Meeting report

Royal Society of Chemistry Environmental Chemistry Group

Contaminated Land: Contaminant Transport and Fate

"Exploring contaminant transport and fate in soil and groundwater with respect to contaminated land"

Held in the Council Room, Royal Society of Chemistry, Burlington House, Piccadilly, London on Wednesday 23rd September 2009

This one day meeting on contaminated land was aimed at scientists and policy makers who are involved in the assessment and remediation of contaminated land. More than thirty delegates from a wide range of organisations including consultancies, regulators and academia took part in a detailed discussion on contaminant transport and fate in soil and groundwater.

Professor Andrew Hursthouse (University of the West of Scotland) began the proceedings with a presentation entitled *Contaminated land regulation: science policy issues and pollutant dynamics*. He highlighted policy issues in contaminated land and their relevance to contaminant transport and fate, and set the scene for more detailed discussion later in the day.

Professor Steven Banwart (University of Sheffield) began his talk, *Novel laboratory methods to study reactive transport of organic pollutants in groundwater*, by describing the *in situ* biodegradation of organic contaminants in groundwater. He highlighted that our knowledge of physical hydrogeology and contaminant chemistry and speciation is greater than our understanding of the biological processes involved in the degradation of these compounds, and that further research is needed to bridge this gap.

Dr Chris Collins' (University of Reading) presentation, *Importance of chemical properties in estimating exposure to chemicals*, illustrated how literature chemical properties can vary for organic compounds of the same homologous series, how this variation effects their partitioning (fugacity modelling) and availability in soil for exposure to human health. In particular, Dr Collins focused on a research study which compared various models for describing the uptake of organic compounds by plants as used in the Environment Agency Contaminated Land Exposure Assessment model.

An historical perspective was introduced by **Dr Mike Rivett** (University of Birmingham). *The legacy of chlorinated solvents in contaminated land and groundwater* outlined the history of the production and use of chlorinated solvents in the 20th century and how our understanding of their transport and fate in groundwater has developed. Dr Rivett then explored some case studies where

chlorinated solvents posed a risk to receptors and described the remediation techniques used to reduce the risk.

Persistent organic contaminant availability in sediment: Improved risk assessment and novel remediation approaches was the topic for the final speaker, **Dr David Werner** (University of Newcastle), who first described partitioning (fugacity modelling) of organic compounds and mechanisms for their absorption to sediment. Remediation of the sediment has been successfully accomplished using activated carbon, and is supported by experimental and modelling data.

The day's proceedings concluded with a question and answer session chaired by Andrew Hursthouse.

JAMES LYMER

RSC ECG Committee Member
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