capping Area



Question & Answer Session