

2010 North American Environmental Field Conference & Exposition
January 12 – 15, 2010
Embassy Suites Hotel USF, Tampa, Florida

CONFERENCE PAPER SCHEDULE

Conference Hall (Salons F & G)

Tuesday, January 12, 2010

8:00 a.m. – 10:00 a.m.

SESSION I: KEYNOTE SESSION

Session Moderator:

David M. Nielsen, *The Nielsen Environmental Field School, Las Cruces, NM*

- ✿ Cross-Cutting Opportunities for the Clean-up Enthusiast
 - Arnold E. Layne, *Director, Technology Innovation & Field Services Division, Office of Superfund Remediation & Technology Innovation, U.S. Environmental Protection Agency, Washington, DC*

- ✿ The Disconnect Between Monitoring and Models
 - Graham E. Fogg, *University of California-Davis, Department of Land, Air & Water Resources, Davis, CA*

- ✿ High-Resolution, Real-Time Methods for the Determination of Hydrostratigraphy and Contamination Distribution
 - Seth Pitkin, *Stone Environmental Inc., Montpelier, VT*

- ✿ Overview of the Discrete Fracture Network (DFN) Approach for Investigating Contaminated Sites in Fractured Sedimentary Rock
 - Beth L. Parker, *University of Guelph, School of Engineering, Guelph Ontario*

10:00 a.m. – 10:15 a.m. Refreshment Break

10:15 a.m. – 12:15 p.m.

Session II – High-Resolution Approaches to Site Characterization

Session Moderator: Sam Williams, *Geosyntec Consultants Inc., San Diego, CA*

- FLUTe Flexible Liner Applications for Investigation of a Large-Diameter Municipal Well in Fractured Dolostone
 - Karl Belan, Beth L. Parker and Jonathan Kennel, *University of Guelph, School of Engineering, Guelph, ON*; John Cherry, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*



- Determination of Trichloroethylene in Rock Samples Using Microwave-Assisted Extraction and Cool On-Column Injection
 - Tadeusz Gorecki and Yongdong Liu, *University of Waterloo, Department of Chemistry, Waterloo, ON*; Beth L. Parker and Maria Gorecka, *University of Guelph, School of Engineering, Guelph, ON*
- Fracture Identification by Measuring Heat Dissipation in Lined Holes
 - Peter Pehme, *University of Waterloo, Department of Earth Sciences and Waterloo Geophysics, Inc., Waterloo, ON*; Beth L. Parker, *University of Guelph, School of Engineering, Guelph, ON*; John Cherry, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*
- Hydraulic Packer Tests in Fractured Rock Relevant to Contaminant Transport Analysis
 - Patryk Quinn and John Cherry, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*; Beth L. Parker, *University of Guelph, School of Engineering, Guelph, ON*

12:15 P.M. – 1:15 P.M. Lunch Break

1:15 p.m. – 3:15 p.m.

Session III – High-Resolution Approaches to Site Characterization

Session Moderator: Gary Robbins, University of Connecticut, Dept of Natural Resources and the Environment, Storrs, CT

- The Use of Electrical Resistivity and Induced Polarization Surface Geophysics as a Non-Invasive High-Resolution Characterization Tool for Environmental Site Evaluation and Remediation
 - Boyce L. Clarke, *Arcadis, Baton Rouge, LA*; Jim Cloonan, *Arcadis, Greenville, SC*
- Results From the Use of a Heated Trunkline to Enhance Performance of the Membrane Interface Probe (MIP)
 - Thomas M. Christy and Dan Pipp, *Geoprobe Systems, Salina, KS*
- Development of Mathematical Models for the Characterization of the MIP System
 - Jan Bumberger and Peter Dietrich, *Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany*
- Direct Sampling Ion Trap Mass Spectrometer (DSITMS) and Dynamic Site Investigations; Utilizing Real-Time and High-Resolution Sampling Methods
 - Eric R. Killenbeck, *Arcadis, Newton, PA*; Nick R.H. Welty, *Arcadis, Novi, MI*; J. Linton, *Arcadis, Tampa, FL*; J.A. Quinnan, *Arcadis, Brighton, MI*

3:15 p.m. – 3:30 p.m. Refreshment Break

3:30 p.m. – 5:30 p.m.

Session IV – High-Resolution Approaches to Site Characterization

Session Moderator: J. F. Devlin, *University of Kansas, Dept of Geology, Lawrence, KS*

- Triad Approach Using the Membrane Interface Probe to Evaluate Chlorinated Solvent Plumes
 - Brad Carlson, *Zebra Environmental, Tampa, FL*; Maria D.S. Watt, Jessica R. Beattie and Ross Trube, *CDM Inc., Edison, NJ*
- Assessment of In-Situ Biodegradation Potential of Hydrocarbons and Fuel Oxygenates Using ¹³C-Labeled Amendments and Bio-Sep Beads
 - Kerry Sublette, *University of Tulsa, Dept of Chemical Engineering, Tulsa, OK*
- The Use of Solid-Phase Microextraction and Various Gas Chromatography Systems for Providing Versatile and Efficient On-Site VOC Analytical Programs
 - Michael Rossi and Dave Crosby, *Stone Environmental Inc., Montpelier, VT*
- Stratigraphic Interpretation of High-Resolution Methods
 - Nick R.H. Welty, *Arcadis, Novi, MI*; Eric R. Killenbeck, *Arcadis, Newton, PA*; J.A. Quinnan, *Arcadis, Brighton, MI*

5:30 p.m. – 7:30 p.m.

Complimentary Welcome Reception in the Exhibit Hall

Co-sponsored by Schlumberger Water Services and Nielsen Environmental Field School

Wednesday, January 13, 2010

Conference Hall (Salons F & G)

8:00 a.m. – 10:00 a.m.

Session V - LNAPL and DNAPL Site Characterization

Session Moderator: Willis Weight, *Carroll College, Dept of Mathematics, Engineering & Computer Science, Helena, MT*

- Why Are DNAPL Sites So Hard to Characterize?
 - William M. Davis, *Triad Environmental Solutions, Inc., Decatur, GA*
- Application of an In-Well Tracer Technique for Direct Measurement of LNAPL Flux
 - Craig Divine, Jonathan Smith, Brad Koons, Bruce Rust, and Terri Rubis, *Arcadis, Highlands Ranch, CO*; Tom Sale, *Colorado State University*; Paul J. Kurzanski, *CSX Transportation Inc.*



- Multi-Component NAPL Investigation of MGP Waste with Focus on TarVOST Technology
 - Terry Griffin, *Cardno TBE, Clearwater, FL*; Randy St. Germain, *Dakota Technologies, Fargo, ND*
- Evaluation of Downgradient Response to Source Treatment at a Site with Complex Lithology and a Mixed DNAPL Source Zone
 - Adam Gilmore, Steven Chapman and Beth L. Parker, *University of Guelph, School of Engineering, Guelph, ON*

10:00 a.m. – 10:15 a.m. Refreshment Break

10:15 a.m. – 12:15 p.m.

Session VI – High-Resolution Approaches to Monitoring

Session Moderator: Joe Rossabi, Redox Tech, Cary, NC

- Karst Problems and Flexible Liner Experience
 - Carl Keller, *Flexible Liner Underground Technologies (FLUTE), Santa Fe, NM*
- Monitoring Back Diffusion Effects from Clayey Interbeds in a Sandy Aquifer Following Source Cutoff
 - Stephen Chapman, Beth L. Parker and Kristina Small, *University of Guelph, School of Engineering, Guelph, ON*; Seth Pitkin, *Stone Environmental Inc., Montpelier, VT*
- Evaluation of Nitrate Sensors for Ground-Water Remediation Monitoring
 - Stuart J. Nagourney, *New Jersey Department of Environmental Protection, Trenton, NJ*; Michael Brody, *US Environmental Protection Agency, Washington, DC*; Amy Dindal, *Battelle ETV Advanced Monitoring Systems Center*
- Automated Environmental Monitoring and Visualization for Optimized Ground-Water Management
 - Mark Kram, *Groundswell Technologies Inc., Santa Barbara, CA*; Ed Beighley, *San Diego State University, San Diego, CA*; Hugo Loaiciga, *University of California – Santa Barbara, Santa Barbara, CA*

12:15 p.m. – 1:15 p.m. **Complimentary Luncheon in the Exhibit Hall**

- Sponsored by The Nielsen Environmental Field School

1:15 p.m. – 3:15 p.m.

Session VII – Characterization of Ground-Water Systems

Session Moderator: Cindy Paul, US Environmental Protection Agency, NRMRL, Ada, OK



- Application of Land-Based and Low Altitude Infrared Thermography to Identify Ground-Water Discharge to Streams and to Guide Geochemical Sampling
 - Brewster Conant, Jr. and N.J. Mochnacz, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*
- Point Velocity Probes (PVPs) From the Drawing Board to the Field
 - J.F. Devlin, *University of Kansas, Department of Geology, Lawrence, KS*
- Circumventing Sand-Packed Drainage Complication in Determining Hydraulic Conductivity from Monitoring Wells with Partially Submerged Screens
 - Gary Robbins and Alejandra T. Aragon-Jose, *University of Connecticut, Department of Natural Resources and the Environment, Storrs, CT*
- Development of a Hydraulic Conductivity Estimate for the Hydraulic Profiling Tool (HPT)
 - Wes McCall and Thomas M. Christy, *Geoprobe Systems, Salina, KS*

3:15 p.m. – 3:30 p.m. Refreshment Break

3:30 p.m. – 5:30 p.m.

Session VIII – Characterization & Sampling of Ground-Water Systems

Session Moderator: Sandy Britt, ProHydro Inc., Fairport, NY

- Evaluating the Hydraulic Properties of Shallow First-Order Alluvial Systems and the Aquifer Diurnal Water-Level Fluctuations at Different Vegetation Sites in Hag Creek, Whitetail Basin, Southwestern Montana
 - Willis Weight, *Carroll College, Department of Mathematics, Engineering & Computer Science, Helena, MT*; Kevin Chandler, *Absorake, MT*; Clayton Marlowe, *Montana State University, Department of Animal and Range Sciences*
- Ground-Water Discharge From Riparian Zones and Preferential Pathways: Implications for Buffer-Strip Widths to Protect Surface Water
 - Mark K. Waldick, Brewster Conant Jr., and David L Rudolph, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*
- Ground-Water Tracing: Innovative Uses for Environmental Site Characterization
 - Shiloh Kirkland and Tom Aley, *Ozark Underground Laboratory, Protem, MO*
- Results from a Recent Field Demonstration at the Former McClellan AFB, Comparing the Snap Sampler, Dialysis Sampler and Low-Flow Purging and Sampling
 - Louise V. Parker, *U.S. Army Corps of Engineers, ERDC-CRREL, Hanover, NH*

5:30 p.m. – 7:30 p.m.

Complimentary Socializer in the Exhibit Hall

- Sponsored by The Nielsen Environmental Field School

Thursday, January 14, 2010

Conference Hall (Salons F & G)

8:00 a.m. – 10:00 a.m.

Session IX – Ground-Water Sampling

Session Moderator: Louise V. Parker, US Army Corps of Engineers CRREL, Hanover, NH

- Well Purging, Travel Times and Discharge Concentrations: Where the Water Comes From and When it Arrives
 - Sanford L. Britt, *ProHydro Inc., Fairport, NY*; James Martin-Hayden, *University of Toledo, Dept of Geology, Toledo, OH*; Mitch Plummer, *Idaho National Laboratory, Idaho Falls, ID*; Louise Parker, *US Army Corps of Engineers, CRREL, Hanover, NH*
- Rigid Porous Polyethylene (RPP) Passive-Diffusion Samplers – Case Studies and Comparisons with Conventional Sampling Techniques
 - Mark Wilson and Dee O'Neill, *Columbia Analytical Services, Rochester, NY*
- Passive Ground-Water Sampling and Small-Diameter Direct Push Wells: Does Size Matter?
 - Kent Cordry, *GeoInsight Inc., Las Cruces, NM*
- Going Green: Reducing the Environmental and Monetary Footprint of Ground-Water Sampling
 - Toni Mehraban, Stacey Arens, Paula Gellner, Jennifer Miller and Hhan Olsen, *MWH Americas, Salt Lake City, UT*; Barbara Hall and Britt Grunewald, *Hill Air Force Base, Salt Lake City, UT*

10:00 a.m. – 10:15 a.m. Refreshment Break

10:15 a.m. – 12:15 p.m.

Session X – Characterization of Ground-Water Systems

Session Moderator: Gillian L. Nielsen, Nielsen Environmental Field School, Las Cruces, NM

- The Importance of Properly Developing Ground-Water Monitoring Wells
 - Thomas Kwader, *URS Corp., Tallahassee, FL*



- Comparison of Hydraulic Conductivity Determinations in Direct-Push Monitoring Wells and Co-Located Conventional Monitoring Wells
 - Louise V. Parker and Nathan Mulherin, *US Army Corps of Engineers, CRREL, Hanover, NH*; Wes McCall, *Geoprobe Systems, Salina, KS*
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- Rapid Toxicity Assessments (RTAs) to Optimize Water-Quality Testing Budgets
 - Bryan Bjorndal, *Assure Controls Inc., Vista, CA*
- Benefits of Auditing Field Activities
 - Linda E. Hoffman, *HSW Engineering Inc., Tampa, FL*

12:15 p.m. – 1:15 p.m. Lunch Break

1:15 p.m. – 2:45 p.m.
 Session XI – Vapor Intrusion

Session Moderator: Todd McAlary, Geosyntec Consultants Inc., Guelph, ON

- Practical Guidelines for Vapor Intrusion Studies
 - Steven D. Folsom, *HSA Engineers & Scientists, Tampa, FL*
- Quantitative Passive Sampling for Vapor Intrusion Assessment – Recent Developments to Improve Quantitation and Reduce the Costs of Monitoring
 - Todd A. McAlary and Hester Groenevelt, *Geosyntec Consultants, Inc., Guelph, ON*; Suresh Seethapathy and Tadeusz Gorecki, *University of Waterloo, Department of Earth Sciences, Waterloo, ON*
- A New Passive Diffusion Sampler for Improving the Calibration of Models to Evaluate Vapor Movement at UST Sites
 - Cynthia J Paul, Dominic DiGiulio, John T. Wilson and Ken Jewell, *US Environmental Protection Agency, National Risk Management Research Laboratory, Ada, OK*; John Menatti and Robin Davis, *Utah Department of Environmental Quality, Salt Lake City, UT*

2:45 p.m. – 3:00 p.m. Refreshment Break

3:00 p.m. – 5:30 p.m.
 Session XII – Characterization of Soil Systems

Session Moderator: Ramon Rivera, Adventus Americas, Inc., Titusville, FL

- Field Sampling for Site Characterization: Lessons Learned
 - Steven T. Downey, *Shaw Environment & Infrastructure, Knoxville, TN*; Kimberlie Chambers, *McTech*

- Instant Metal Mapping with Commercially Available Field-Portable GRS-XRF Systems
 - Ken Smith, Kimberley A. Russell and Jose Brum, *Innov-X Systems, Woburn, MA*
- Multi-Incremental versus Composite Grab Sample Characterization in Mountainous Terrain
 - Richard Meadows and Nick McHenry, *U.S. Army Corps of Engineers, Huntington, WV*; John Quaranta and Suzanne Belle, *West Virginia University, Morgantown, WV*
- Depth Profile Sampling for Perchlorate at the Utah Test and Training Range
 - Wayne C. Downs, *Hill Air Force Base, Salt Lake City, UT*; Karl C. Nieman, *Select Engineering Services, Layton, UT*
- Implementation of Method 8330B for Explosives Residue Characterization at the Utah Test and Training Range
 - Karl C Nieman, *Select Engineering Services, Layton, UT*; Wayne C. Downs, *Hill Air Force Base, Salt Lake City, UT*

5:30 p.m. Conference Adjourns for the Day

Friday, January 15, 2010

Conference Hall (Salons F & G)

8:00 a.m. – 10:00 a.m.

Session XIII – Monitoring for Remediation/Site Remediation Approaches

Session Moderator: Sam Williams, Geosyntec Consultants Inc., San Diego, CA

- Vadose-Zone Monitoring As a Key to Ground-Water Protection and Optimization of Remediation Strategies
 - Ofer Dahan, *Ben Gurion University, Zuckerberg Institute for Water Research, Ben Gurion, Israel*
- Evaluation of Injection Techniques in Moraine Clay with Sand Stringers, Skuldelev, Denmark
 - Joe Rossabi and John Haselow, *Redox Tech, Cary, NC*; C Christensen, C Muchitsch, C. Riis, C Layburn, C Thompson, *NIRAS*; C Terkelsen, *Capitol Region, Denmark*
- Bioremediation of Chlorinated Solvent DNAPL Using Passive Aggression
 - Sam Williams and Brian Hitchens, *Geosyntec Consultants Inc., San Diego, CA*

- In-Situ Chemical Reduction Technologies – Differentiators and Implementation
 - John Valkenburg and Ramon Rivera, *The Adventus Group, Titusville, FL*

10:00 a.m. – 10:15 a.m. Refreshment Break

10:15 a.m. – 12:15 p.m.

Session XIV – Contaminant Remediation Approaches

Session Moderator: To Be Announced

- Oxygen Issues in the Application of Reductive Dechlorination
 - Joe Rossabi, John Haselow and R. Steffan, *Redox Tech, Cary, NC*
- Hyperaccumulation of Cadmium by Soybean Plants – A Phytoremedial Approach
 - Rashimi Gurram, *Flushing, NY*
- Natural Attenuation at a Site Located in Southeastern Mexico, a Case Study
 - Alfonso Espitia C., Javier Barron S. and Adriana Roldan-Martin, *Universidad Autonoma Metropolitana-Azcapotzalco, Departamento de Energia, Azcapotzalco, Mexico*
- Cement Kiln Dust Used In-Situ for the Stabilization of Hazardous Waste
 - Paul Ruehl, *LaFarge North America, Bingham Farms, MI*

12:15 p.m. – 12:30 p.m. Conference Closing Remarks and Adjournment