

Welcome to



SOIL Treatability Study

Energy Technology Engineering Center • U.S. Department of Energy

Soil Treatability Investigation Group
May 30, 2013



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Tonight's Meeting

Wendy Green Lowe, Facilitator



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Tonight's Objectives

The May 30th meeting is designed to support discussion about:

- Recommendations made by Sandia National Laboratories during Phase I
- Which of those recommendations DOE will pursue during Phase II
- Selection process used to select universities to conduct Phase II studies
- Overviews of each of the five studies that will be conducted during Phase II, including the expected schedule for completion and opportunities for STIG involvement
- STIG member preferences for involvement during Phase II.



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Proposed Ground Rules

1. Treat others with kindness and respect
2. Hold questions until after each topic
3. Avoid distractions



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Sandia's Recommendations, DOE's Decisions

Stephanie Jennings (DOE)



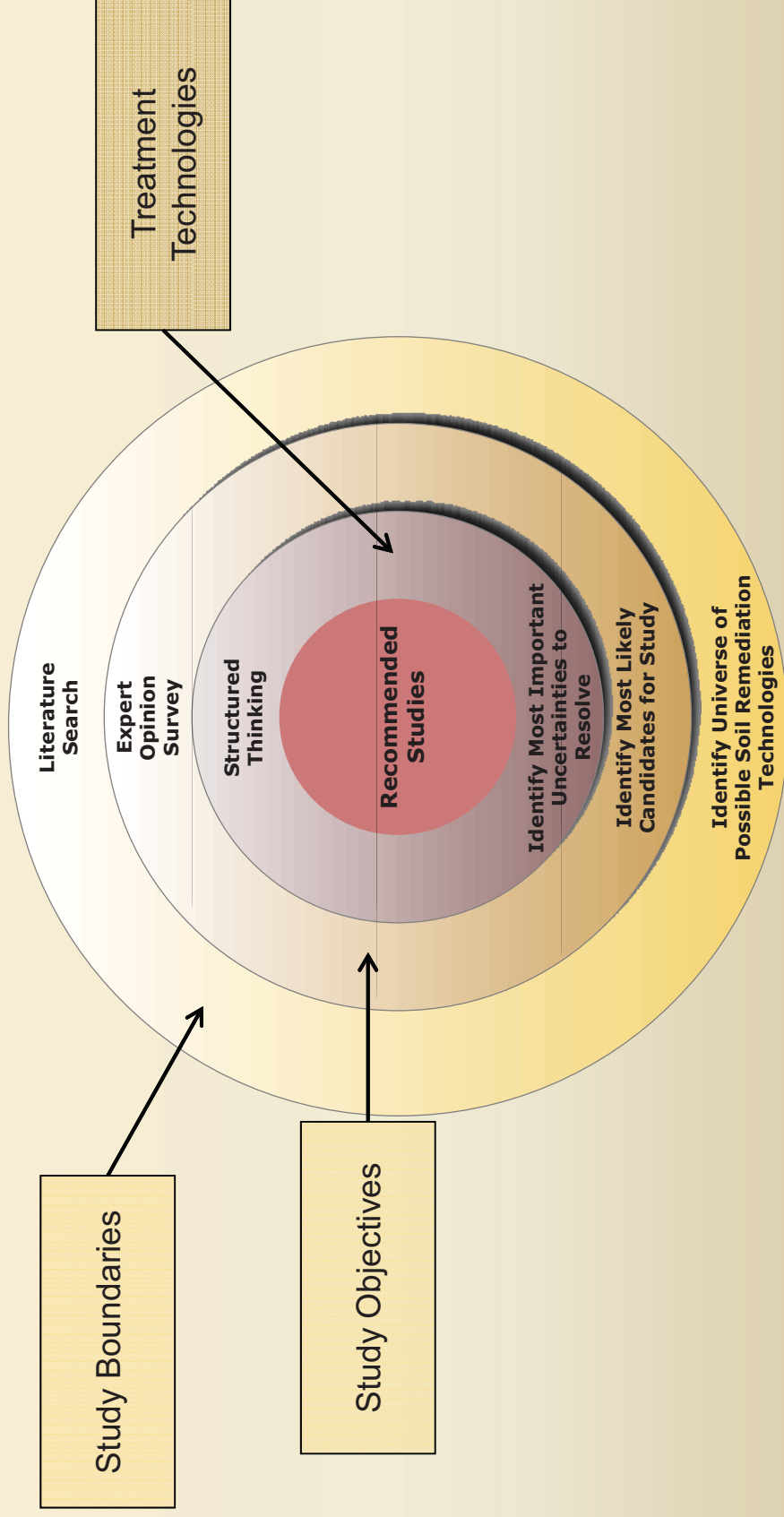
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Phase One – Sandia's Work





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Sandia's Recommendations:

- Identify how soil contaminants are partitioned to soil particles: the Soil Partitioning Study
- Determine the mercury valence state in soils: the Mercury Contamination Study
- Evaluate the potential for natural attenuation: the Natural Attenuation Study
- Evaluate the potential for bioremediation: the Bioremediation Study
- Evaluate the potential for phytoremediation: the Phytoremediation Study
- Evaluate the potential for thermal treatment: the Thermal Treatment Study



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Introduction to Phase 2

- DOE will implement five of Sandia's recommendations during Phase II
 - Will not implement the thermal treatment study
- DOE decided to use local universities to implement the studies
- DOE asked CDM to conduct a procurement process to select one or more universities



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CDM's Procurement Process

John Wondolleck and Keegan Roberts (CDM)



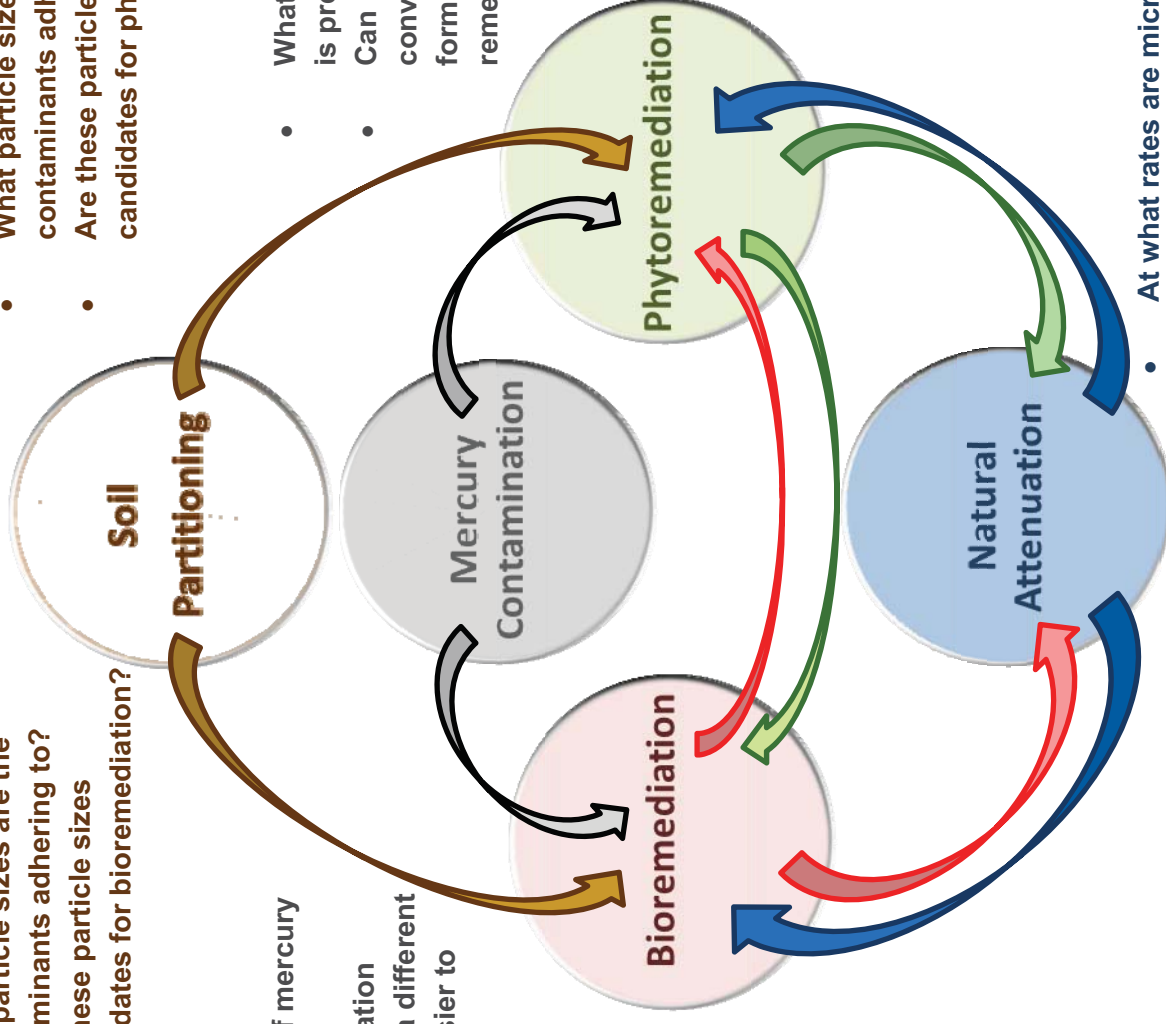
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- What particle sizes are the contaminants adhering to?
- Are these particle sizes candidates for bioremediation?

- What particle sizes are the contaminants adhering to?
- Are these particle sizes candidates for phytoremediation?

- What form(s) of mercury is present?
- Can bioremediation convert it into a different form that is easier to remediate?

- What form(s) of mercury is present?
- Can phytoremediation convert it into a different form that is easier to remediate?



- At what rates are microbiological, biological, and weathering processes degrading contaminants?
- How can these processes be optimized?



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Introducing our Researchers

- Dr. Mark Matsumoto - Professor, Department of Chemical and Environmental Engineering and Associate Dean for Research and Graduate Education in the Bourns College of Engineering at the University of California at Riverside – Soil Partitioning Study
- Dr. Haizhou Liu - Assistant Professor, Department of Chemical and Environmental Engineering at the University of California at Riverside – Mercury Contamination Study
- Dr. Yarrow Nelson - Professor of Environmental Engineering at California Polytechnic State University – Natural Attenuation, Bioremediation, and Phytoremediation studies



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Soil Partitioning Study

Dr. Mark Matsumoto

University of California, Riverside



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Mercury Contamination

Dr. Haizhou Liu

University of California, Riverside



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Natural Attenuation Study

Dr. Yarrow Nelson

California Polytechnic State University



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Bioremediation Study

Dr. Yarrow Nelson

California Polytechnic State University



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Phytoremediation Study

Dr. Yarrow Nelson

California Polytechnic State University



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Integration of the Soil Treatability Study into Cleanup Decisions

Keegan Roberts, CDM

Stephanie Jennings, DOE



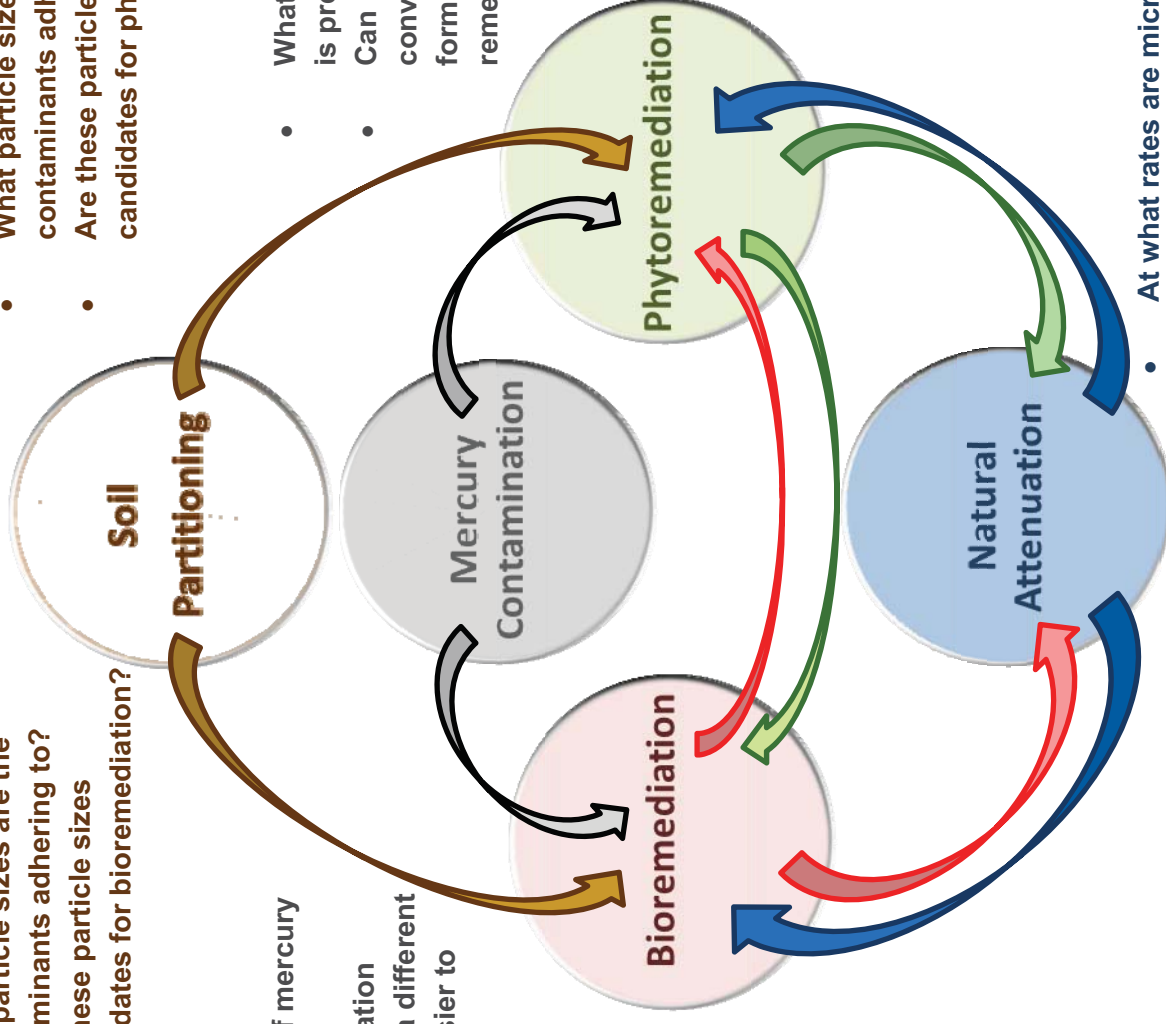
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	2013			2014			
	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Soil Partitioning	Study Plan	↑	Draft Report				
Mercury Contamination	Study Plan	↑	Draft Report				
Natural Attenuation	Study Plan	Study Plan	Phase 1 Draft Report	↑			Phase 2 Draft Report
Bioremediation	Study Plan	Study Plan					
Phytoremediation	Study Plan	Study Plan		↑			Draft Report





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The Results of the Soil Treatability Study...

- Will help us determine when excavation is the only way we could comply with the AOC and when and if other approaches could help us get there
- Will inform decisions about how to best accomplish the requirements in the AOC
- Will be documented, along with other plans for meeting the requirements in the AOC, in a Soils Remedial Action Implementation Plan – an enforceable document that will drive the cleanup of the soils at ETEC



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A look ahead

- Once it is clear what portions of the site require clean-up, DOE will determine how best to meet the requirements of the AOC
- In many cases, excavation could be required if soil cannot be treated to cleanup levels
- Excavation could entail
 - risk to workers
 - transportation of soil to off-site licensed disposal site(s)
 - risk to on-site archaeological resources
 - risk to habitat for plants and wildlife found at the site.



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Preferences for Ongoing STIG Involvement

Wendy Green Lowe, Facilitator



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Using smart phones to poll the STIG

1. We are using an online polling service called PollEverywhere found at <http://www.poll Everywhere.com>
2. We do have a paper version of the survey for those without phones capable of sending text messages.
3. The results will be compiled by as an Excel spreadsheet. No personal information will be included in the spreadsheet. For example, we will not have your cell phone number!
4. Questions will be posed on the screen. After each question, please send your response via text message to 22333.



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Using smart phones to poll the STIG

5. After each response, you will get a response text saying “You chose ‘your response’ - - Powered by PollEverywhere.” If you don’t get this response, it means that you didn’t send your response properly. Please try again.
6. You will only be able to respond once per question unless I tell you otherwise. If you respond more than the number of times allowed, the “extra answers” will not be included in the report. So make sure you know how you want to respond before you send your text.



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Using smart phones to poll the STIG

7. The first question will be the hardest. For that question, you will send the code 141049 followed by a space then your name. Without your name, we will not know who sent the responses. For planning future meetings, we will need your name.
8. Once we have figured out how many people are participating, we will ask more questions. We will be looking to get responses from everyone before moving on to the next question.



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Using smart phones to poll the STIG

9. After the first question, you will only be sending a code number to respond to each question.
10. Responses will be presented on the screen so we can see how people are responding real time.
11. Our goal is to get information from you as quickly as possible and to help you see how others are responding to the same questions.



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*Thanks so much for attending
tonight*



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