26th Annual International Conference on Soils, Sediments, Water and Energy 2010

Contaminated Soils, Sediments, and Water Volume 16

Amherst, Massachusetts, USA 18-21 October 2010

Editors:

Paul T. Kostecki James Dragun Edward Calabrese David Ludwig

ISBN: 978-1-61782-818-8

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

All papers Copyright© (2010) by their original authors All rights reserved.

Printed by Curran Associates, Inc. (2011)

The papers contained in this volume are available free of charge at the following websites: http://www.UMassSoils.com
http://scholarworks.umass.edu/soilsproceedings/

Annual International Conference on Soils, Sediments, Water and Energy Association for Environmental Health and Sciences (AEHS) 150 Fearing Street, Suite 21 Amherst, MA 01002

Phone: (413) 549-5561 Fax (413) 549-0579

info@aehs.com

The material contained in this document was obtained from independent and highly respected sources. Every attempt has been made to insure accurate, reliable information, however, the publisher cannot be held responsible for the information or how the information is applied. Opinions expressed in this book are those of the authors and/or contributors and do not reflect those of the publisher.

For permission requests, please contact the authors.

Table of Contents

COI	NTRIBUTING AUTHORS	V1
ACI	KNOWLEDGMENTS	viii
FOF	REWORD	хi
AB(OUT THE EDITORS	xii
PAF	RT I: FATE AND TRANSPORT	
1.	DEVELOPMENT OF A MOBILE LABORATORY SYSTEM FOR SITE CHARACTERIZATION AND ANALYSIS OF SUBSURFACE OIL CONTAMINANTS Ala'a H. Ismail, Majid Al-Rasheedi, Michael Quinn and Ahmad Al-Nijadah	1
2.	GREENHOUSE GAS EMISSIONS MODELING: A TOOL FOR FEDERAL FACILITY DECOMMISSIONING Karen L. Petho, Christopher D. Zevitas, Adam F. Klauber, Jonathan D. Cybulski	13
PAF	RT II: HEAVY METALS	
3.	NICKEL DERMAL BIOAVAILABILITY IN PIG SKIN INCREASED BY A CHEMICAL MIXTURE: ROLE OF GENDER M.S. Abdel Rahman and R.M.Turkall	29

PART III: PBCs

- 4. RELATIONSHIP BETWEEN SEDIMENT MORPHOLOGY 37
 AND PCB CONTAMINATION IN THE ACUSHNET
 RIVER, NEW BEDFORD, MASSACHUSETTS
 Michael W. Morris, Anita Rigassio Smith, Joshua Cummings,
 Dave Walsh
- 5. PCBS IN BUILDING CAULK: HEALTH HAZARD OR REGULATORY OVERREACTION?

 James D. Okun

PART IV: REMEDIATION

- 6. THE TREATMENT OF "MGP" GROUNDWATER 65 CONTAMINATED WITH COMPLEXED CYANIDES, HEAVY METALS AND VARIOUS ORGANICS USING A THREE STAGE ADVANCED OXIDATION PROCESS

 L. Joseph Bollyky, Lance Downs
- 7. APPLICATIONS AND BENEFITS OF GROUNDWATER 77
 RECIRCULATION FOR ELECTRON DONOR DELIVERY
 AND PH-ADJUSTMENT DURING ENHANCED
 ANAEROBIC DECHLORINATION
 David Falatko, Sami A. Fam, George Pon

PART V: SEDIMENTS

8. REVIEW OF MECHANICAL AND HYDRAULIC 90 DREDGING AT TWO SEDIMENT REMEDIATION SITES

James Wescott, John Dirgo, Jack Brunner, Scott Ireland, Scott Cieniawski

Table of Contents

PART VI: VAPOR INTRUSION

9. **VAPOR INTRUSION ASSESSMENT – A COMPARATIVE** 100 **ANALYSIS OF SUBSURFACE VAPOR SAMPLING METHODS**

Laurent C. Levy, David Shea, Daniel B. Carr