Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Motivation for the Activity:

During the panel discussion of the May 22, 2019 FRTR meeting focusing on ***Modeling in Support of Site Remediation***, a question was raised as to the availability of guidance on subsurface modeling in support of site remediation by the FRTR agencies. Since there was no clear answer, a motion to form an ***Ad Hoc subcommittee*** to identify guidance was made and seconded.

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Request to Search and Nominate:

All FRTR Steering Committee members were requested to provide a list of guidance documents and information sources available to assist practitioners involved in modeling site remediation, contaminant source characterization, and remediation activities, and to nominate a modeling specialist to serve on the ***Ad Hoc*** subcommittee.

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Ad Hoc Subcommittee Membership:

Kent Glover, AFCEC **and Tom Nicholson**, U.S. NRC, Ad Hoc Co-Chairs
Noman Ahsanuzzman, EPA
George Alexander, U.S. NRC
Jon Fenske, USACE
Edward Gilbert, EPA
Thomas Lancaster, U.S. NRC
Sophia A. Lee, NAVFAC
Allen M. Shapiro, USGS
Elise Striz, U.S. NRC
Haruko Wainwright, Lawrence Berkeley National Laboratory

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Search Results:

- No single guidance document was identified by the FRTR agencies.
- Ad Hoc members expanded the search to subsurface flow and contaminant transport modeling documents and industry standards.
- Expanded search provided numerous information sources which needed to be categorized to facilitate practitioners' retrievability and use.
- Two broad categories: ***Topical Area*** and ***Cross-Cutting*** category.
- Definitions for the ***Topical Areas*** were provided with corresponding acronyms, and similar ***Cross-Cutting*** categories and acronyms.

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Topical Areas & Acronyms:

- ✓ *General Guidance **[GG]***
- ✓ *Characterization to Support Development of Conceptual Site Models **[CCSM]***
- ✓ *Numerical Models, their Manuals and Output Portrayals **[NMMO]***
- ✓ *QA/QC of Data and Model Inputs **[QAQC]***
- ✓ *Calibration, Verification and Validation of Models **[CVVM]***
- ✓ *Uncertainty Analysis of Models **[UAM]***
- ✓ *Case Studies of Modeling which Supports Remediation Decisions **[CSMRD]***

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Cross-Cutting Categories & Acronyms:

- Regulatory and/or Industry Guidance **[RIG]**
- Modeling Tools, Manuals and Output Portrayals **[MTMO]**
- Lessons Learned from Modeling Case Studies focused on Remediation Successes **[LLMR]**
- Subsurface Flow Modeling **[SFM]**
- Contaminant Transport Modeling **[CTM]**

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Deliverable:

Bibliography of Guidance and Information Sources on Subsurface Modeling to Support Site Remediation was reviewed and approved by the FRTR Steering for posting on the FRTR Website.

Each citation identifies its ***author/organization, document title and reference information, abstract/scope, electronic link, and Topical and Cross-Cutting acronyms***.

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Example:

Barnett, B. and Townley, L.R., ***Australian Groundwater Modelling Guidelines***, Waterlines Report, National Water Commission, Canberra, Australia, 2012. ISBN: 978-1-921853-91-3.
https://www.researchgate.net/publication/258245391_Australian_Groundwater_Modelling_Guidelines.
[GG][CVVM][UAM] **[RIG][SFM][CTM]**

Abstract/Scope: The objective of the Australian groundwater modelling guidelines is to promote a consistent and sound approach to the development of groundwater flow and solute transport models in Australia. It builds on existing guidelines (Murray-Darling Basin Commission 2001) that have been adopted throughout Australia in recent years. While it is acknowledged that the term groundwater modelling refers to a variety of methods, the guidelines focus on computer-based numerical simulation models. The guidelines should be seen as a point of reference and not as a rigid standard. They seek to provide direction on the scope and approaches common to modelling projects. The continual evolution of modelling techniques through adaptation and innovation is not only acknowledged but encouraged. It is recognized there are other approaches to modelling not covered in these guidelines and that such approaches may well be appropriate and justified in certain circumstances.

Federal Remediation Technologies Roundtable (FRTR)

Promoting Interagency Cooperation and Technology Innovation
To Cleanup Hazardous Waste Contamination

FRTR Steering Committee Activity

Bibliography of Guidance and Information Sources on Subsurface Modeling to Support Site Remediation is posted on the FRTR Website at: https://frtr.gov/publib.htm .

FRTR Steering Committee is looking for feedback on its useful, and also requests information on developed guidance for its updating on a five-year cycle.