

Special Challenges to Groundwater Remediation

25 March 2009, London

Practicalities and technologies
Risk vs. reasonableness
Conceptual site models
Validation and rebound
Legislative and policy changes

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Groundwater makes up almost 70% of the world's freshwater; it is imperative that we ensure this resource is preserved for future generations through effective remediation methods.

This *Brownfield Briefing* conference will address the challenges, practicalities and aspirations of this important area. It will provide both an examination of technologies and remediation approaches currently employed and emerging in the UK, and on the current and forthcoming regulatory drivers.

The conference will be as valuable to the new engineer moving into this expanding sector as it will to the seasoned professional wishing to keep abreast of developments, progress against perennial challenges, and future emerging themes.

Who should attend

- Consultants
- Contractors
- Regulators and Local Authorities
- Environmental scientists
- Lawyers
- Problem holders and end users

Why attend

- Get clear explanations and updates on all the key issues and opportunities, all in one place, all in one day
- Find out about all the latest guidance. New groundwater legislation is driving remediation in the UK: what opportunities will this pose for your business?
- Learn from end users what technologies are really being used, and the practicalities involved
- Examine what Prevent or Limit and changes to the permitting and notice regimes will mean for you
- Find out about some exciting new research into the hyporheic zone
- Do you feel the reasonableness can out-way the risks? Debate practicalities of risks vs. reasonableness
- Explore what can be learnt from international case studies. Find out more about how other countries cope with the same difficulties
- Examine what UK professionals can do to resolve some of the perennial problems within our industry. Debate and analyse with the regulators, academics, consultants and end users
- Network, ask the questions that matter to you, and get answers

9:00 Registration and coffee

10:00 Chair's opening remarks and keynote

- The history of groundwater
- What brought us here?
- What does the future look like?

[Dr Jeremy Birnstingl](#), [Managing Director](#)
[Regenesis](#)

10:25 What legislation drives UK groundwater remediation, present and future?

- Current hot topics
- Issues and opportunities

[Alistair Kean](#), [Director](#)
[IKM Consulting Ltd](#)

10:45 Groundwater and conceptual site models

- The importance of conceptual site models
- CSMs and groundwater risk assessment
- CSMs and groundwater remediation

[Judith Nathanail](#)
[Principal Consultant](#)
[Land Quality Management \(LQM\)](#)

11:05 KEYNOTE: Wider perspectives and emerging themes

- What are the environmental issues that will shape our industry in the coming decades?
- What may be required of us in future regarding carbon budgets and sustainability considerations?
- Will environmental clean-up ever be completed, and what form might it take in future?
- Where are the forthcoming needs and what are the commercial opportunities these may present us?

[Rt Hon Lord Smith of Finsbury](#)
[Chairman](#)
[Environment Agency](#)

11:30 Questions and answers

11:40 Coffee and tea

12:05 Groundwater quality – legislative and policy changes

- The combined requirements of the Water Framework and Groundwater Daughter Directives
- Differentiating between groundwater objectives
- What does Prevent or Limit mean for the control of hazardous and non-hazardous substances?
- Changes to permitting and notice regimes over the next two years

[Tony Marsland](#), [Policy Manager](#)
[Groundwater Quality and Protection](#)
[Environment Agency](#)

12:30 Risk assessment: challenges and emerging issues

- Source – plume complexities: NAPLs, heterogeneity, hotspots, niche activity
- Natural attenuation at the edge: the

groundwater-surface water interface

- Handling ecological risks too

Dr Michael Rivett, Lecturer in Earth Sciences
University of Birmingham

12:55 What is practical / impractical (risk vs. reasonableness)

- What is the reality behind the numbers?
- How do you interpret the risk?
- What is a reasonable outcome?

Mike Quint, Associate Director
Arup

13:20 Questions and answers

13:30 Lunch

14:15 Remediation in systems of varying permeability

- Challenges posed by contaminant distribution in systems of varying permeability (dual porosity or multi-sequence horizons, e.g. made ground and alluvium)
- Selection of appropriate remedial approaches and importance of treatment train concept
- Practicable limits of technologies within such systems
- Practical illustration of these concepts by reference to field examples

Mark Stevenson
Service Line Leader, Process Remediation
URS

Dr Richard Bewley
UK Remediation Service Line Leader
URS

14:45 The matrix; or how subsurface conditions affect the performance of groundwater remediation

- A review of some of the main environmental constraints on the rate and efficiency of common groundwater remediation technologies and the remedial targets that can be achieved. The discussion will consider some techniques that try to work around these constraints and some practical lessons that can be learned from remediation experience

Dr Genevieve Boshoff
Sirius

15:10 Validation and rebound

Brian Bone, Principal Scientist
Environment Agency

15:25 Validation and rebound case study: tracing a path to a successful chalk remediation

- Project included remediation of a kerosene spill on the chalk, supported by frequent groundwater monitoring, tracer testing and risk assessment while continuous liaising with the Environment Agency and Southern Water. The critical receptor was a Southern Water adit located 200m down gradient of the spill and tracer testing was used to quantify the contaminant velocities and conceptualise the fracture pathways through the chalk aquifer to the adit

Nicky Robinson, Principal Hydrogeologist
Atkins Limited

15:40 Questions and answers

15:50 Coffee and tea

16:10 Technologies: what is really being used out there?

- An overview of remedial technologies
- Limitations in selection of remedial technology acceptance
- What actually gets used by industry?

Thomas Grosjean
Remediation and Environmental Technology
Specialist
BP

16:35 International perspectives

- What lessons can be learned from other countries?
- What's on the wind, and what should UK PLC-Environment be pushing for?

Dr Cecilia MacLeod, Technical Director
Arcadis

17:00 Panel discussion – perennial problems / wish list

- Pump and treat
- Risk vs. hazard
- Where we are, where should we be?
- Practicalities on how we would clean up – the wish list
- What's holding us back and where could we be?

Brian Bone, Principal Scientist
Environment Agency

Dr Michael Rivett, Lecturer in Earth Sciences
University of Birmingham

Dr Genevieve Boshoff
Sirius

Thomas Grosjean, Remediation and Environmental
Technologist, BP

17:45 Close and networking reception

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