The Association for Environmental Health and Sciences (AEHS) Foundation is proud to announce

The 23rd Annual International Conference on

Soil, Water, Energy, and Air

March 18-21, 2013
Mission Valley Marriott, San Diego, California

Conference Directors: Paul Kostecki, Ph.D. and Edward J. Calabrese, Ph.D., University of Massachusetts, Amherst, MA
Directors Emeriti: John Hills, Irvine Ranch Water District, Irvine, CA and Stephen Eikenberry, PC, LPC, AEHS Foundation, Amherst, MA
Welcome to the 23rd Annual International Conference on Soil, Water, Energy, and Air, March 18-21, 2013, San Diego, CA. The conference, which had its beginnings in petroleum contaminated soils supported by a few interested parties when it first began in 1990, has evolved to encompass a broad range of important contaminants in different media. It has drawn interest from around the world and has been supported by an impressive array of dedicated professionals serving on the Scientific Advisory Board and from other organizations who have provided the necessary resources. Appreciation goes out to the many Sponsors and Supporters who have generously contributed to our conferences throughout the years.

In 2010 the AEHS Foundation assumed management of the Annual International Conference on Soils, Sediments, Water, and Energy held on the campus of the University of Massachusetts, every Fall. Last October’s conference, the 28th Annual, was a tremendous success and we invite you to consider joining us next October in Amherst. Between the West Coast and East Coast conferences, the Foundation will reach over 1200 environmental professionals annually! You will continue to see subtle changes as the two conferences co-evolve taking on the best aspects of each.

We are pleased to announce the continuation of the Foundation’s online education program. The Foundation launched its first course in September 2010 and has offered several courses each semester since. We will continue to expand course offerings and are in discussion with several Universities to assign college credit to our courses. Check our website for further information.

Attendees who registered for the West Coast Conference before March 1st had the opportunity to become a member of the AEHS Foundation for the current calendar year. Members receive the International Journal of Phytoremediation, Human & Ecological Risk Assessment, or Soil and Sediment Contamination as a primary journal (as selected on your registration form). Please note that you have the option to add either or both of the other journals for a fee of $65/additional journal/year. Members will automatically receive hard copies of their journal(s) and online access (including access to back issues). Please see the Foundation website (www.aehsfoundation.org) or contact the office for details.

The AEHS Foundation is pleased to announce the continuation of the International Society of Environmental Forensics (ISEF) whose mission is to provide an international forum dedicated to the consolidation and exchange of information related to environmental forensics. The Foundation and ISEF have presented fourteen highly successful workshops on environmental forensics over the past ten years. Members of ISEF receive the journal, Environmental Forensics, discounts to ISEF workshops, and other unique benefits. Please check our website for membership information and future workshop postings.

The Foundation and Society are committed to serving its membership and providing an essential forum for ideas, discussion, and debate as well as solutions to a wide array of environmental problems. I hope you find that this year’s conference is one of the ways we fulfill this goal.

Sincerely,

Paul Kostecki, Ph.D., President

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CONFERENCE at a GLANCE

Conference map is located on back of program

MONDAY, MARCH 18
Registration: 7:00am – 3:00pm, Foyer
Morning Break: 10:00am – 10:30am, Foyer
Afternoon Break: 3:00pm – 3:30pm, Foyer

WORKSHOPS

Workshop 1: 8:00am – 12:00pm, Geochemical Analyses of Metals in Environmental Media, Santa Fe 3
Workshop 2: 1:00pm – 4:00pm, Utilization of Stable Isotopes in Environmental and Forensic Geochemistry, Studies, Salon H
Workshop 3: 1:00pm – 5:00pm, Classic and Emerging Environmental Forensics Techniques and Applications, Salon G
Workshop 4: 1:00pm – 6:00pm, Groundwater Cleanup Program Overview, Low-Threat UST Case Closure Policy, and SWRCB LUFT Guidance Manual, Sierra 5
Workshop 5: 2:00pm-4:00pm, Automated and Efficient Environmental Monitoring and Project Management Using the Web, Sierra 6

EPA Vapor Intrusion Stakeholder Forum, 1:00pm – 5:00pm, Pavilion

TUESDAY, MARCH 19
Registration: 7:00am – 7:00pm, Foyer
Exhibit Hall Hours: 9:00am – 7:00pm, Exhibit Hall, Salons A-F
Morning Break: 10:00am – 10:30am, Exhibit Hall, Salons A-F
Afternoon Break: 3:00pm – 3:30pm, Exhibit Hall, Salons A-F

Luncheon: 12:00pm – 1:30pm, Cabrillo
Lunch Speaker: "Nuclear Devices to Ceramic Beads - Geologic Formation Fracturing - A review of public attitudes, public policy formulation, and regulation of hydraulic fracturing" Dave Freudenthal, Cowell & Moring, Cheyenne, WY

MORNING PLATFORM SESSIONS 8:00am – 12:00pm
Session 1: Environmental Forensics, Sierra 5
Session 2: Bioremediation, Salon G

AFTERNOON PLATFORM SESSIONS 1:30pm – 5:30pm
Session 1: Hydraulic Fracturing – Environmental Implications, Sierra 5
Session 2a: Chemical Analysis, Salon G
Session 2b: NAPL, Salon G
Poster Presentations & Social: 3:00pm – 5:00pm, Santa Fe 3-4 and Sunroom
Welcome Reception/Wine and Cheese Social: 5:00pm – 7:00pm, Exhibit Hall, Salons A-F
(Free to all registered conference attendees)

WORKSHOPS
Workshop 6: 8:30am – 5:30pm, Looking Beyond Natural Variation in Vapor Intrusion, Pavilion
Workshop 7: 6:30pm – 9:30pm, Recent Developments in the Evaluation of the Vapor Intrusion at Petroleum Release Sites, Sierra 5
Workshop 8: 6:30pm – 9:30pm, Environmental Fate of Hydrocarbons in Soils and Groundwater, Salon G

WEDNESDAY, MARCH 20
Registration: 7:00am – 7:00pm, Foyer
Exhibit Hall Hours: 9:00am – 7:00pm, Exhibit Hall, Salons A-F
Morning Break: 10:00am – 10:30am, Exhibit Hall, Salons A-F
Afternoon Break: 3:00pm – 3:30pm, Exhibit Hall, Salons A-F

Luncheon: 12:00pm – 1:30pm, Cabrillo
Lunch Speaker: "Sustainability and Competitiveness: an Insurer's Perspective" Lindene E. Patton, Chief Climate Product Officer, Zurich Insurance Group Ltd., Washington, DC

MORNING PLATFORM SESSIONS 8:00am – 12:00pm
Session 1: Assessing and Managing Human Health Risks in the U.S., Sierra 5
Session 2: Regulatory Permitting for Groundwater In-Situ Remediation, Salon G
Session 3: Petroleum Hydrocarbon Vapor Intrusion I, Pavilion

AFTERNOON PLATFORM SESSIONS 1:30 pm – 5:30 pm
Session 1: Risk Assessment/Risk Management, Sierra 5
Session 2: Emerging Contaminants, Salon G
Session 3: Petroleum Hydrocarbon Vapor Intrusion II, Pavilion
Poster Presentations & Social: 3:00pm – 5:00pm, Santa Fe 3-4 and Sunroom
Evening Social: 5:00pm – 7:00pm, Exhibit Hall, Salons A-F
(Free to all registered conference attendees)

THURSDAY, MARCH 21
Registration: 7:00am – 12:00pm, Foyer
Exhibit Hall Hours: 9:00am – 12:00pm, Exhibit Hall, Salons A-F
Morning Break: 10:00am – 10:30am, Exhibit Hall, Salons A-F

MORNING PLATFORM SESSIONS 8:00am – 12:00pm
Session 1: Innovative Remedial Technologies, Sierra 5
Session 2: Remediation, Santa Fe 3
Session 3: Vapor Intrusion, Pavilion
Session 4: Sustainability, Salon G

DRAWING: Enter to win a free registration to one of our next two conferences! Entry and drawing will take place during each of the four Thursday morning sessions.

WINNERS IN EVERY SESSION! Must be present to win. Several second place winners will receive free 2013 AEHS Foundation Membership! Drawings will take place at the conclusion of each session.

GENERAL INFORMATION

Exhibit Hours (Ballroom Salons A-F/Foyer)
Tuesday, March 19 .............................................. 9:00 am – 7:00 pm
Wednesday, March 20 ..................................... 9:00 am – 7:00 pm
Thursday, March 21 ........................................... 9:00 am – 12:00 pm

Poster Presentations (Santa Fe 3-4 and Sunroom)
Tuesday, March 19 .............................................. 3:00 pm – 5:00 pm
Wednesday, March 20 ..................................... 3:00 pm – 5:00 pm

Socials
Tuesday, March 19 .............................................. 3:30 pm – 5:00 pm
Accompanies Poster Session (Sunroom/Patio)
Tuesday, March 19 .............................................. 5:00 pm – 7:00 pm
Wine/welcome Reception (Ballroom Salons A-F)
Wednesday, March 20 ..................................... 3:30 pm – 5:00 pm
Accompanies Poster Session (Sunroom/Patio)
Wednesday, March 20 ..................................... 5:00 pm – 7:00 pm
Evening Social (Ballroom Salons A-F)

Exhibitors (See floor plan handout for booth locations)

Accelerated Remediation Technologies
Accutest Laboratories
Antea Group
Beacon Environmental Services
Blaine Tech Services
Cardno ERI
Cascade Drilling
Cox-Colvin & Associates
DEXISIL Corporation
EMSL Analytical
EOS Remediation
ETEC
Eurofins Air Toxics
FMC Environmental Solutions
Forensic Analytical Laboratories
FRx, Inc.
Geo-Cleanse International
Geotech Environmental Equipment
Graus Chemicals
Groundwater & Environmental Services (GES)
H&P Mobile GeoChemistry
Hepure Technologies
HydroAnalysis
In-Situ
Ion Science
JRW Bioremediation
Kerfoot Technologies/BISCO
Environmental
Microseeps
Modern Water
National EWP
PerkinElmer
Picarro
Premier Magnesia
Regenesis
Remediation Partners
RESTEK Corporation
Stantec
Technical Associates
Terra Vapor
True Blue Technologies
USEPA / TIFSD
USEPA Office of Research and Development
Vironex
Wayne Perry
Willowstick Technologies
Mr. Paul Rakowski, P.E. is a Board Certified Environmental Engineer (BCEE) (American Academy of Environmental Engineers and Scientists) with more than 38 years of professional engineering experience in program, project management, and technical support supporting including the development of environmental policies, guidance documents, predominately to Navy and Marine Corps installations and environmental programs. He is currently serving as Deputy Program Manager for AGVQ Environmental Services’ $100M Small Business Remedial Action Contract awarded by the Naval Facilities Engineering Command (NAVFAC), Atlantic in Norfolk, VA. He retired from a civil service position with the Navy in 2007 where he was responsible for the Navy’s Environmental Restoration Program at NAVFAC Atlantic since the program’s creation in 1978.

In his years with the Navy, he lead a team of engineers and scientists which conducted investigations and remedial actions relative to past hazardous waste and munitions sites, and has worked the full range of environmental compliance projects in addition to waste site cleanup, including: Providing technical consulting services to Navy/Marine Corps installations, overseeing the technical designs and implementation of management strategies, assisting in developing and implementing the Navy’s first On-Scene Coordinator training course for oil and hazardous substance incident response, managing environmental response, safety, health, and waste disposal, implementing remedial actions at major POL contaminated sites, and implementing an innovative steam heating remedial action. In the final 5 years of his Navy career, he managed more than $180M in waste site restoration cleanup projects including $40M for UXO/munitions cleanup and overall program management for some 600 waste sites at 16 Navy and Marine Corps installations.

Starting in 2004, he provided oversight, financial management, and business process implementation for Navy cleanup programs across the continental US. Paul served as the Navy’s technical advisor to a U.S. Special Negotiator for environmental cleanup issues at former Navy installations in Canada and for similar cleanup negotiations with the governments of Bermuda & Iceland. Mr. Rakowski has a B.S. in Civil Engineering from Newark College of Engineering, a Masters of Engineering in Civil Engineering from Old Dominion University, and is a member of the American Society of Civil Engineers, the National Engineering Honor Society -Tau Beta Pi and the Civil Engineering Honor Society - Chi Epsilon. He has been listed in “Who’s Who” in Environmental Engineering, a Masters of Engineering in Civil Engineering from Old Dominion University, and is a member of the American Society of Civil Engineers, the National Engineering Honor Society - Tau Beta Pi and the Civil Engineering Honor Society - Chi Epsilon. He has been listed in “Who’s Who” in Environmental Engineering, as well as Marquis “Who’s Who in the South & Southwest” and “Who’s Who of Emerging Leaders in America”.

Paul Hadley has been with the California Department of Toxic Substances Control (DTSC) for his entire 30-plus-year career. Some of his accomplishments include:
- Co-author, California Site Mitigation Decision Tree Manual (1986)
- Lead author of the article “Where’s the Benzene” (1991, published in Ground Water – a precursor to the Lawrence Livermore Fuel Tank Study)
- Lead author for “How Hot is that Spot?” (1992 – published in one of the first volumes of the Journal of Soil Contamination)
- Interstate Technology & Regulatory Council (ITRC) (1995 to present) - Founding member, team leader, Board Member, leader of ITRC’s first classroom training class (Natural Attenuation of Chlorinated Solvents), trainer on first Internet-based training class (also on Natural Attenuation of Chlorinated Solvents)
- Sustainable Remediation Forum (SURF) (2006 to present) - Founding member, co-leader of SURF’s first major technical initiative as well as co-leader or co-author of subsequent efforts
- Frequent speaker, author and panelist on cutting-edge – and controversial – topics such as natural attenuation, risk assessment, and sustainable remediation.

Speaker, panel leader, poster judge, and for the last several years has been a member of the Science Advisory Board for AEHS’ West Coast Conference.

Announcing the 4th Annual AEHS Foundation Achievement Awards

The Annual International Conference on Soil, Water, Energy, and Air is pleased to announce the recipients of the AEHS Foundation Achievement Award. This award is presented to individuals or organizations that have shown significant contributions to the field as well as outstanding environmental stewardship. This year’s winners are Paul Rakowski, AGVIQ, Norfolk, VA and Paul Hadley, CA EPA, DTSC, Sacramento, CA. Awards will be presented at the Welcome Reception on Tuesday, March 19th.

Mr. Paul Rakowski

Paul Hadley
Looking Beyond Natural Variation in Vapor Intrusion: Understanding, Controlling, and Addressing Site Variables for Improved Practices and Implementation of Guidance

The U.S. Environmental Protection Agency’s (EPA’s) Offices of Research and Development (ORD) and Solid Waste and Emergency Response (OSWER) continue to collaborate on providing technical assistance and support to EPA regional offices, other federal agencies, state regulators, and other interested parties who are managing risks associated with indoor air vapor intrusion from subsurface contaminant sources. This support comes from research studies, demonstration projects, field studies, commercial cleanups, and data analyses. The science of determining, characterizing, and managing the risks resulting from contaminated subsurface sources continues to evolve, and much remains to be done in assisting regulators, consultants, and other parties to make sound and confident decisions when assessing and mitigating the vapor intrusion pathway. As part of this effort, EPA will hold a one-day workshop and half-day stakeholder forum that will provide information on accounting for and controlling site variables when making decisions at VI sites.

The one-day workshop will focus on recent research findings and potential advances associated with:

1) characterizing temporal and spatial variability, and sources of this variability, including results of field study work to control and monitor vapor intrusion at the Indianapolis Duplex (EPA ORD), Sun Devil Manor (ASU and DOD), and other locations.

2) approaches and practices for dealing with variability when assessing and mitigating vapor intrusion; and

3) overcoming technical challenges to implementing federal and state guidance.

LUNCHEON SPEAKER

Tuesday, March 19, 2013
12:00pm – 1:30pm, Cabrillo
Nuclear Devices to Ceramic Beads – Geologic Formation Fracturing – A review of public attitudes, public policy formulation, and regulation of hydraulic fracturing

Dave Freudenthal, Senior Counsel, Crowell & Moring, Cheyenne, WY

Nuclear devices to ceramic beads pretty well covers the spectrum of proposals from the last 50 years to free natural gas and petroleum from non-porous formations. Today, hydraulic fracturing and horizontal drilling have proven to be very effective and the technologies of choice. However, they have stirred more emotion than reason among the public and regulators, particularly in non-traditional oil and gas producing areas. Wyoming, a state with a long history of oil and gas production, was the first state to adopt regulations particularly focused on hydraulic fracturing. Their lessons learned may be instructive for the ever expanding cottage industry of consultants, lawyers, regulators and companies, all claiming to be newly minted experts in hydraulic fracturing.

ABOUT THE SPEAKER:

Dave Freudenthal, a Wyoming native, served two terms as Wyoming’s 31st Governor. Wyoming was the first state to adopt meaningful regulation of hydraulic fracturing. It is also the leader in establishing a legal framework for carbon capture and sequestration. The State remains a leader in the funding of research and demonstration in this area. At the same time, under Freudenthal, significant effort was devoted to the Wyoming Pipeline Authority and the Wyoming Infrastructure Authority whose missions are to increase the pipeline capacity and electric transmission infrastructure to move Wyoming’s energy to national markets. Wyoming’s natural gas pipeline capacity was doubled during Freudenthal’s term of office. Freudenthal’s leadership on natural resource development issues led to his service as Chairman of the Western Governors Association and Chairman of the Interstate Oil and Gas Compact Commission. Freudenthal graduated from Amherst College (Amherst, MA) in 1973 and returned to Wyoming to take a position as an economist with the State. Governor Ed Herschler appointed him State Planning Coordinator in 1975. After graduating from the University of Wyoming College of Law in 1980, Freudenthal opened his own one-person law firm in Cheyenne. The firm grew into a general practice firm representing individuals and business. In 1994, he was appointed U.S. Attorney for the District of Wyoming.

Environmental Forensics

Moderator: Ioana Petrisor, Cardno ENTRIX, Lake Forest, CA

9:00 Innovative Approaches in Environmental Forensics: Petroleum Applications

Ioana Petrisor, Cardno ENTRIX, Lake Forest, CA

9:30 Use of Plants as Passive Samplers for Volatile Organic Compounds (VOCs) in Indoor Environments

Todd Wetzel and William Doucette, Utah State University, Logan, UT

10:00 Break

10:30 Using 1,4 Dioxane as a Forensic Tool at Solvent Sites

Adam Love, Johnson Wright, Inc., Lafayette, CA

11:00 Chlorine Isotope CSIA on GC-qMS: A Promising Approach for Chlorinated Solvents Release Site Investigation

Yi Wang, ZymaX Forensics Isotope, Escondido, CA

11:30 Forensic Identification of Contaminant Sources in Environmental Samples using Advanced Microscope Imaging and Microspectroscopy

Stephen Wall, Jeff Wagner, and Sutapa Ghosal, California Department of Public Health, Richmond, CA

Bioremediation

Moderator: Lewis Hsu, SSC-PAC, San Diego, CA

8:00 Quantification of Anaerobic Decay Rate Constant at an MGP Site

Adam Chen, Joe Chittel, Amanda Haugen and Joan Gonzalez, Burns & McDonnell Engineering, Inc., Downers Grove, IL; Amine Dahmani, Spectrum Analytical, Agawam, MA

8:30 Performance of Enhanced Aerobic/Anaerobic Biodegradation of a Fuel-Impacted Aquifer via Groundwater Recirculation

Brian Timmins, ETEC, LLC, Portland, OR

9:00 The Implementation of Enhanced In-Situ Bioremediation of Groundwater (34 to 58 ft. Below Ground Surface) Using KB-1© Microbial Culture to Degrade Chlorinated Volatile Organic Compounds to Innocuous End Products

Nicholas Godinez and Christopher Gale, Geosyntec Consultants, San Diego, CA

9:30 Best Practices for Enhanced Aerobic Biodegradation Applications at MTBE/TBA Impacted Service Station Sites

Jack Sheldon, Antea Group, West Des Moines, IA; Craig Sandefur, Regenesis, San Clemente, CA

10:00 Break

10:30 Use of Slow-Release Substrates to Control Matrix Diffusion of Chlorinated Solvents from Low Permeability Zones

Kitty Hiortdahl, Brad Elkins, Ed Alperin and Stephen Richardson, EOS Remediation, LLC, Raleigh, NC

11:00 Remediation of MTBE & TBA in Groundwater Using a Fluidized Bed Bioreactor

Joseph O’Connell, Cardno ERI, Lake Forest, CA

11:30 Enhanced Bioremediation of Chlorinated Solvents in the Vadose Zone

Brad Elkins, EOS Remediation, LLC, Raleigh, NC; Brian Riha, Brian Looney, Jay Noonkester, W. Keith Hyde, and Richard Walker, Savannah River National Laboratory, Aiken, SC; Stephen Richardson, Solution-IES, Raleigh, NC
Session 1: 1:30pm – 5:30pm, Sierra 5
Hydraulic Fracturing - Environmental Implications
Moderator: Sam Williams, GeoSyntec Consultants, San Diego, CA

1:30 Introduction to Hydraulic Fracturing: What’s with all the Hype and Hysteria?
Sam Williams, GeoSyntec Consultants, San Diego, CA

2:00 Regulatory Perspective of Hydraulic Fracturing
Robert Habel, California Division of Oil, Gas and Geothermal Resources, Sacramento, CA

2:30 Hydraulic Fracturing Issues and Research Needs for the Water Community
Shonnie Cline, Water Research Foundation, Denver, CO

3:00 Break

3:30 Groundwater Monitoring for Hydraulic Fracturing Processes
Mark Zeko, Environmental Engineering and Contracting, Inc. (EEC), Santa Ana, CA

4:00 Modeling and Monitoring Hydraulic Fracture Stimulation
James Melrose, Halliburton, Bakersfield, CA

4:30 Hydraulic Fracturing and Community Health
Elizabeth Miesner and Linda Hall, ENVIRON International Corporation, San Francisco, CA; Angela Harris, ENVIRON International Corporation, Little Rock, AR; Deborah Kaden, ENVIRON International Corporation, Boston, MA

5:00 Legal Disputes over Hydraulic Fracturing
Carol Wood, King & Spalding, Houston, TX

Session 2a: 1:30pm – 4:00pm, Salon G
Chemical Analysis
Moderator: Richard Vogl, SAIC Energy, Environment, & Infrastructure, Brea, CA

1:30 Determination of Mercury in Environmental Samples
Anthony Rattonetti, Mike Salvato, Grant Mays, Robert Wellbrock, Mike Nguyen and Steven Z. Wen, Southeast Laboratory San Francisco Public Utilities Commission, San Francisco, CA

2:00 Chromium: Is it Chromium III or Chromium VI? Are you Sure?
Robert Wellbrock and Anthony Rattonetti, Southeast Laboratory San Francisco Public Utilities Commission, San Francisco, CA

2:30 Discussion of the “Laboratory Analysis and Methods” Chapter of the CA State Water Board’s 2012 LUFT Manual
Dawn Zemo, Zemo & Associates, Incline Village, NV

3:00 Break

3:30 Extracting the Truth: A Comparative Study on the Preparation of Sediment Samples for Analysis of SVOCs
Edric Caballero, Advanced Technology Laboratories, Signal Hill, CA

Session 2b: 4:00pm – 5:30pm, Salon G
NAPL
Moderator: Richard Vogl, SAIC Energy, Environment, & Infrastructure, Brea, CA

4:00 Is Ten Feet of Free Product a Problem?
Rick Ahlers, ARCADIS U.S., Irvine, CA

4:30 Comparison of Two Vacuum Enhanced LNAPL Recovery Systems under the EAR Account Program
Carl Lenker and Leo Rebele, Gannett Fleming, Irvine, CA; Arul Ayyaswami, Gannett Fleming, Mt. Laurel, NJ

5:00 LNAPL Investigation and Behavior in a Saprolite Aquifer
Christopher Mulry, Groundwater & Environmental Services, Inc. (GES), Crofton, MD

Workshop 7 6:30pm – 9:30pm, Sierra 5
Recent Developments in the Evaluation of the Vapor Intrusion at Petroleum Release Sites
Robin Davis, Utah DEQ, Salt Lake City, UT
George DeVauvill, Shell Global Solutions, Houston, TX
Blayne Hartman, Independent Consultant, Solano Beach, CA
Todd Ririe, BP, La Palma, CA

This workshop will focus on presenting updates to the assessment and evaluation of vapor intrusion from subsurface sources into buildings from petroleum release sites. Topics to be covered include: 1) Conceptual site model for petroleum vapor intrusion (PVI) and the differences between petroleum and chlorinated solvent vapor intrusion; 2) Types and characteristics of sites where PVI is an issue; 3) The API Biovapor model as a tool to evaluate PVI; 4) Update on exclusion criteria that can be used to screen out sites from PVI; 5) Sampling and analytical methods for PVI, and 6) An update on a number of new guidance documents from EPA OUST, CA, and ITRC and their impact on future PVI investigations.

Workshop 8 6:30pm – 9:30pm, Salon G
Environmental Fate of Hydrocarbons in Soils and Groundwater
James Dragun, The Dragun Corporation, Farmington Hills, MI

This workshop covers predicting bulk hydrocarbons migration, the extent of adsorption of organic chemicals, chemical volatility in soil, chemical reaction rates for organic chemicals in soil, and biodegradation rates of organic chemicals in soils. The information presented is in the context of site remediation, siting disposal facilities, and analyzing potential chemical releases as part of the auditing/closure of industrial facilities. Dr. Dragun's book, "The Soil Chemistry of Hazardous Materials, Second Edition," will be provided to registered participants.
The following posters will be presented on Tuesday only
Santa Fe 3-4 and Sunroom

Impact of Municipal and Industrial Waste on Heavy Metals Distribution in Sandy Soils
Saud Al Oud, King Saud University, Riyadh, Saudi Arabia

Spatial and Temporal Patterns of Road Traffic Noise Pollution in Riyadh, Saudi Arabia
Abdulaziz Al-Jasser and Saad Mogren, King Saud University, Riyadh, Saudi Arabia

Modeling of Contaminant Transport under Fluctuating Water Table Condition Using COMSOL Multiphysics® Platform
Mohammad Al Suwaiyan and Salihu Lukman, KFUPM, Dhafran, Saudi Arabia

Extraction and Efficiency Study from Arseniate (AsO43) in Water Samples with Humic Acid-Polyipirrol-Polyetherlyengycol Modified Electrode
Monica Antilen, Miguel Araus, Juan Francisco Armijo and Maria Angelica del Valle, Pontificia Universidad Catolica de Chile, Santiago, Chile; Carmen Pizarro and Mauricio Escudey, Universidad de Santiago de Chile, Santiago, Chile

Effect of Humic Acids on Copper-Induced Toxicity on Catalytic Activity of Cytosolic Glutathione-S-Transferases
Monica Antilen, Victor Maldonado and Maria Angelica del Valle, Pontificia Universidad Catolica de Chile, Santiago, Chile; Carmen Pizarro and Mauricio Escudey, Universidad de Santiago de Chile

Mercury Extraction Using a Modified SS/Pedot Electrode: Application to Decrease Mercury-Induced Toxicity on Catalytic Activity of GSH-S-Transferases
Mónica Antilen, Gean Carlo Artega, Maria Angelica del Valle and Mauro Fanudez, Pontificia Universidad Catolica de Chile, Santiago, Chile

Biological Treatment of PCB-Contaminated Soil Inoculated with Rhizosphere Organisms and Planted with Chromolaena odorata (L) King & Robinson
Harrison Atagana, University of South Africa, Pretoria, Gauteng, South Africa

Trace Metal Contents of Fertilizers Marketed in Lebanon
Isam Bashour, Rite Waikim and Nay Dia, American University of Beirut, Beirut, Lebanon

Biodegradation DDT in a Long-Term Contaminated Soil through Biostimulation and Surfactant Addition
Bibiana Betancur-Corredor, Universidad Nacional de Colombia Sede Medellín, Medellín, Antioquia, Colombia; Gustavo Penuella-Mesa, Universidad de Antioquia, Antioquia, Colombia, Santiago Cardona-Gallo, Universidad Nacional de Colombia Sede Medellín, Antioquia, Colombia

Assessment of Selected Chemical Parameters in Groundwater of Hawskesbore Chill
Craig Bowler, Environmental Monitoring & Risk Assessment Division, Freeport, Bahamas

Multiple Lines of Evidence in Assessment of Potential Indoor Air Vapor Intrusion at an Airport Maintenance Center – A Case Study
Mark Bowland, ERM, Sacramento, CA; Dan Tisoncik, United Airlines, Chicago, IL; Bruce Neuschaefer, ERM, Irvine, CA; Debbie Lind and Jim Warner, ERM, Walnut Creek, CA

Richard Cartwright, MECX, LP, East Amherst, NY

In-Situ Chemical Oxidation (ISCO) for Reducing Emissions from Lower Permeability Zones to Groundwater Flowing through More Permeable Zones
Bridget Cavanagh and Paul Johnson, Arizona State University, Tempe, AZ

A Stochastic Fuzzy Analytical Hierarchy Process for Ballast Water Management
Bing Chen, Liang Jing and Baiyu Zhang, Memorial University of Newfoundland, St. John's, NL, Canada

Design and Construction of a Vapor Mitigation System at a Project Site
John Conaway, Terra-Petra, Los Angeles, CA

Ambient Concentrations of Polycyclic Aromatic Hydrocarbons in Soil, Fullerton, California
Walter Crane, Ninny & Moore, Irvine, CA

CFC-113 Degradation in the Presence of Elevated Sulfate
Mark Davidson, Geosyntec Consultants, Pasadena, CA; Sam Williams, Geosyntec Consultants, San Diego, CA; Mike Reardon, Geosyntec Consultants, Huntington Beach, CA

Optimization of Biodiesel Production from Waste Frying Oil Using Response Surface Methodology and Investigation of Correlations for Changes in Basic Properties of Bio-Petro-Diesel Blends
Nour El-Gendy, Samiha Deriase and Doaa Osman, Egyptian Petroleum Research Institute, Cairo, Egypt

Monitoring the Bio-attenuation of Petroleum Hydrocarbon Vapors: Microbial Population Profiles vs. CO2 Profiles
Elly Escobar, Paul Dahlen and Paul Johnson, Arizona State University, Tempe, AZ

Effect of Ash from Forest Fires on Leaching in Volcanic Soils
Mauricio Escudey, Carmen Pizarro, Juan Enrique Foerster and Nicolas Arancibia, Universidad de Santiago de Chile, Santiago, Chile; Monica Antilen, Pontificia Universidad Catolica de Chile, Santiago, Chile

Changes of Heavy Metals in Marine Sediment Resulting from Bioremediation
Herbert Fang, The University of Hong Kong, Hong Kong, China

Multiple Remedies for Rapid In-Situ Remediation of Chlorinated Solvents - Results and Lessons Learned
Christopher Gale, Brian Hitchens and Sam Williams, Geosyntec Consultants, San Diego, CA; Doug Riddle, RELLC, Mountain Center, CA

PCBs in the Urban Environment: Implications for Long-Term Sustainability of Low-Threshold Sediment Remediation
Brian Hitchens and Sam Williams, Geosyntec Consultants, San Diego, CA

Analysis of Solid and Fiber Brush Graphite and Carbon Cloth as Cathode Materials for Benthic Microbial Fuel Cells
Lewis Hsu, Adriane Wotawa-Bergen, Jeffrey Kagan, Richard Bell and Y. Meriah Arias-Thode, SSC-PAC, San Diego, CA; Ryan Thacher, USC, Los Angeles, CA

Phytoremediation of Escravos (Nigeria) Light Crude Oil Contaminated Soil Using Legumes
Maryam Lami Ibrahim, Shuaibu Bala Manga and Lawal S. Bilbis, Usman Danfodiyo University, Sokoto, Sokoto Nigeria; Udeeme Josiah J. Ijah, Federal University of Technology, Niger, Nigeria

Biodegradation of PAH Mixtures Released from DNAPL-Coal Tar Methan Isleyen, Sakarya University, Sakarya, Turkey; Pinar Sevim, Duzcze University, Duzcze, Turkey; Eren Karakavuz, Bulent Ecctiv University, Zonguldak, Turkey

Utilizing HydroDaVE™ to Manage Groundwater Data for the Hinkley Chromium Plume, San Bernardino County, California
Randall Morlan, California State University Fullerton, Highland, CA

Biodegradation Kinetics of Petroleum Derivatives in Wastewater through Respirometry Data Modeling
Renato Nallin Montagnolli, Paulo Renato Matos Lopes, Ivo Shodji Tamada, Jaqueline Matos Cruz, Mariana Lopes de Sousa and Ederio Dino Bidioia, Sao Paulo State University (UNESP), Rio Claro, Brazil

In-Situ Remediation of Arsenic Contaminated Soils using Ochre
Joseph Abah Olimah, Elizabeth Jane Shaw, and Mark E. Hodson, The University of Reading, Reading, United Kingdom

Pilot-Scale Washing of Metal Contaminated Garden Soil using EDTA
David Voglar, University of Ljubljana, Ljubljana, Slovenia

Screening and Cloning the Heavy Metal Pollutants Resistant Genes of Avicennia Marina by Suppression Subtractive Hybridization
JiCheng Zhang, Xiamen University, Xiamen, People's Republic of China
Session 1: 9:00am – 12:00pm, Sierra 5
Assessing and Managing Human Health Risks in the US – Striking a Balance Between Costs, Benefits, Efficacy and Unintended Consequences
Moderators: Michael Ruby, Integral Consulting, Louisville, CO
Paul Hadley, CA EPA, DTSC, Sacramento, CA

A number of U.S. regulations are designed to reduce and manage risks to human health and the environment, using human health risk assessment (HHRA) as an integral tool to inform risk management decisions. Is the risk assessment process effective or broken? Is it truly informative or burdened with bureaucratic steps and default assumptions that make it unwieldy and prescriptive? Do improvements in the science get incorporated at the regulatory level? This special session staffed by nationally renowned practitioners and risk managers will explore HHRA as currently practiced and discuss improvements that could be made to increase its transparency and efficacy. Issues such as the use of site-specific exposure and biomonitoring data, evaluations of background conditions, precautionary toxicological evaluations, weight-of-evidence approaches, means for addressing uncertainty, and upcoming legal and legislative precedents will be discussed. The session will involve each panelist expressing their views on this topic, followed by a lively panel discussion.

Speakers:
Bruce Macler, Toxicologist, U.S. EPA Region 9, Drinking Water Program, San Francisco, CA
Debra Taylor, Toxicologist, CA EPA, DTSC, Sacramento, CA
Lenny Siegel, Executive Director, Center for Public Environmental Oversight, Mountain View, CA
Renae Magaw, Sr. Staff Toxicologist, Chevron Energy Technology Co., San Ramon, CA
Nancy Beck, Senior Director- Regulatory Science Policy, American Chemistry Council, Washington DC (invited)
Kevin Mayer, Partner, Crowell & Moring LLP, Los Angeles, CA

Session 2: 9:00am – 12:00pm, Salon G
Regulatory Permitting For Groundwater In-Situ Remediation
Moderator: Stephen Koenigsberg, Brown and Caldwell, Irvine, CA

The format of this session will be a panel discussion. Each speaker will present for 20 minutes, followed by a group discussion from 11:30am – 12:00pm

What Hunting, Fishing, and Remediation Have in Common (Part II)
Sam Williams and Brian Hitchens, GeoSyntec Consultants, San Diego, CA

In-Situ Remediation Chemistry and Materials
Ben Mork, Regenesis, San Clemente, CA

Groundwater In-Situ Remediation: Injection Permit of Waste Discharge Requirements (WDRs) in the Los Angeles Region
Yue Rong, California Regional Water Quality Control Board, Los Angeles, CA

Summary of the General Waste Discharge Requirements for In-situ Groundwater Remediation Project
Craig Carlisle and Roger Mitchell, California Regional Water Quality Control Board, San Diego, CA

An Overview of Waste Discharge Requirements for In-situ Remediation of Groundwater in the Santa Ana Region
Nick Amini, California Regional Water Quality Control Board, Riverside, CA

A Practitioners’ Perspective of Using the General WDR Permit Process Over the Last 10 Years
Gary Cronk, JAG Consulting Group, Santa Ana, CA

Session 3: 8:00am – 12:00pm, Pavilion
Petroleum Hydrocarbon Vapor Intrusion I
Moderator: Todd Ririe, BP, La Palma, CA

8:00 The Myth Behind the Use of Helium as a Tracer Gas for Leak Detection on Soil Gas Sample Collection Projects
Steve Jones, Gary Epper, Chris Jones and Colby Wakeman, Jones Environmental Labs, Fullerton, CA

8:30 Evaluation of Leak Check Procedures for Soil Vapor Sampling
Suzie Reed Nawikas, Louise Adams, Dave Balkenbush and Janis Villarreal, H&P Mobile Geochemistry, Inc., Carlsbad, CA

9:00 Innovative Continuous Soil Gas/Vapour Measurement and Improved Risk Assessment
Peter Morris, Ion Science, Cambridge, United Kingdom; Geoff Hewitt, Ion Science, Burlington, VT

9:30 Use of Crawl Space Sampling Data and Other Lines of Evidence for Evaluating Vapor Intrusion
Chawn (C.Y.) Jeng and William Bosan, Cal EPA/DTSC, Cypress, CA

10:00 Break

10:30 Analysis and Interpretation Methods for Temporarily Variable Vapor Intrusion Data
George Devaull, Shell Global Solutions, Houston, TX

11:00 Total Petroleum Hydrocarbon (TPH) Measurements in U.S. EPA’s Petroleum Vapor Intrusion (PVI) Database: Methods, Relative Levels, and Relative Risks
Robert Truesdale, RTI International, Research Triangle Park, NC; Ian Hers, Golder Associates, Burnaby, BC, Canada; Heidi Hayes, Eurofins Air Toxics

11:30 Documenting an Aerobic Transition Layer to Delineate Vapor Intrusion Risk at a Petroleum Hydrocarbon Release Site
Robert O’Laskey, James W. Babcock, and Elisabeth Hawley, ARCADIS U.S., Emeryville, CA; Jennifer Hilario, ARCADIS US, Irvine, CA

LUNCHEON SPEAKER
Wednesday, March 20, 2013
12:00pm – 1:30pm, Cabrillo
Sustainability and Competitiveness: an Insurer’s Perspective
Lindene E. Patton, Chief Climate Product Officer, Zurich Insurance Group Ltd., Washington, DC

Sustainability and competitiveness are inter-related in the face of climate change. Unsustainable, resource depleting operations, and inadequate resilient assets are not only environmentally undesirable in the short term, they are economically unsustainable in the long term. This presentation will focus on how the failure to address resilience in the face of climate change can have negative economic impacts from the perspective of both the insurer and insureds (or uninsureds in many cases). Ms. Patton will discuss the inter-relatedness of global risks in the face of climate change, drawing on her work with the World Economic Forum and others. Decision support analysis tools allowing comparison of costs and benefits of resilient investments will be reviewed. Discussion of approaches currently being field tested around the globe to improve resilience will also be reviewed, along with potential path-forward options.

About the speaker: Lindene Patton is Chief Climate Product Officer for Zurich Insurance Group (Zurich). She is responsible for product development and risk management related to climate change. She is a member of the World Economic Forum Global Advisory Council on Measuring Sustainability. Ms. Patton serves as the Vice-Chair of the Climate Change and Tort Liability Sub-Committee of the Geneva Association. She is a member of the Advisory Council to the Resources for the Future’s Center for the Management of Ecological Wealth (RFF’s CMEW). Ms. Patton serves on numerous governmental advisory boards, including the Executive Secretariat of the U.S. National Climate Assessment Development and Advisory Committee; and the U.S. Environmental Protection Agency (EPA) Environmental Financial Advisory Board. She is an advisory board member for the University of California at Santa Barbara’s Bren School of Environmental Science and Management. She is a member of the ICLEI (International Council for Local Environmental Initiatives) for Sustainable Governments Adaptation Experts Advisory Committee. Ms. Patton serves as an Advisory Board Member to the Bloomberg monthly publication and the Environmental Due Diligence Guide. Ms. Patton is an attorney licensed in California and the District of Columbia. She holds a Bachelor of Science in biochemistry from the University of California, Davis, a Master of Public Health from the University of California, Berkeley, and a Juris Doctor from Santa Clara University School of Law.
PLAT FORM SESSIONS

Session 1: 1:30pm – 5:30pm, Sierra 5

Risk Assessment/Risk Management
Moderator: Michael Ruby, Integral Consulting, Louisville, CO

1:30 Derivation, Application, and Compliance with Arsenic Surface Water Criteria: Striking a Balance between Costs, Benefits, Efficacy, and Unintended Consequences
Michael Ruby, Integral Consulting, Louisville, CO

2:00 A Risk Management Approach to Sediment Remediation
Tiona Todoruk, WorleyParsons Group Inc, Fountain Valley, CA; Louis Bertocchello, Brooke Bennett and Jody Berry, WorleyParsons Canada Services Ltd., Burnaby, BC, Canada

2:30 Assessing the Implications for Vapor Intrusion Evaluation of NRC’s “Alternatives for Managing the Nation’s Complex Contaminated Groundwater Sites”
Steven Lu, ENVIRON International Corporation, Irvine, CA; Christopher Mulry and Kun Zhao, ENVIRON International Corporation, Emeryville, CA

3:00 Break

3:30 Estimating Volatile Organic Compound Concentrations in Utility Trenches at Contaminated Sites
Ruth Custance and Robert Ettinger, Geosyntec Consultants, Santa Barbara, CA; Oliver Heynes, MMM Engineering, Brookline, MA; Cathy Villaroman, Geosyntec Consultants, Huntington Beach, CA; Robert Ettinger, Geosyntec Consultants, Santa Barbara, CA

4:00 Developing Toxicity Criteria for Use in Human Health Risk Assessment: Impact on Remediation Standards
Priscilla Tomlinson, Integral Consulting, Seattle, WA; Ann Bradley, Integral Consulting, Inc, Brooklyn, NY; Michael Ruby, Integral Consulting, Louisville, CO

4:30 An Investigation into the Anomalous Rising Groundwater Levels Beneath Kearny Mesa, California and Its Implications on Human Health Risk
Tony Sawyer and Ronel Skoda, County of San Diego, Department of Environmental Health, Site Assessment and Mitigation Program, San Diego, CA

5:00 Evaluation and Decision-Making Implications of the Infant Milk Ingestion Pathway in Human Health Risk Assessments
Usha Vedagiri, URS Corporation, Oakland, CA; John Wakeman, US Army Corps of Engineers, Seattle, WA

Session 3: 1:30pm – 5:30pm, Pavilion

Petroleum Hydrocarbon Vapor Intrusion II
Moderator: Todd Ririe, BP, La Palma, CA

1:30 The Role of Methanogenesis in the PVI Evaluation of a Large LNAPL Plume at a Former Refinery Site
Shankar Subramanian, URS Corporation, Chicago, IL; Robert Sweeney, E & P Geochemistry, Etna, CA; David Tsao, BP Corporation North America, Inc, Naperville, IL

2:00 Effect of Ethanol Biodegradation on Soil Gas Advection and Oxygen Demand: Modeled Results for Aerobic and Methanogenic Conditions
Ian Hars, Golder Associates Ltd., Burnaby, BC, Canada; George DeVaull, Shell Global Solutions US Inc, Houston, TX; Parisa Jourabchi, Golder Associates Ltd, Vancouver, BC, Canada

2:30 Screening Distances for Petroleum Vapor Intrusion Risk Assessment
Matthew Lahvis, Shell Global Solutions, Houston, TX

3:00 Break

3:30 Petroleum Vapour Intrusion Guidance in Australia
Jackie Wright, Environmental Risk Sciences Pty Ltd, Carlingford, NSW, Australia

4:00 Do Petroleum Vapours Accumulate Under Buildings – What do Field Studies Show Compared to a New Model Accounting for Foundation Size Effects?
Greg Davis, CSIRO Land and Water, Wembley, Western Australia

4:30 Empirical Data to Evaluate the Occurrence of Sub-slab O2 Depletion “Shadow” at Petroleum Hydrocarbon-Impacted Vapor Intrusion Sites
Ravi Kolhatkar, and Hong Luo, Chevron Energy Technology Company, Houston, TX; Tom Pearn, Chevron Energy Technology Company, San Ramon, CA

5:00 Comparison of Biodegradation Model Predictions and Field Data from PVI Databases
Robert Sweeney, Environmental & Petroleum Geochemistry, Etna, CA; Jackie Wright, ERS, Dundas Valley, Australia

WEDNESDAY AFTERNOON

Session 2: 1:30pm – 4:30pm, Salon G

Emerging Contaminants
Moderators: Rula Deeb, ARCADIS-US, Emeryville, CA and Javier Santillan, JAS Environmental Solutions, Universal City, TX

1:30 Removing Halogenated Carboxylic Acid Contaminants from Water
Lauren Olson, Stephen Mezyk, Kimberly Rickman and Michael Schramm, California State University at Long Beach, Long Beach, CA; Jay LaVerne, University of Notre Dame, Notre Dame, IN

2:00 Using Sulfate Radicals to Remove Antibiotics from Contaminated Waters
DeeAnn Asamoto and Stephen Mezyk, California State University at Long Beach, Long Beach, CA

2:30 Molecular Biological Tools for Monitoring Biodegradation of 1,4-Dioxane
Phillip Gedalanga, Peerapong Pornwongthong and Shailly Mahendra, UCLA, Los Angeles, CA; Rebecca Mora and Dora Chiang, AECOM Environment, Inc; Brett Baldwin and Greg Davis, Microbial Insights, Inc.

3:00 Break

3:30 Treatment of 1,4-Dioxane in Groundwater
Randy Putnam and Jim Cowart, EnviroGroup Limited, Centennial, CO; Susan Welt, EnviroGroup Limited, Latham, NY

4:00 Long-term Performance Assessment of In-Situ Hexavalent Chromium Reduction by Calcium Polysulfide at a Northern California Site
Mary Stallard, Anja Verce, Robert O. Devany and Lynne Srinivasan, Weiss Associates, Emeryville, CA

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5:00pm – 7:00pm
Exhibit Hall, Salons A-F
(Free to all registered conference attendees)
The following posters will be presented on Wednesday only
Santa Fe 3-4 and Sunroom

**Effect of Animal Manures on Phosphorus Fractions of Two Tropical Soils**
Jamli Oladipupo Azeez and Ololade Oyindamola Olurunke, Department of Soil Science and Land Management, Abeeokuta, Nigeria

**Reparing Nanomagnetite-Zeolite Composites to be used in Environmental Remediation of Anionic Contaminants in Water Bodies**
Mauricio Escudey, Carmen Pizarro and Maria Fernanda Albornoz, Universidad de Santiago de Chile, Santiago, Chile; Jose Dominigos Fabris, Universidade Federal de Minas Gerais, Minas Gerais, Brazil; Monica Antilen, Pontificia Universidad Catolica de Chile, Santiago, Chile

**Bacterial Consortium with High Degradation Rate Efficiency of Diesel in vitro**
Alejandro Ledezma-Villanueva, Elva Archeiga-Carvajal and Juan Adame-Rodriguez, Universidad Autonoma de Nuevo Leon, San Nicolas de Los Garza, Nuevo Leon, Mexico; Alexia O’Connor-Sanchez, Centro de Investigaciones Scientificas de Yucatan, Yucatan, Mexico

**Using Multi-Phase Conceptual Site Models for Predicting and Mitigating Vapor Intrusion: Practical Applications of USEPA CSM Scenarios Paper**
George Losonety, Alliance for Site Closure, Greenscience, IN; Rod Thompson, Risk Options LLC, Indianapolis, IN

**Variation of Vacuum Readings in a Large Scale Sub-Slab Depressurization System**
Eric Lovenduski, EnviroGroup Limited, Latham, NY; Everton Henqures, EH Hall, Inc, Cobleskill, NY; Theodore Kuehster, EnviroGroup Limited, Centennial, CO

**Analyzing the Changing Agricultural Landscape of Northern Louisiana Using GIS**
Edmund Merem, Joan Wesley, Daphine Forster, Chandra Richardson and Jasmine Williams-Washington, Jackson State University, Jackson, MS

**Simulation Modeling of Arsenic Dynamics & Removal in Contaminated Groundwater**
Michael Mitytah, University of Cape Coast, Cape Coast, Ghana; James Jones and Dean Rhue, University of Florida, Gainesville, FL; Samuel Adiku, University of Ghana, Accra, Ghana; Craig Stanley and Jack Rechcigl, University of Florida, Wimauma, FL

**Outlining the Advantages of Selecting Catalyzed Hydrogen Peroxide or Activated Sodium Persulfate at Two Different Petroleum Hydrocarbon Sites**
Will Moody, Geo-Cleanse International, Inc., Matawan, NJ

**Assessment of Metals Pollution in Urban Road Dusts from Selected Highways of the Greater Toronto Area in Canada**
Yousef Nazal, King Saud University, Riyadh, Saudi Arabia; Marc Rosen, University of Ontario Institute of Technology, Oshawa, Canada

**Geochemical Assessment of Groundwater Contamination with Special Emphasizes on Fluoride, a Case Study from Midyan Basin, Northwestern Saudi Arabia**
Yousef Nazal and Habes Ghrefat, King Saud University, Riyadh, Saudi Arabia

**Application of Multivariate Geostatistics in the Investigation of Heavy Metal Contamination of Roadside Dusts from Selected Highways of the Greater Toronto Area, Canada**
Yousef Nazal and Habes Ghrefat, King Saud University, Riyadh, Saudi Arabia; Marc Rosen, University of Ontario Institute of Technology, Oshawa, Canada

**Use of Distilled Water for Leak Detection in Sub-Slab Vapor Sampling**
Chris Noland, Kleinfielder West, Inc., San Diego, CA

**Health Implications and Remediation of Heavy Metals Associated with Glass Industry in North Central India—A Case Study**
Manoj Paul, Rohan O’Souza and Mayank Varun, St. John’s College, Agra, Uttar Pradesh, India

**ICP-MS Technology – A Perfect Solution for Environmental Challenges**
Anthony Rhoden, Ewa Pruszkowski, Cynthia Bosnak and Stan Smith, PerkinElmer, Shelton, CT

**Formation of Oil-like Products by Hydrous Pyrolysis of Scrap Tires at Temperatures from 150 to 400C**
Ahmed Rushdi, Abdurrahman Al-Awadi, Khalid Al-Mutlaq, and Bermd R. Simonette, King Saud University, Riyadh, Saudi Arabia

**A QSAR Model for the Prediction of Drug Binding Affinities to Human Serum Albumin**
Melek Türker Sacan, Bogazici University, Istanbul, Turkey; Gulcin Tugcu and Serli Onlu, Bogazici University, Istanbul, Turkey

**Continued Decline in Volatile Organic Compound Concentrations in Groundwater Following Electrical Resistance Heating**
John Sankey, True Blue Technologies Inc., Richmond, BC, Canada; Greg Beyke, TRS Group, Longview, WA; Daniel Oberle and David Fleming, TRS Group

**Introduction to Cometabolic Bioremediation**
John Sankey, True Blue Technologies, Inc., Richmond, BC, Canada; David F. Alden, Tersus Environmental, Wake Forest, NC

**Recognizing and Evaluating Aircraft Cabin Neurotoxicity**
Raymond Singer, NEUROTOX, Santa Fe, NM

**Evaluating On-site and Off-Site Vapor Intrusion from a Dry Cleaner Site in Southern California**
Debra Taylor, Cal EPA/DTSC, Sacramento, CA; Mia Huyhn and Bruce Garbaccio, Cal EPA/DTSC, Chatsworth, CA; William Bosan, Cal EPA/DTSC, Cypress, CA

**The Practical Significance of the New TCE Reference Concentration and Inhalation Unit Risk on Vapor Intrusion**
Rod B Thompson, Risk Options, LLC working with the Alliance for Site Closure, Indianapolis, IN

**A Feasible Estimation for Using Carbonate as a Tracer of Groundwater Contamination**
Yih-Jin Tsai, Taiwan Shoufu University, Tainan, Taiwan

**The Value of Open Communication**
Susan Welt, EnviroGroup Limited, Latham, NY; Lisa Sigler, Sigler Communications, Denver, CO

**Approaches to In Situ Stabilization for Complex Contaminant Mixtures in Soils**
Alan Weston, Sophia Dore, Donald Pope, Christa Nunn, and Paul Ranieri, Conestoga-Rovers & Associates, Niagara Falls, NY

**EPA Method TO-17: How Much Moisture Does It Take to Impact the Recovery of Volatiles**
Elizabeth Winger, Calscience Environmetal Laboratories, Inc, Garden Grove, CA

**Water Supply Assessment – Innovative Weather Data / GIS Approach – Solution Oriented**
Joseph Zilles, Kleinfielder West, Inc., Stockton, CA
**PLATFORM SESSIONS**

**Session 1:** 9:00am – 12:00pm, Sierra 5  
**Innovative Remedial Technologies**  
Moderator: Ryan Wymore, CDM Smith, Denver, CO

- **9:00** Bench-Top Testing to Support Design of a Reject Water Recovery Treatment System  
  Heather Smith, Victor Medina, Scott Waisner, Jared Johnson, Roy Wade and Jose Mattei-Sosa, U.S. Army Corps of Engineers, Vicksburg, MS

- **9:30** Examining Remediation Product Performance with a Multivariate Diagnostic Program and Evaluation Strategy  
  Stephen Koenigsberg, Brown and Caldwell, Irvine, CA; Sandy Britt, ProHydro Inc, Fairport, NY; Lawra Doga and Ronald Harwood, Excel Environmental Resources, Inc, North Brunswick, NJ; Gregg Gustafson, Instrumentation North West, Kirkland, WA; Robert Kelley, ARS Technologies, New Brunswick, NJ; Mark Kram, Groundswell Technologies, Santa Barbara, CA; Fayaz Lakhwala, FMC Environmental Solutions, Union, NJ; Frank Loeffler, University of Tennesse, Knoxville, TN; Dora Ogles, Microbial Insights, Rockford, TN; John Sohl, Columbia Technologies, Inc, Baltimore, MD

**Break**

**10:30** Coupling Oxidative and Reductive Treatment Technologies for Integrated Site Remediation  
Will Moody and Dan Bryan, Geo-Cleanse International, Inc., Matawan, NJ

**11:00** Use of Stabilized Hydrogen Peroxide to Control the Adverse Side Effects of the Catalyzed Fenton’s Reaction  
Gary Cronk, JAG Consulting Group, Santa Ana, CA

**11:30** Field Demonstration of a Monitoring Toolbox for In-Situ Biogeochemical Transformation  
Ryan Wymore, CDM Smith, Denver, CO; Pat Evans, CDM Smith, Bellevue, WA; Bruce Henry, Parsons, Denver, CO; Adria Bodour, AFCEE, Brooks City-Base, TX

**Session 3:** 8:30am – 12:00pm, Pavilion  
**Vapor Intrusion**  
Moderator: Elizabeth Miesner, ENVIRON, San Francisco, CA

- **8:30** Statistical Analyses of Indoor Air Concentration from a Vapor Intrusion Study Site  
  Chase Holton, Hong Luo, Paul Dahlen and Paul Johnson, Arizona State University, Tempe, AZ

- **9:00** Determination of Polychlorinated Biphenyls in Air using EPA Compendium Method TO-17  
  Heidi Hayes, Diane Benton and Jason Arnold, Eurofins Air Toxics, Inc., Folsom, CA

- **9:30** Fan Longevity and Performance for Long-Term VOC Reduction at the Redfield Site  
  Jeffrey Kurtz, EnviroGroup Limited, Centennial, CO

**Break**

**10:00**  
**10:30** Addressing Action Decisions for Long and Short-Term Chlorinated Vapor Intrusion Exposure Levels  
Rod B Thompson, Rtsk Options, LLC working with the Alliance for Site Closure, Indianapolis, IN

**11:00** Techniques for Assessing the Age, Location and Vapor Intrusion Potential of VOC Source Areas Beneath Buildings  
Craig Cox, Cox-Colvin & Associates, Inc., Plain City, OH

**11:30** Results from New EPA Research on Temporal Variations of Indoor Air & Sub-Slab Soil Gas Concentrations Under a House  
Blayne Hartman, Hartman Environmental Geoscience, Solana Beach, CA; Brian Schumacher and John Zimmerman, USEPA-ORD/NERL, Las Vegas, NV; Christopher Lutes and Brian Cosky, ARCADIS U.S., Durham, NC; Robert Truesdale, RTI International, Research Triangle Park, NC

**Session 2:** 8:00am – 12:00pm, Santa Fe 3  
**Remediation**  
Moderator: Stephen Mezyk, California State University at Long Beach, Long Beach, CA

- **8:00** Remediation of a Fungicide Spill at a Remote Site by Chemical Oxidation  
  Charles Blanchard, Groundwater & Environmental Services, Inc. (GES), Concord, CA

- **8:30** A New, Catalyzed Persulfate Reagent with Built-In Activation for the In-Situ Chemical Oxidation of Groundwater and Soil Contaminants  
  Ben Mork and Bryan Vigue, Regenesis, Union, NJ

**Break**

**9:00** Distribution of Vegetable Oil-Based Substrate in Shallow Fractured Bedrock and Associated Saprolitic Clay Soils  
Brad Huxol, TRC, Kansas City, MO; Michael Sieczkowski, JRW Bioremediation, Lenexa, KS; Keith Piontek, TRC, Eureka, MO

**9:30** Geochemical and Organic Carbon Influence on MTBE and TBA Attenuation at Over 40 Petroleum Sites  
Jennifer Nyman, ARCADIS U.S., Emeryville, CA; Matthew Schnobrich, ARCADIS U.S., King of Prussia, PA; Eric Nichols, ARCADIS U.S., Cranbury, NJ; Biona Silver, ARCADIS U.S., Cranbury, NJ; Monica Heintz, ARCADIS U.S., Lakewood, CO; Kanak Nakhare, Georgia Institute of Technology, Atlanta, GA

**10:00** Break

**10:30** A Field Study of Persistence and Distribution of Chemical Oxidants for Treating Petroleum Hydrocarbon Impacts  
Rick McGregor, InSitu Remediation Services Ltd, Burlington, ON, Canada

**11:00** Use of a Freeze Wall to Shore Soils for Excavation Adjacent to a Historic Building  
Benjamin Starr, Betsy Day, and Reid Carscadden, Integral Consulting, Seattle, WA

**11:30** Treatment of Perfluorinated Compounds Found in Aqueous Firefighting Foams using Heat Activated Persulfate  
Heather Smith, José Mattei-Sosa, Victor Medina, and Scott Waisner, U.S. Army Engineer Research & Development Center, Vicksburg, MS; Linda Lee, Purdue University, Lafayette, IN

**Session 4:** 9:00am – 12:00pm, Salon G  
**Sustainability**  
Moderator: Wally Hise, HDR, Salt Lake City, UT

- **9:00** A Tiered Approach to Sustainable Remediation  
  Harry Van Den Berg, AECOM, Camarillo, CA; John Ryan, AECOM, Lopez Island, WA; Scott McDonough, AECOM, Latham, NY

- **9:30** Ecological Restoration at a Former Firing Range, Clackamas, Oregon  
  Amanda Haney and Maya V. Taylor, AMEC Environment & Infrastructure, Inc., Portland, OR

**Break**

**10:00**  
**10:30** Green and Sustainable Remediation Momentum in the United States and Abroad  
Diana Hasegan, Treadwell & Rollo, A Langan Company, Oakland, CA; Rebecca Bourdon, Minnesota Pollution Control Agency

**11:00** Groundwater Conservation and Re-Use at Remediation Sites: A SURF Technical Initiative  
Paul Hadley, CA EPA, DTSC, Sacramento, CA; Patrick Keddington, Haley and Aldrich Inc, San Diego, CA

**11:30** Use of Lifecycle Analysis in Remediation Alternative Selection  
Olivia Skance, Chevron, San Ramon, CA; Jonathan Lilien, Chevron Environmental Technology Company; Janet Peargin, Chevron Environmental Technology Company; Paul Favara, CH2M Hill

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- Sam Williams, Geosyntec Consultants
- Ryan Wymore, CDM Smith
- Helen Yu, San Diego RWQCB
- Dawn Zorno, Zorno & Associates