

Contents

Part I: Making Environmental Reference Materials

Chapter 1
Guidelines for the Preparation and Verification
of Neat Organic Environmental Reference Materials.....3
Michael A. Re

Chapter 2
The Preparation and Validation of Isotope Dilution Standards:
A Case Study in PCBs 15
Daniel L. Bolt and Joel C. Bradley

Chapter 3
Preparation and Verification of ICP and AA Reference Standards.....25
Jean-Pierre Zajac

Chapter 4
The Preparation and Stability of PCDD/PCDF Soil Standards33
Michael A. Re, Lawrence H. Keith, and Alan W. Nichols

Chapter 5
The Preparation of National Research Council
Certified Reference Materials.....43
Scott N. Willie

Chapter 6
CCRMP: Preparation and Utilization
of Environmental and Geochemical Reference Materials53
Maureen E. Leaver and William S. Bowman

Chapter 7
Development of Fortified and Unfortified Fish CRMs for Chlorinated
Dibenzo-*p*-dioxins, Chlorinated Dibenzofurans, and Coplanar PCBs,
and Their Use as Reference Materials for Organohalogens.....61
David B. Sergeant and Daniel L. Bolt

Chapter 8
Preparation and Certification of a Biological Reference Material (CARP-1)
for Polychlorinated Dibenzo-*p*-dioxin, Dibenzofuran,
and Biphenyl Congeners.....77
**Catharine A. Fraser, Graeme J. Gardner, Paulette S. Maxwell, Cariton
Kubwabo, Roger Guevremont, K.W. Michael Siu, and Shier S. Berman**

Chapter 9	
On the Development of Certified Aqueous Reference Materials	
Using Natural Unpreserved Lake, River, and Rainwaters.....	89
Keijo I. Aspila, Harry Alkema, Nabil Arafat, Karen Jankovich,	
Ellie Kokotich, and Christian Vogel	

Chapter 10	
The Preparation and Validation of Generator Columns	
for Highly Hydrophobic Materials.....	113
Glenys Foster Roberts and Barry G. Oliver	

Part II: Using Environmental Reference Materials

Chapter 11	
Establishing the Credibility of Environmental Laboratories	131
Donald E. King	

Chapter 12	
Standard Reference Materials for the Determination	
of Trace Organic Contaminants in Environmental Samples	143
Stephen A. Wise and Michele M. Schantz	

Chapter 13	
The User's Perspective on Environmental Standard Solutions	187
Gregory E. Pronger and Marilyn A. Melton	

Chapter 14	
Matrix-Based Standards and Their Uses.....	197
Lawrence H. Keith	

Chapter 15	
In-House Reference Materials as a Means to Quality Assurance:	
The Canadian Wildlife Service Experience	205
Bryan Wakeford and Richard Turle	

Chapter 16	
The Use of Reference Materials and Standards	
in the Analysis of Environmental Samples for Organic Contaminants.....	233
Ian H. Rogers and M. Coreen Hamilton	

Chapter 17	
Environmental Certified Reference Materials.....	249
Scott N. Willie	

Index	267
-------------	-----