

Vapor Intrusion Conference 2009

CP-180

**San Diego, California, USA
27-30 January 2009**

Volume 1 of 2

ISBN: 978-1-61567-045-1

Printed from e-media with permission by:

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

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

Copyright© (2009) by the Air and Waste Management Association
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the Air and Waste Management Association
at the address below.

Air and Waste Management Association
One Gateway Center, 3rd Floor
420 Fort Duzuesne Blvd.
Pittsburgh, Pennsylvania 15222-1435

Phone: 800 270 3444
Fax: 412 232 3450

www.awma.org

TABLE OF CONTENTS

VOLUME 1

Keynote: Investigating Vapor Intrusion with Confidence and Efficiency	1
<i>Henry Schuwer, Ronald Mosley</i>	

Session 1: Regulatory Developments

Groundwater-Subslab-Indoor Air Relationships in U.S. EPA's VI Database.....	57
<i>Helen Dawson, Ian Hers, William Wertz, Todd McAlary</i>	
Vapor Intrusion Mitigation Advisory.....	82
<i>Dot Lofstrom, Lorraine Larsen-Hallock</i>	
An Update on Legal Developments Surrounding Vapor Intrusion	99
<i>Lawrence Schnapf</i>	

Session 2: VI and Its Impact on Risk Management/Decision Making

Update on Implementation of ASTM Standard E2600.....	100
<i>Tony Buonicore</i>	
Communicating Basic Principles of VI to the General Public	143
<i>Glenn Markwith</i>	

Session 3: Modeling

Theoretical Overview of VI Processes.....	187
<i>Lilian Abreu</i>	
VI Site Characterization – Why Invest the Time, Effort, and Money in Modeling?.....	210
<i>Kelly Pennell, Ozgur Bozkurt, Eric M. Suuberg</i>	
Important Physical Processes for VI: A Literature Review	233
<i>Thomas McHugh, Todd McAlary</i>	

Session 4: Addressing VI at Hill Air Force Base

Nobody Told Me About TCE When I Moved Here! Challenges of Communicating VI Information to the Public	274
<i>David Harris, Jarrod Case</i>	
The Effects of Meteorological Conditions on Residential VI Results at Hill Air Force Base, Utah.....	299
<i>Shirley Steinmacher, Rita Hanover, Peter EerNisse, Jennifer Miller, Jarrod Case</i>	
Vapor Removal System Efficacy in Residential Communities Surrounding Hill AFB, Utah	335
<i>Peter EerNisse, Shirley Steinmacher, Toni Mehraban, Jarrod Case, Rita Hanover</i>	
Keeping Up with the Joneses: Residential Data Management	365
<i>Jennifer Miller, Shirley Steinmacher, Kenneth Moosman, Peter EerNisse, Jarrod Case</i>	

Session 5: Passive Technology

Recent Developments in Thermal Desorption (TD) – GCMS Technology for Further Enhancements in Trace Detection	379
<i>Peter Hughes, J. Dwan, D. Miser</i>	
Mass to Concentration Tie-In for Passive Soil Gas Surveys: Improved Technique for Source Area, Spatial Variability and Vapor Intrusion Assessment.....	436
<i>Joe Odencrantz, Harry O'Neill, Paul Johnson</i>	
Quantitative Passive Soil Gas and Air Sampling in VI Investigations	476
<i>Jay Hodny, James Whetzel Jr., Harry Anderson II</i>	
Quantitative Passive Diffusive Samplers for Assessing VI.....	517
<i>Todd McAlary, Hester Groenevelt, Tadeusz Górecki, Suresh Seethapathy, Heidi Hayes</i>	

VOLUME 2

Session 6: Sampling and Analysis – Methodology

A Cost-Effective Solution for Collecting Groundwater and Soil Gas Data for VI Studies	557
<i>Mark Ensign, Raymond Siegener</i>	
A Field Comparison of Soil Gas Sampling and Analytical Techniques.....	587
<i>Robert Truesdale, Blayne Hartman, Todd McAlary, David Mickunas, Doug Grosse, John Clark</i>	
Evaluation of Different Time Integral Indoor Air Measurements Collected from an Active Drycleaner.....	623
<i>Gina Plantz, Richard Rago</i>	
Sub-slab vs. Near-slab Soil Vapor Profiles at a Chlorinated Solvent Site.....	643
<i>Greg Swanson, James Elliot, Brian Schumacher, John Zimmerman, Blayne Hartman</i>	
Comparison of TO-15, TO-17, and a Modified NIOSH Sampling Method for Investigating Indoor Air at Sites Outside the United States.....	667
<i>Justin Desrosiers, Heidi Hayes, Paulo Valle, Eric Anderson</i>	
VI Sampling Options: Performance Data for Canisters, Badges, and Sorbent Tubes for VOCs	698
<i>Linda Coyne, George Havalias, Maria Echarte</i>	
Long-Term Monitoring Strategies for Indoor Air Measurements	747
<i>Heidi Hayes</i>	
Chemistry Testing for VI Investigations	782
<i>Will Elcoate</i>	

Session 7: Data Evaluation

Prediction of Indoor Air Quality from Soil Gas Data at Industrial Buildings.....	805
<i>Bart Eklund, Don Burrows</i>	
The Reality of Sampling and Assessing Vapor Intrusion on Petroleum Sites.....	834
<i>Jackie Wright, Christina Robinson</i>	

Investigation of Multiple Lines of Evidence for VI	881
<i>James Elliot, Mark Rigby, William Mills, Kateryna Sayenko, David Brenner, David Bell, Steven Strausbauch</i>	

Session 8: Controls and Case Studies

Land Development Case Study: Assessing Potential Health Risk Assessment Related to Vapor Intrusion of VOCs and Radon into Future Structures Using Static and Dynamic Flux Chambers	913
<i>Teri Copeland, C. Schmidt, Mark Jones</i>	

A Comparison of Viable Vapor Intrusion Mitigation Measures at Three Industrial Facilities	960
<i>Matthew Traister</i>	

Evaluating Large Buildings and Assessing the Feasibility and Applying Active Soil Depressurization as a Remedial Solution	980
<i>Tom Hatton</i>	

Accelerating the Redevelopment of a Vapor-Impacted Property on Data-Informed Verification of Vapor Barrier Technology	1026
<i>John Lowe, Jessica Raphael, Loren Lund, Robert Casselberry Jr.</i>	

Considerations for Vapor Mitigation System Design and Construction at Brownfield and Landfill Redevelopment Sites	1058
<i>Jeff Entin, Richard Warby, Christopher Buzgo</i>	

Author Index