Contaminated Land and Groundwater: Future Directions

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Contaminated Land and Groundwater: Future Directions

EDITED BY

D. N. Lerner
Department of Civil and Environmental Engineering,
University of Bradford, West Yorkshire
BD7 1DP, UK

N. R. G. Walton
Department of Geology, University of Portsmouth,
Burnaby Building, Burnaby Road, Portsmouth
PO1 3QL, UK

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Preface

Contaminated land and groundwater are major environmental issues in all industrialized countries, and will become so throughout the world in the next century. The threat of both health and environmental liabilities drives land holders to investigate, and sometimes restore, their sites. However, the lack of good technical and cost effective solutions hampers restoration. The currently dominant technology of *dig and dump* is clearly unsustainable in the long term, with its transfer of contaminant loads into valuable landfill space combined with all the associated traffic hazards.

The future handling of these problems must be more sophisticated, and is likely to include:

- better and cheaper site investigation tools, to give more confidence and higher precision to our understanding of individual sites
- risk assessment techniques which are not only practical to use but also reliable, to move away from the currently simple standards-based decisions towards more realistic risk-based assessments of priorities
- alternative restoration techniques, including the acceptance of natural attenuation, and the development of ways to overcome the long time constants which are caused by diffusion in heterogeneous geological environments
- research-based understanding of pollutant behaviour, in order to derive better models and hence better site investigation, risk assessment, and restoration techniques

This book is based on the papers presented to the Geological Society conference *Contaminated Land and Groundwater: Future Directions* which was convened jointly by the Engineering and Hydrogeological Groups. The meeting was hosted by the University of Portsmouth in September 1996. Selected papers from the meeting have been refereed and revised, and some new papers have been commissioned. They cover many of the issues listed above with a number dealing with risk and economically based approaches. Notable absences are new restoration technologies, although several deal with natural attenuation of contaminants. Overall, the book emphasizes policy, decision making, and contaminant behaviour, but includes site investigation and case studies from the field. We hope it will remain a valuable resource for both practitioners and researchers into the next century.

David Lerner
Bradford

Nick Walton
Portsmouth

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