WELCOME

On behalf of CRC CARE it is my pleasure to welcome you to the biennial CleanUp Conference.

This year, the organising committee has prepared a scientific and educational program that covers all aspects of contaminated site assessment, management and remediation. Particular attention has been paid to presenting you with different aspects and approaches from Australia and many other countries around the world. The sessions will cover both advances in research and industry best practice.

Whether you are an industry practitioner, a scientist, a regulator or a service provider, and regardless of whether you are new to the field or have been practicing for decades, we are certain that you will find something interesting at each time slot.

The organising committee is pleased to have once again secured the Crown Melbourne as the host venue for the event. The Crown Conference Centre – one of Australia’s best-equipped purpose-built convention facilities – is the ideal venue for the CleanUp Conference. Crown offers an environment that enables attendees to easily navigate the tightly paced program, engage with exhibitors, and share ideas and information.

Networking will be facilitated through lunches, receptions and other meals during program breaks. After the sessions conclude each evening, there will be poster sessions and networking drinks, and the Conference Gala Dinner will again be a highlight.

Bringing together over 700 delegates from all fields and related industries, the Conference presents an excellent opportunity to increase awareness of your organisation, demonstrate your involvement in the contamination assessment and remediation industry, promote your products and services, support your brand, and build your profile – before, during and after the event.

We encourage you to take advantage of this unique opportunity to promote yourself, your organisation and your clients to a large national and international audience, and to contribute to the success of this special event.

The Conference has again been very well supported by our sponsors and exhibitors, without whom CleanUp 2015 would not be possible.

Finally, we extend our thanks to the members of the organising committees who have generously given their time and expertise to ensure CleanUp 2015 meets the needs of the various industry sectors represented by the attending delegates.

We look forward to your participation at this year’s Conference for what we are sure will be a professionally rewarding and enjoyable experience.

Professor Ravi Naidu
CEO and Managing Director, CRC CARE
Global Innovation Chair and Director,
Global Centre for Environmental Remediation, University of Newcastle

The Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) is a multi-partner Australian research organisation developing innovative technologies to assess, prevent and remediate the contamination of soil, water and air. World-class researchers at CRC CARE work with industry on global contamination issues, engaging with major end-users such as the mining and petroleum industries, environmental regulators, government organisations, small-to-medium sized enterprises and consultants.

CRC CARE’s structured research program is complemented by a focus on educating and training postgraduates and industry professionals. In so doing, CRC CARE supports the growth of highly qualified and suitably trained researchers and decision-makers in the area of environmental risk assessment and remediation.

For more information, visit www.crccare.com
Technical advisory committee

Annette Nolan, Enviropacific (AUS)
Bruce Kennedy, CRC CARE (AUS)
Cheryl Lim, National Measurement Institute (AUS)
Dawit Bekele, Global Centre for Environmental Remediation, University of Newcastle (AUS)
Frederic Cosme, Golder Associates (AUS)
Garry Smith, SuRF ANZ and Geosyntec (AUS)
Jack Ng, EnTox, University of Queensland and CRC CARE (AUS)
Jackie Wright, Environmental Risk Sciences Pty Ltd (EnRiskS) (AUS)
Jayant Keskar, CRC CARE (AUS)
Jean测smap, Greencap (AUS)
Joyithanna Jr, University of South Australia (AUS)
Kannan Krishnan, Global Centre for Environmental Remediation, University of Newcastle (AUS)
Kerry Scott, CRC CARE (AUS)
Megharaj Mallavarapu, Global Centre for Environmental Remediation, University of Newcastle (AUS)
Mitzi Bolton, EPA Victoria (AUS)
Morow Dong, Global Centre for Environmental Remediation, University of Newcastle (AUS)
Naji Akladiss, Maine Department of Environmental Protection (USA)

Workshop coordinators

Blayne Hartman, Hartman Environmental (USA)
Charles Newell, GSI Environmental Inc. (USA)
Dawit Bekele, Global Centre for Environmental Remediation, University of Newcastle (AUS)
Eric Freibet, GHD (AUS)
Eric Kerr, Golder Associates Inc. (USA)
Frederic Cosme, Golder Associates Pty Ltd (AUS)
Garry Smith, SuRF ANZ and Geosyntec (AUS)
Greg Davis, CSIRO (AUS)
Hans Slenders, Arcadis, NICE and SuRF Netherlands (NL)
Jack Ng, EnTox, University of Queensland and CRC CARE (AUS)
Jackie Wright, Environmental Risk Sciences Pty Ltd (EnRiskS) (AUS)
John Hunt, EIC Activities (AUS)
Jonathan Medid, Golder Associates Pty Ltd (AUS)
Kelly Perkins, Maine Department of Environmental Protection (USA)
Larry M. Deschaine, Optimisation Subject Matter Expert, HydroGeoLogic, Inc. (USA)
Linda Teuschler, LK Teuschler & Associates (USA)
Naji Akladiss, Maine Department of Environmental Protection (USA)
Peter Di Marco, ACTRA and Golder Associates (AUS)
Peter Nadebaum, GHD (AUS)
Brian Priestly, Monash University and ACTRA (AUS)
Ryan A. Wymore, Geosyntec Consultants (USA)
Susan Barnes, CH2M (AUS)
Susan Schow, Maine Health Management Coalition (USA)
Tamzen Macbeth, CDM Smith (USA)

Local organising committee

Ravi Naidu, CRC CARE and Global Centre for Environmental Remediation, University of Newcastle
Prashant Srivastava, CRC CARE
Dee Hall, CRC CARE
Adam Barclay, CRC CARE
Kevin Weidenhofer, CRC CARE
Paul Saeki, CRC CARE
Annette Nolan, Enviropacific
Ravi Naidu, Conference Chair, CRC CARE and Global Centre for Environmental Remediation, University of Newcastle
Prashant Srivastava, CRC CARE
Dee Hall, CRC CARE
Adam Barclay, CRC CARE
Andrew Beveridge, CRC CARE
Paul Nathanail, University of Nottingham (UK)
Naji Akladiss, State of Maine Department of Environmental Protection (USA)
Scott Warner, Ramboll Environ (USA)
Rao Surampalli, U.S. EPA (USA)

Technical excellence, integrity and benefits, for our clients and the environment.
Registration desk opening times
Registration is located on the ground floor of the Crown Conference Centre. Opening times are:
- Sunday 13 September 8:00am – 6:00pm
- Monday 14 September 7:30am – 5:00pm
- Tuesday 15 September 7:30am – 5:00pm
- Wednesday 16 September 7:30am – 4:00pm

Notes to presenters
Presenters are requested to report to the registration desk. You will be directed to the speaker preparation room where your presentation will be downloaded and verified. Please meet with your session chairperson in the session room 10–15 minutes prior to the commencement of the session.

The speaker preparation room will be open during the following times:
- Sunday 13 September: 3:00pm – 6:00pm
- Monday 14 September: 7:30am – 5:00pm
- Tuesday 15 September: 7:30am – 5:00pm
- Wednesday 16 September: 7:30am – 3:30pm

If at all possible, please check-in your presentation material well before your presentation.

Special dietary requirements
If you have advised the organisers of a special dietary requirement, this information has been forwarded to the catering staff. However, it is your responsibility to identify yourself to staff.

Name tags
Name tags and lanyards are in your delegate envelope. For security reasons, and for easy recognition, please wear your name tag to each conference function.
Lanyards proudly sponsored by Cardno

Dress standard
Smart casual dress is suggested for conference sessions and social functions.

Smoking
The Conference has designated this to be a non-smoking environment for all sessions and social functions.

Melbourne shopping hours
As a general guide, trading hours for city shops are:
- Saturday to Wednesday: 10.00am – 5.00pm
- Thursday: 10.00am – 7.00pm
- Friday: 10.00am – 9.00pm

Hours of operation often vary between shops and areas.

Melbourne taxis
Taxis can be hailed in the street if their sign is illuminated. Orange lights indicate that the taxi is not for hire. Contact numbers within Australia are:
- Arrow: 13 22 11
- CAABS: 13 22 27
- Black Cabs: 13 22 27
- Embassy: 13 17 65
- North Suburban: 13 11 19
- Silver Top: 13 10 08

City Ambassadors and Info Booth
Melbourne’s Ambassadors wear distinctive red uniforms and rove the streets providing free information to visitors. Ask them for directions or ideas for things to do or see.
The Melbourne Visitor Booth is located in Bourke Street Mall and operates during the following hours:
- Monday to Saturday: 9.00am – 5.00pm
- Sunday: 10.00am – 5.00pm

Melbourne greeter service
Free personal orientations of the city with a local volunteer who shares your interest and speaks your language are available seven days a week. Bookings must be made three days in advance.
T +61 3 9658 9658

GENERAL INFORMATION
Barista
Let our professional baristas treat you and your guests to delicious and expertly prepared freshly ground coffee – free all day, everyday.

Melbourne visitor centre
Federation Square
Corner Swanston and Flinders streets
T +61 3 9658 9658
tourism@melbourne.vic.gov.au
www.thatsmelbourne.com.au

Geosyntec consultants
Smart Sustainable Solutions for the Environment
Come visit us at CleanUp 2015 at Booth 2 or sit in on various talks being presented by Geosyntec, including:
- 14 talks, including 2 keynotes and 2 invited speakers, with topics covering various remediation techniques, site characterisation, and vapour intrusion.
- 2 panel discussions, focusing on remediation and sustainability.
- 2 short courses (Sustainable Remediation Practice and Benefits, Integrated (LNAPL and DNAPL) Site Characterisation).

We are always looking for top-notch talent
Geosyntec is the home for innovation and entrepreneurship for a reason – our people. We are the right career choice for individuals who are passionate about their chosen profession, engaged with their clients and colleagues, and are confidently building a rewarding future.

CONTACT:
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Local to Sydney, we are a leading international consultancy of researchers, engineers, and scientists who employ leading edge science and sustainability principles in contaminated land investigation and remediation.

Proudly sponsored by Elsevier
Mark Cave
Principal Scientist, British Geological Survey

Mark Cave is an analytical chemist/geochimist with extensive experience in the analysis and interpretation of environmental chemical data with particular reference to geochemistry and human health. His interests and experience include working on the occurrence and bioaccessibility of polycyclic aromatic hydrocarbons in soils, investigating the geological controls on the bioaccessibility of naturally occurring arsenic in the UK, and interpretation of geochemical data sets with reference to geogenic and anthropogenic influences. One of Mark’s key achievements has been the development of a novel sequential extraction methodology for identification of the solid phase speciation of potentially harmful elements in soils and sediments using a chemometric modelling technique.

Mark is chairman of BARGE (Bioaccessibility Research Group of Europe), member of the Royal Society of Chemistry, committee member of the International Medical Geology Association, and holds chartered status as a chemist (CChem, MRSC) and a scientist (CSci, MRSC).

Cheryl Batagol
Chairman, EPA Victoria

Born on a dairy farm in South Gippsland, Cheryl Batagol started her career in 1968, working in a family waste collection company, which also marked the start of a long career in the waste management industry where she worked for over thirty years in both private and public companies, retiring in 2000 from Brambles Australia Ltd’s Cleanaway division.

Prior to her appointment as EPA Victoria’s Chairman, Cheryl was the Chairman of Melbourne Water for five years. Cheryl has also served on the Boards of the Victorian Catchment Management Council, City West Water and Southern Rural Water. She has been a board member of EcoRecycle Victoria. Cheryl has also served the Victorian community on many other government, industry association and not-for-profit boards as well as on community and schools boards and committees.

Cheryl is currently the Chair for the CRC for Water Sensitive Cities and is a previous board member of Sustainability Victoria and a member of the Latrobe University’s Advisory Board for Public Sector Governance, Accountability and Performance.

Helen E. Dawson
Senior Consultant, Geosyntec Consultants

Helen Dawson, Ph.D., has more than 30 years of experience in private practice, public service and academia, and is a recognized leader in the field of vapor intrusion. Helen was the primary author of the U.S.EPA’s Office of Solid Waste Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil in 2002. She also was the primary investigator and author on two key technical U.S.EPA documents that support vapor intrusion assessment: U.S.EPA’s 2012 VI database paper EPA’s Vapor Intrusion Database Evaluation and Characterization of Attenuation Factors for Chlorinated Organic Compounds and Residential Buildings; and U.S.EPA’s 2011 paper Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residential.

She also developed U.S.EPA’s Vapor Intrusion Screening Level Calculator.

Since joining Geosyntec, Helen has successfully derived defensible site-specific vapor intrusion attenuation factors to support risk assessment and development of subsurface media cleanup levels. She also has received research funding from the U.S. Department of Defense to demonstrate the use of mass flux monitoring as an alternative approach for VI assessment.

William H. DiGuiseppi
Principal Hydrogeologist, CH2M

Bill DiGiuseppi is a principal hydrogeologist and program technology manager with almost 30 years of applied experience in soil and groundwater investigation and remediation. He is the leader of the Chemicals and Issues of Emerging Concern initiative within CH2M. In that role, Bill directs a team of professionals in the identification, prioritisation and management of chemicals such as 1,4-dioxane, perfluorinated compounds, hexavalent chromium and other critical pollutants. Bill has lead large and complex environmental investigation and remediation projects, published articles, chaired sessions at international conferences and co-authored books on the prevalence and remediation of chemicals of emerging concern.

Campbell Gemmell
Consulting Partner, Canopus Consulting; Adjunct Professor at the Centre for Environmental Risk Assessment and Remediation, University of South Australia; Honorary Professor in Environmental Regulation, Policy and Governance, University of Glasgow.

Campbell Gemmell is a consultant, mediator, and an experienced public sector CEO and leader who has worked in the environment and economic development for over 30 years. He specialises in environment policy, regulation and governance and teaches at the University of Glasgow. He is the former CEO of both the South Australian EPA and the Scottish EPA (SEPA). He has been Professor of Environmental Regulation and Policy at Glasgow University since 2007 and is an Adjunct Professor at UniSA.
Ian Hers
Principal/Senior Specialist Engineer, Golder Associates Ltd.

Ian Hers has 26 years of professional experience and is the global vapour practice leader for Golder Associates. Much of his work over the past two decades has focussed on the evaluation of soil vapour fate and transport, vadose zone processes, and the prediction, measurement and mitigation of soil vapour intrusion into buildings.

In addition to having developed guidance for numerous regulatory agencies including U.S.EPA, Health Canada, UK Environmental Agency, and several provinces and states in Canada and the US, Hers has authored over twenty technical papers on vapour intrusion. Most recently, he has co-authored a review of empirical data and models on petroleum vapour intrusion for U.S.EPA OUST; made significant contributions to the Interstate Technology and Regulatory Council (ITRC) guidance on Petroleum Vapour Intrusion and Light Non-Aqueous Phase Liquid (LNAPL) management; and regularly provides internet-based training for ITRC on these topics.

Ian is the principal investigator for several current or recently completed applied research projects for the American Petroleum Institute, Shell Global, Health Canada and Electric Power Research Institute, sits on the Board of Directors of the Science Advisory Board for Contaminated Sites, and is a member of the Contaminated Sites Approved Professionals in British Columbia.

Eric Kern
Associate and Senior Consultant, Golder Associates Ltd.

Eric Kern has over 20 years of practical research and consulting experience in the design of in situ treatment strategies for the remediation of chlorinated solvents and petroleum hydrocarbons at sites in USA, Canada, Europe and Australia.

Eric manages and conducts: biogeochemical investigations of soil, surface water, groundwater, and effluent streams from various industrial systems; feasibility analyses for treatment technology selection, technology costing and design; and implementation of environmental restoration projects. He has expertise in the remediation of complex contaminant mixtures, focusing primarily on chlorinated solvents, petroleum hydrocarbons, and metals. An emphasis of his work has been on employing in situ treatment strategies within contaminant source areas to reduce the overall life cycle of the site remedial strategy.

David Major
Principal and Managing Director, Savron (a division of Geosyntec Consultants)

David Major has over 25 years of international experience in negotiating, managing and directing the development and deployment of cost-effective groundwater and soil remediation strategies or technologies, and is responsible for the commercialisation of the smouldering-based STAR technology.

David has worked with a number of international universities and organisations such as DuPont to develop and commercialise new remediation and monitoring technologies for contaminated soil and groundwater. He has served on various scientific advisory boards including the U.S. EPA Expert Panel on DNAPL Remediation, and the U.S. National Research Council Committee on Geological and Geotechnical Engineering in the New Millennium. In 2007, David received a University of Waterloo, Faculty of Science Alumni of Honour Award in recognition of his professional accomplishments and was inducted into the Space Hall of Fame® for helping NASA commercialise Products from Space Benefiting Planet Earth. In 2015 he received the ASTM International C. A. Hogentogler Award.

Paul Nathanail
Professor of Engineering Geology, University of Nottingham; Managing Director, Land Quality Management Ltd.

Prof Paul Nathanail's interest in sustainable remediation stems from a long track record in the broader field of sustainable urban land management. The concept is "trending" and in danger of losing its impact through misuse on company websites and marketing literature. The plethora of spreadsheets, programs and apps purporting to diagnose sustainable remediation are in danger of cloaking a simple concept with overly elaborate, time consuming and expensive procedures. The middle ground in achieving a step change in how we remediate is to use simple tools and approaches to help identify those remedies likely to deliver optimal net social, economic and environmental benefits.

Charles J. Newell
Vice President, GSI Environmental Inc.

Charles Newell is a member of the American Academy of Environmental Engineers, a NGWA Certified Ground Water Professional, and an Adjunct Professor at Rice University in Houston.

Charles has co-authored five EPA publications, 12 environmental decision support software systems, numerous technical articles, and two books. His professional expertise includes site characterization, modeling, risk assessments, natural attenuation, bioremediation, long-term monitoring, and software development. With extensive experience conducting groundwater research and development projects for a variety of government and industrial clients, he has taught graduate level groundwater courses at both the University of Houston and Rice University.

In addition, Charles has served as a technical facilitator for groups trying to reach consensus regarding complex environmental issues and has been awarded the; Hanson Excellence of Presentation Award by the American Association of Petroleum Geologists; Outstanding Presentation Award by the American Institute of Chemical Engineers; 2001 Wesley W. Homer Award by the American Society of Civil Engineers; 2008 Outstanding Alumnus Award from Rice University; and Strategic Research and Development Program (SERDP) 2014 Project of the Year as a Co-PI.

Susan D. Richardson
Arthur Sease Williams Professor of Chemistry, Department of Chemistry and Biochemistry, University of South Carolina

Prior to joining the University of South Carolina in January 2014, Prof Susan Richardson was a Research Chemist for several years at the U.S. EPA’s National Exposure Research Laboratory in Athens, GA. For the last several years, Susan has been conducting research in drinking water – specifically in the study of toxicologically important disinfection by-products (DBPs).

Susan is the recipient of the 2008 American Chemical Society Award for Creative Advancements in Environmental Science & Technology, has received an honorary doctorate from Cape Breton University in Canada (2006), serves as an Associate Editor of Water Research and on the Editorial Advisory Board of Environmental Science & Technology, Rapid Communications in Mass Spectrometry, Journal of Hazardous Materials, and Environmental Science and Pollution Research.

In addition, Susan has published more than 115 journal articles and book chapters, and has written two ongoing invited biennial reviews for the journal Analytical Chemistry on Emerging Contaminants in Water Analysis and Environmental Mass Spectrometry.
His life goal is to find cost-effective responses to VI risks/potential that benefit all stakeholders including public health and of a technical document on ‘Radon Lessons’ based on the scientific observations from decades of Radon intrusion studies. He is currently leading the development of the 2002 OSWER (RCRA & Superfund) draft VI guidance.

Since 1999, Henry has been leading annual national workshops with national and international experts in VI to improve the scientific understanding of vapor intrusion and VI risk-management decision making. He is currently leading the development of a technical document on ‘Radon Lessons’ based on the scientific observations from decades of Radon intrusion studies. His life goal is to find cost-effective responses to VI risks/potential that benefit all stakeholders including public health and welfare, such as ‘Soil-Gas Safe Communities.’

Kirk T. Semple
Professor of Environmental Microbiology, Lancaster University

Prof Kirk T. Semple is an environmental microbiologist with over 20 years of research experience in the fields of: organic contaminant-biotia interactions in soils; availability of contaminants in soil; availability of contaminant residues in soils; risk assessment and biomediator of contaminated land; and most recently, the use of anerobic digestion for energy generation in wastewater treatment and the use of resulting by-products as soil amendments. A particular area of expertise lies in organic contaminant bioavailability in soil, and it is in this area he is best known internationally. He is also an Adjunct Professor in the Division of Information Technology, Engineering and Environment at the University of South Australia.

Kirk continues to manage an active research group, having supervised 38 PhD students and published over 170 articles in peer-reviewed journals, book chapters and international conferences; his current H index is 37.

In addition, Kirk has sat on the editorial boards of several journals: Journal of Applied; Soil Ecology; Environmental Toxicology and Chemistry; Soil Biology and Biochemistry; Journal of Soil and Sediment, Soil & Sediment Contamination; Journal of Applied Microbiology; Letters in Applied Microbiology; and is currently the co-editor-in-chief for Environmental Technology and Innovation.

Lenny Siegel
Executive Director, Center for Public Environmental Oversight

Lenny Siegel is one of the American environmental movement’s leading experts on both military facility contamination and the vapor intrusion pathway. He runs two online news groups (Military Environmental Forum and the Brownfields Internet Forum) for the Center for Public Environmental Oversight, and was recognised as the U.S. EPA’s Superfund Citizen of the Year 2011.

Lenny serves on a number of advisory and technical committees, including the ITRC Munitions Response Classification and Complex Sites Work Teams, the Moffett Field Restoration Advisory Board, and the California Brownfield Reuse Advisory Group. He has also served on a dozen U.S. National Research Council (National Academies of Sciences) committees, including five reviewing chemical weapons demilitarization activities.

Rao Surampalli
President and CEO, Global Institute for Energy, Environment and Sustainability

Prof Rao Y. Surampalli received his Masters and PhD in Environmental Engineering from Oklahoma State and Iowa State Universities, respectively. He is a Registered Professional Engineer in the branches of Civil and Environmental Engineering, and a Board Certified Environmental Engineer (BCEE) of the American Academy of Environmental Engineers (AAEE). He has worked with the U.S. Environmental Protection Agency for 29 years and retired as an Engineer Director.

Rao is currently the President and CEO of the Global Institute for Energy, Environment and Sustainability. He is also an Adjunct Professor in 8 universities and Distinguished/Honorary Professor in 5 universities. He has conducted research on over 50 environmental engineering topics and authored more than 600 technical publications, including 15 patents, 18 books, 110 book chapters, 260 refereed journal articles, presented at more than 230 national and international conferences, and given over 110 plenary, keynote or invited presentations worldwide. He has received over 30 national awards/honors, including election as the Distinguished Member of the American Society of Civil Engineers (ASCE).

Scott Warner
Principal Hydrogeologist and Water Resource Consultant, Ramboll Environ

Scott Warner has nearly 30 years’ experience in water resource consulting, development of innovative and sustainable remediation approaches, and business consulting regarding environmental issues. His projects have been located in many parts of the world including North and South America, Australia, Europe and Hong Kong.

Scott has substantial experience providing consultation on regulatory matters and has guided clients through land development and reuse issues. He was the project director and a lead designer for an innovative groundwater remediation system in New York State, USA that received the 2011 National Ground Water Association Outstanding Remediation Award. Scott has prepared more than 50 publications on the subject of groundwater remediation, hydraulics, and climate change considerations, is co-editor of a book on dense non-aqueous phase liquid characterization and remediation published by the American Chemical Society.

Gary Wealthall
Associate, Geosyntec Consultants

With more than 20 years experience in contaminant hydrogeology research and practice, Gary Wealthall specialises in the development and application of high-resolution site characterization methodologies at sites with complex heterogeneous geologies. He has published numerous best-practice guidance documents on the behavior of dense and light non-aqueous phase liquids (DNAPLs and LNAPLs) in intergranular and fractured bedrock aquifers and aquitards, including co-author of the recent ITRC guidance document Integrated DNAPL Site Characterization and Tools Selection published in May 2015.

Gary is currently undertaking remedial investigation projects and technical oversight at sites in Europe, North America, South America and South Africa. He is advancing the state of the practice through the use of advanced conceptual site models (CSMs) and 3D data reconstruction and visualization tools for process-based mapping of DNAPL contaminants in the subsurface. He is advancing the state of the practice by leading the development of a novel contaminant phase partitioning tool to evaluate remedial alternatives selection at DNAPL sites.
Ming-Hung Wong
Research Chair Professor of Environmental Science, Hong Kong Institute of Education; Emeritus Chair Professor of Biology, Hong Kong Baptist University; Chang Jiang Chair Professor of Environmental Science, Jinan University

Having served as the Regional Coordinator of Central and North-East Asia of the project “Regionally Based Assessment of Persistent Toxic Substances” sponsored by United Nations Environment Program (UNEP) and Global Environment Facility (GEF), Prof Wong has joined a panel of three to review a UNEP/GEF initiative “Emerging Chemicals Management Issues in Developing Countries and Countries with Economies in Transition” with the aim of understanding the sources and preventing adverse impacts of chemicals on human health and the environment in rapidly developing countries.

Ming-Hung has published over 560 SCI papers and 32 book chapters, edited 25 books/special issues of scientific journals, and filed 4 patents. His reputation has been widely recognised internationally and capped by receiving two DSc Degrees awarded by University of Durham and University of Strathclyde (UK) in 1992 and 2004, respectively. He is currently the Editor-in-Chief of Environmental Geochemistry and Health (Elsevier), and Book Series Editor of Urbanization, Industrialization and the Environment (CRC/Taylor & Francis).

Weile Yan
Assistant Professor, Department of Civil and Environmental Engineering, Texas Tech University

Weile Yan received a BEng and PhD in Environmental Engineering from the National University of Singapore (2002) and Lehigh University (2011), respectively, before completing a brief post-doctoral term at Princeton University (2011).

Weile’s current research activities focus on exploring the applications of iron-based nanoparticles for groundwater remediation, environmental catalysis with synthetic and naturally-occurring mineral colloids, and redox transformation of aquatic contaminants at solid-water interfaces.

THE COMMEMORATIVE BRIAN ROBINSON LECTURE

Part of the official opening of the Conference
Date: Sunday 13 September 2015
Time: 5.30pm – 6.45pm
Location: Conference Halls 1 – 3

Dr Brian Robinson AM devoted his working life to improving Victoria’s environment, and shaping the direction of environmental protection in Australia.

Born in Northern Ireland, Brian first came to Australia in 1968 to complete his PhD in Chemistry at Melbourne University. After a period as a research chemist with DuPont in the UK, he returned to Australia in 1973 to play a key role in the Westport Bay Environmental Study. It was here, working on one of the largest environmental studies of its type, that he consolidated his passion for the environment and his lifelong commitment to shaping a sustainable Victoria.

Brian joined the Environmental Protection Agency (EPA) Victoria in 1975, and was appointed Chairman in 1986. It was he, more than anyone else, who made EPA Victoria the nation’s leading environment protection agency. For more than 30 years he strived to ensure resource efficiency and sustainable goods and services. Over the last decade, his interests spread to identifying financial drivers for environmental improvements and to ways of fully engaging local communities in sustainability issues.

Recognised nationally and internationally as one of the strongest and most articulate advocates for cleaner production, Brian realised very early in his career that a robust high quality environment was central to the prosperity of society and individual enterprise.

Guided by his commitment to serving the people, Brian remains the longest serving Chairman/CEO of EPA, and is remembered as a humane and visionary leader with outstanding scientific and management skills. Brian dedicated his professional life to improving environmental health, ensuring access to reliable, relevant information about the environment, and providing people with the opportunity to participate in decisions on protecting the environment.

Sadly, Brian Robinson passed away on 1 May 2004. A valedictory celebration of his achievements was held in the Great Hall of the National Gallery of Victoria, attended by 1200 people. Politicians of all persuasions sang his praises. Bureaucrats and captains of industry spoke of his capabilities. All were unanimous in their appreciation of his ability and his charm. His sheer niceness, it seems, oiled the machinery he constructed to reconcile differing interests. He worked what miracles he could for the environment, and for people’s quality of life. Brian’s voice was loud and his passion was clear.

The commemorative Brain Robinson Lecture was inaugurated in 2009 at the 3rd International Contaminated Site Remediation Conference. In 2015, the organising committee wishes to acknowledge the efforts of an environmental hero whose vision, ideas and leadership were a force of global sustainability. This year, the organising committee has extended an invitation to Ms Cheryl Batagol, Chairman, EPA Victoria, to present the commemorative Brian Robinson Lecture.
SOCIAL PROGRAM

Welcome Reception
Date: Sunday 13 September 2015
Time: 5.00pm – 5.30pm
Location: Pre-function area, Level 2

The Welcome Reception will be held on Sunday evening, prior to the official opening of the Conference. This will be a great opportunity to meet colleagues before the Conference commences.

Conference Gala Dinner
Date: Tuesday 15 September 2015
Pre-dinner drinks
Time: 7.00pm – 7.30pm
Location: Pre-function area, Level 2
Dinner
Time: 7.30pm – midnight
Location: Crown Conference Halls 1 – 3

The Conference Gala Dinner is the highlight of the CleanUp social program and includes recognition of industry excellence with the announcement of the 2015 CARE Award winner. Ticket purchases include a three course meal, drinks and a fantastic line up of entertainment.

Proudly sponsored by GHD

CONFERECE CENTRE FLOORPLAN
## CleanUp 2015: Conference Program Overview

### September 2015

#### Sunday, 13 September 2015

- **8.20 – 17.30**: Vapour intrusion
- **17.00 – 17.30**: Welcome reception - Level 2, Pre-function area
- **17.30 – 17.45**: Official conference opening
- **17.45 – 18.45**: Brian Robinson memorial lecture presented by Cheryl Batagol, Chairman, EPA Victoria

#### Monday, 14 September 2015

- **8.30 – 10.10**: Advances in bioremediation
- **10.40 – 12.20**: Advances in bioremediation
- **13.20 – 15.00**: Bioavailability/bioaccessibility of contaminants
- **15.10 – 17.00**: Bioavailability/bioaccessibility of contaminants
- **17.10 – 18.10**: Drinks and poster session

#### Tuesday, 15 September 2015

- **8.30 – 10.10**: Advances in site characterisation
- **10.40 – 12.20**: Advances in site characterisation
- **13.20 – 15.00**: Remediation panel
- **15.10 – 17.00**: globalCARE
- **17.10 – 18.10**: Poster session
- **18.00 – 19.30**: Gala dinner
- **19.30 – 00.00**: Poster session

#### Wednesday, 16 September 2015

- **9.00 – 10.40**: National remediation framework
- **11.10 – 12.50**: Climate change and remediation
- **13.40 – 15.20**: Climate change and remediation
- **15.50 – 16.30**: Closing plenary lecture: Professor Campbell Gemmell

#### Thursday, 17 September 2015

- **8.20 – 17.30**: Technical tour (a former service station, a thermal treatment facility, a leading instrumentation company, and a leading environmental laboratories)

### Conference Overview | Sunday - Thursday

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<td>8.30 – 10.00</td>
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- **Meeting Room 11 (M11)**: Sustainable remediation practice and benefits
- **Meeting Room 12 (M12)**: Assessment of vapour intrusion
- **Meeting Room 13 (M13)**: Design optimisation of environmental challenges

- **Vapour intrusion**: Metal(loid) assessment and remediation in soil and water
- **On-site remediation of contaminated land**: Impact of contaminants on human health
- **Mine site remediation, revegetation and rehabilitation**: Impact of contaminants on human health
- **On-site remediation of contaminated land**: Advances in human health risk assessment
- **Contaminated land regulation and site audit process – clearing up the misunderstandings**: Urban renewal
- **Advances in ecological risk assessment**: Advances in ecological risk assessment
- **Data quality issues – different perspectives**: Contaminants of emerging concern
- **Data quality issues – panel discussion**: Reducing uncertainty and risks in environmental investigations
- **Advances in analytical measurement and methods**: Contaminants of emerging concern
- **Role of measurement in supporting policy**: Ground gas
- **Risk assessment of contaminants**: Development of assessment criteria
- **Mine site remediation, revegetation and rehabilitation**: Reuse and rehabilitation of landfills
- **Integration of LNAPL & DNAPL site characterisation**: Sustainable remediation
- **In-situ volatile organic compounds (VOCs) in groundwater**: Community consultation and contaminated site remediation
- **Remediation and management of LNAPL in unsaturated and saturated zones**: Advances in waste treatment and management
- **Risk assessment of contaminants**: Early career researchers - Presentations
- **Site remediation, revegetation and rehabilitation**: Harnessing the value of waste

- **Pre-dinner drinks - Level 2, Pre-function area**
- **Gala dinner**
This is a one day course aimed at providing training in the assessment of vapour intrusion (VI) in Australia. The course will focus on VI issues associated with chlorinated and petroleum hydrocarbons. It will draw on guidance available in Australia (within the NEPM and CRC CARE technical reports) as well as international experiences in VI assessment and management.

Workshop 4: Sustainable remediation practice and benefits
Coordinated by: Garry Smith
Time: 08:30 – 12:30
Location: Meeting Room 12 (M12)

A SURF ANZ-facilitated half-day workshop on sustainable practices in remediation on the why and how of undertaking remediation more sustainably, what is happening internationally, what the available tools add to site, community and client deliverables, and its relevance to the regulatory process. To include description and application of relevant remediation planning and design methods, tools, and regulatory/stakeholder engagement attributes, including concepts within the draft Sustainable Remediation ISO due to be publicly exhibited in late 2015.

Workshop 6: Data review basics
Coordinated by: Kelly Perkins
Time: 13:00 – 17:00
Location: Conference Hall 2 (CCH2)

Understanding the quality of analytical data is critical for determining if it is appropriate for its intended use. This workshop will take delegates through the basics of quality control procedures employed during field sampling and laboratory analysis and share an effective tool for basic quality data reviews of analytical laboratory data. The course will also include a "hands-on" training session to apply the data review tool to an actual environmental analytical laboratory report.

Workshop 8: Health risk assessment of contaminated sites with multiple chemicals of concern
Coordinated by: Brian Priestley
Time: 13:00 – 17:00
Location: Meeting Room 11 (M11)

Health risk assessment (HRA) generally uses toxicity data where chemicals have been administered as single entities using fixed dose rates. Contaminated sites often involve exposures that occur simultaneously or consecutively with multiple chemicals and doses varying over time. Assessment of such complex situations presents a real challenge to toxicologists and risk assessment professionals. This workshop will address the basic concepts of 'mixtures toxicology', including determination of whether dose-additive, response-additive, assumption of independent actions, or assessment of model mixtures provides the optimum methodology for aggregating risk in such circumstances.

Workshop 5: Use and measurement of mass flux and mass discharge
Coordinated by: Naji Akladiss
Time: 13:00 – 17:00
Location: Conference Hall 3 (CCH3)

As part of this half-day workshop, new Australian guidance developed by CRC CARE will be presented and will provide valuable insights on how the use of mass flux and mass discharge can improve remedial efficiency, define endpoints for achieving site closure, and reduce site management costs within Australia. This course will be presented in conjunction with leading international experts on the use of mass discharge and mass flux concepts, and who were involved in the preparation of the Interstate Technology & Regulatory Council (ITRC), 2010. Use and Measurement of Mass Flux and Mass Discharge guidance that has set the international benchmark for the use of this technology.

Workshop 7: Design optimisation of environmental challenges
Coordinated by: Larry M. Deschaine
Time: 13:00 – 17:00
Location: Meeting Room 12 (M12)

Those responsible for resource mining, water resources, environmental design, mitigating subsurface safety hazards and designing remediation projects are looking for tools that will help them find acceptable, efficient and effective solutions to complex planning challenges. Developing an optimal design requires consideration of cost, benefit, technological readiness and uncertainty risk. This course demonstrates the technology and methods available to enable practitioners to develop optimal solutions for individual projects – as well as program portfolios – with the transparency for stakeholders to review and accept them for use.

Workshop 3: In situ bioremediation for source treatment of chlorinated volatile organic compounds (VOCs) in groundwater
Coordinated by: Eric Kern
Time: 08:30 – 12:30
Location: Conference Hall 2 (CCH2)

This half-day workshop will focus on site characterization and key design considerations related to amendment composition and concentration that influence the ability to achieve optimal concentrations of amendments within a treatment area to support efficient microbial reductive dechlorination processes. Case studies from Australia and the USA will be presented on the 'real-world' considerations for the implementation of bioremediation.

Workshop 2: Integrated (LNAPL & DNAPL) site characterisation
Coordinated by: Naji Akladiss
Time: 08:30 – 12:30
Location: Conference Hall 3 (CCH3)

This half-day workshop will introduce concepts, and include discussions, of how we can no longer address NAPL and dissolved phase contamination differently, and that they need to be considered together when addressing any site where NAPL are, or may have been, present. Workshop participants will also be introduced to the Integrated Site Characterisation approach including the importance of high resolution characterisation; goals based characterisation objectives; contaminant phases; and the developing ITRC characterisation tools table.

Workshop 1: Assessment of vapour intrusion
Coordinated by: Jackie Wright, Dawit Bekele, Greg Davis, Blayne Hartman
Time: 08:30 – 17:00
Location: Meeting Room 13 (M13)

Our name may have changed from Thiess to Ventia, but our level of dedication to the community and environment remains. We have a 30 year history of safely delivering outstanding results on highly complex remediation projects for our clients and the community. Our focus on emerging contaminants and the use of innovative technologies and best practice community and environmental management practices is strongly reflected in the next 30 years and beyond.
<table>
<thead>
<tr>
<th>TIME</th>
<th>CONFERENCE HALL 1 (CCH1)</th>
<th>CONFERENCE HALL 2 (CCH2)</th>
<th>CONFERENCE HALL 3 (CCH3)</th>
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</thead>
</table>
| 8:30  | MA1 Advances in bioremediation  
Chair: Ryan Wymore, Geosyntec Consultants | MB1 International Committee on Contaminated Land (ICCL): Introduction and update from ICCL meeting  
Chair: Arminda Ryan, NSW EPA | MC1 Definition and characterisation of NAPLs in the subsurface  
Chair: David Mujir, Soweron |
| 8:50  | MA12 LESS IS MORE: AN EFFICIENT APPROACH TO IN SITU SOURCE TREATMENT USING ACCELERATED BIOREMEDIATION  
Eric Kern, Golder Associates Ltd | MB11 SUMMARY OF THE DISCUSSION AT THE ICCL MEETING  
Dominique Darmendrail, ICCL | MC11 VARIABILITY AND UNCERTAINTY ASSOCIATED WITH SAMPUNGS, ANALYSIS, AND RISK ASSESSMENT  
Naj Akladiss, Maine Department of Environmental Protection |
| 9:10  | MA12 MOLECULAR BIOLOGICAL TOOLS TO IDENTIFY AND OVERCOME OBSTACLES TO SOURCE ZONE BIOREMEDIATION AT COMPLEX SITES  
Andrew Wolken, Microbial Insights | MC12 CHARACTERIZATION OF CONTAMINANT DISTRIBUTION TO MEET SITE-SPECIFIC REMEDIAL OBJECTIVES AT SPATIAL RESOLUTIONS APPROPRIATE TO SUBSURFACE CONDITIONS  
Gary Wealthall, Geosyntec Consultants | MB12 INDUSTRY PERSPECTIVE AND COMMENTARY  
Peter Nadebaum, GHD Pty Ltd |
| 9:30  | MA13 UNRAVELLING MICROBIAL BIOREMEDIATION OF ORGANOPHOSPHATES: A METAGENOMIC SYSTEMS BIOLOGY APPROACH  
Thomas C Jeffries, University of Western Sydney | MC13 HIGH RESOLUTION SITE CHARACTERIZATION: THE PATH TO SUCCESSFUL REMEDIES AND REDUCED COST  
Danielle Marie Torresan, SA EPA |
| 9:50  | MA14 BIOREMEDIATION OF WEATHERED HYDROCARBON CONTAMINATED CLAY SEDIMENTS  
Kantha Ramadass, University of South Australia | MC14 UNAP TRANSMISSION – WHEN TO USE IT AND A NOVEL WAY TO REFINE VOLUME ESTIMATES  
Travis Teah, LRS | MC14 VAPOUR INTRUSION MITIGATION USING A DRAINAGE LAYER BELOW A LARGE COMMERCIAL FLOOR SLAB  
Rory Lane, BlackSphere Environmental |
<p>| 10:30 | MORNING TEA | | |</p>
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<thead>
<tr>
<th>TIME</th>
<th>ROOM</th>
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<tr>
<td>10:40</td>
<td>M11</td>
<td>MD2 Vapour Intrusion</td>
<td>Kriss Hansen, Semmensa</td>
<td>Geosyntec Consultants</td>
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<tr>
<td>10:40</td>
<td>M12</td>
<td>ME2 On-site remediation of contaminated land</td>
<td>Annette Nolan, Envirospac Services</td>
<td>DCA Associates</td>
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<td>10:40</td>
<td>M13</td>
<td>MF2 Impact of contaminants on human health</td>
<td>Ming Wong, Hong Kong Institute of Education</td>
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<td>11:20</td>
<td>M21</td>
<td>MC21 In situ bioremediation of chlorinated solvent sources</td>
<td>Hans Stos, Stos Consulting</td>
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<td>11:40</td>
<td>M22</td>
<td>MC22 Full scale bioremediation of trichloroethylene</td>
<td>Rachael Wali, Golder Associates Pty Ltd</td>
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<td>12:00</td>
<td>M23</td>
<td>MC23 Modelling natural attenuation: planning reliably by a long term program?</td>
<td>Martin Wagner, M&amp;P Geonova GmbH</td>
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<td>13:30</td>
<td>M3AS FROM BIOAVAILABILITY SCIENCE TO REGULATION OF ORGANIC CHEMICALS Kirsh Semple, Lancaster University</td>
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<td>13:40</td>
<td>M3AS COMPARISON OF ORAL BIOAVAILABILITY OF BENZ(a)PYRENE IN SOILS USING RODENT AND SWINE MODEL Lushan Duam, University of Newcastle</td>
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<td>14:00</td>
<td>M3AS ENHANCING THE IMMobilisation OF LEAD BY PHOSPHATE USING A BIODEGRADABLE CHELATE Peter Sanderson, University of Newcastle</td>
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<td>14:20</td>
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<td>M3B STATE OF THE POLICY Joe Heimerman, US Environmental Protection Agency</td>
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<td>14:40</td>
<td>M3A INFLUENCE OF SOIL AGING ON LEAD BIOAVAILABILITY MA Apkana Wijeratne, University of Newcastle</td>
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<td>M3C CROSSING THE GAP: STAR TREATMENT OF HETEROGENEOUS NAPL DISTRIBUTION David Major, Savon.</td>
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<td>M3B STATE OF THE PRACTICE Hans Streefkerk Consulting</td>
<td>M3C2 MODELING NAPL DEPLETION AT A FORMER XYLENE PROCESSING FACILITY (GERMANY) Grant Carey, Porewater Solutions</td>
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<td>M3C3 RECONSTRUCTING THE RELEASE AND LONGEVITY OF UNAP PETROLEUM FUEL IN THE FACE OF LIMITED DATA USING A MULTI-COMPONENT, MULTI-PHASE MODELLING APPROACH Kavish Sudha Lea, University of South Australia, CSIRO</td>
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<td>M3C4 USE OF UNAP TRANSMISSIVITY METRICS IN UNAP REMEDIATION IN THE NEWER VOLCANICS FRACTURED BASALT – A CASE STUDY Keith Maxfield, AECOM Pty Ltd</td>
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<td>M3C5 BIOFACADE REMEDIATION OF UNAP AND DISSOVED PHASE PETROLEUM IMPACTS ADJACENT TO COMMERCIAL BUILDINGS Geof Ellis, Golden Associates Pty Ltd</td>
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<td>M3C6 BIOFACADE REMEDIATION OF UNAP AND DISSOVED PHASE PETROLEUM IMPACTS ADJACENT TO COMMERCIAL BUILDINGS Geof Ellis, Golden Associates Pty Ltd</td>
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**MEETING ROOM 11 (M11)**

**Meeting Room 11 (M11)**

**M33 ON-SITE REMEDIATION OF CONTAMINATED LAND**

Chair: Jean Meulslm, Greenpac Services Sponsors: Enviaas Services / ISOTEC

- **M331 IN SITU REMEDIATION OF PETROLEUM HYDROCARBONs**
  - Chair: Tom O’Callaghan, Enviaas Services
  - Speakers:
    - Linda E. Teuscher, LA Teuscher & Associates
    - Pedro Bačačievskis, UFS Australia

**M332 COMMUNITIES AND VAPOUR INTRUSION**

- Chair: Lenny Segal, Centre for Public Environmental Oversight (CPEO)
- Speakers:
  - Charles Grimmein, Thines Services Pty Ltd
  - Lisa C. Lee, CIPRO

**M333 COMPLICATIONS OF AMBIENT SOURCES IN ASSESSING VAPOUR INTRUSION RISKS**

- Chair: Kathleen Prohaska, ERM Australia
- Speakers:
  - Mark H. H. Hunter, EMR
  - Chris G. H. Hunter, EMR

**M334 VAPOUR INTRUSION – THE VALUE OF STRINGENT NOTIFICATION AND REPORTING REQUIREMENTS IN THE MANAGEMENT OF COMMUNITY RISKS**

- Chair: Catherine Iwan, Golden Associates Pty Ltd
- Speakers:
  - Bruce Marvin, Geosyntec Consultants
  - Brian McMillan, Golden Associates Pty Ltd

**M335 MANGANESE ACTIVATED PERSULFATE (MAP) FOR THE TREATMENT OF A SOURCE ZONE: AN INNOVATIVE DUAL OXIDANT FORMULATION**

- Chair: Sophie Wood, ERM
- Speakers:
  - Barry N. Nolet, The University of Queensland
  - Brian McMillan, Golden Associates Pty Ltd

**M336 ADVANCES IN HUMAN HEALTH RISK ASSESSMENT**

- Chair: Brian Priestley, Monash University
- Speakers:
  - Linda E. Teuscher, LA Teuscher & Associates
  - Pedro Bačačievskis, UFS Australia

**MEETING ROOM 12 (M12)**

**Meeting Room 12 (M12)**

**M34 IN SITU REMEDIATION OF PETROLEUM HYDROCARBONs**

Chair: Tom O’Callaghan, Enviaas Services

- **M341 IN SITU REMEDIATION OF PETROLEUM HYDROCARBONs**
  - Chair: Tom O’Callaghan, Enviaas Services
  - Speakers:
    - Linda E. Teuscher, LA Teuscher & Associates
    - Pedro Bačačievskis, UFS Australia

**M342 COMMUNITIES AND VAPOUR INTRUSION**

- Chair: Lenny Segal, Centre for Public Environmental Oversight (CPEO)
- Speakers:
  - Charles Grimmein, Thines Services Pty Ltd
  - Lisa C. Lee, CIPRO

**M343 COMPLICATIONS OF AMBIENT SOURCES IN ASSESSING VAPOUR INTRUSION RISKS**

- Chair: Kathleen Prohaska, ERM Australia
- Speakers:
  - Mark H. H. Hunter, EMR
  - Chris G. H. Hunter, EMR

**M344 VAPOUR INTRUSION – THE VALUE OF STRINGENT NOTIFICATION AND REPORTING REQUIREMENTS IN THE MANAGEMENT OF COMMUNITY RISKS**

- Chair: Catherine Iwan, Golden Associates Pty Ltd
- Speakers:
  - Bruce Marvin, Geosyntec Consultants
  - Brian McMillan, Golden Associates Pty Ltd

**M345 MANGANESE ACTIVATED PERSULFATE (MAP) FOR THE TREATMENT OF A SOURCE ZONE: AN INNOVATIVE DUAL OXIDANT FORMULATION**

- Chair: Sophie Wood, ERM
- Speakers:
  - Barry N. Nolet, The University of Queensland
  - Brian McMillan, Golden Associates Pty Ltd

**M346 ADVANCES IN HUMAN HEALTH RISK ASSESSMENT**

- Chair: Brian Priestley, Monash University
- Speakers:
  - Linda E. Teuscher, LA Teuscher & Associates
  - Pedro Bačačievskis, UFS Australia

**MEETING ROOM 13 (M13)**

**Meeting Room 13 (M13)**

**M347 IN SITU REMEDIATION OF PETROLEUM HYDROCARBONs**

Chair: Tom O’Callaghan, Enviaas Services

- **M3471 IN SITU REMEDIATION OF PETROLEUM HYDROCARBONs**
  - Chair: Tom O’Callaghan, Enviaas Services
  - Speakers:
    - Linda E. Teuscher, LA Teuscher & Associates
    - Pedro Bačačievskis, UFS Australia

**M3472 COMMUNITIES AND VAPOUR INTRUSION**

- Chair: Lenny Segal, Centre for Public Environmental Oversight (CPEO)
- Speakers:
  - Charles Grimmein, Thines Services Pty Ltd
  - Lisa C. Lee, CIPRO

**M3473 COMPLICATIONS OF AMBIENT SOURCES IN ASSESSING VAPOUR INTRUSION RISKS**

- Chair: Kathleen Prohaska, ERM Australia
- Speakers:
  - Mark H. H. Hunter, EMR
  - Chris G. H. Hunter, EMR

**M3474 VAPOUR INTRUSION – THE VALUE OF STRINGENT NOTIFICATION AND REPORTING REQUIREMENTS IN THE MANAGEMENT OF COMMUNITY RISKS**

- Chair: Catherine Iwan, Golden Associates Pty Ltd
- Speakers:
  - Bruce Marvin, Geosyntec Consultants
  - Brian McMillan, Golden Associates Pty Ltd

**M3475 MANGANESE ACTIVATED PERSULFATE (MAP) FOR THE TREATMENT OF A SOURCE ZONE: AN INNOVATIVE DUAL OXIDANT FORMULATION**

- Chair: Sophie Wood, ERM
- Speakers:
  - Barry N. Nolet, The University of Queensland
  - Brian McMillan, Golden Associates Pty Ltd

**M3476 ADVANCES IN HUMAN HEALTH RISK ASSESSMENT**

- Chair: Brian Priestley, Monash University
- Speakers:
  - Linda E. Teuscher, LA Teuscher & Associates
  - Pedro Bačačievskis, UFS Australia
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<tr>
<td>15:30</td>
<td><strong>CONFERENCE HALL 1 (CCH1)</strong>: M4A Bioavailability / bioaccessibility of contaminants Chair: Kirk Sample, Lancaster University</td>
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<tr>
<td>15:30</td>
<td><strong>CONFERENCE HALL 2 (CCH2)</strong>: MB4 ICL: State of practice and policy - Emerging contaminants Chair: Bruce Kennedy, CRC CARE</td>
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<tr>
<td>15:30</td>
<td><strong>CONFERENCE HALL 3 (CCH3)</strong>: MC4 Remediation and management of DNAPL in unsaturated and saturated zones Chair: Naj Aliabadi, Maine Department of Environmental Protection</td>
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<tr>
<td>15:30</td>
<td><strong>MEETING ROOM 11 (M11)</strong>: MD4 Contaminated land regulation and site audit process – clearing up the misunderstandings Chair: Ross McFarland, AECOM</td>
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<td>15:30</td>
<td><strong>MEETING ROOM 12 (M12)</strong>: MB4 Urban renewal Chair: Paul Vogel, EPA Victoria</td>
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<td>15:30</td>
<td><strong>MEETING ROOM 13 (M13)</strong>: MB4 Advances in ecological risk assessment Chair: Kenneth Kiever, ERM</td>
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<td>16:10</td>
<td><strong>CONFERENCE HALL 1 (CCH1)</strong>: M4A1 REACHING A CONSENSUS ON BIOAVAILABILITY MEASUREMENTS; A CASE STUDY OF Pb in DUTCH TOWN SOILS Mark Cave, British Geological Survey</td>
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<td>16:10</td>
<td><strong>CONFERENCE HALL 2 (CCH2)</strong>: M4A1 STATE OF THE PRACTICE Charles Schaefer, CDM Smith</td>
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<td>16:10</td>
<td><strong>CONFERENCE HALL 3 (CCH3)</strong>: M4A1 REMEDIATION IN THE YEAR 2025; HOW CLEANUP AT DNAPL SITES MIGHT EVOLVE Charles Newell, GSI Environmental Inc</td>
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<tr>
<td>16:10</td>
<td><strong>MEETING ROOM 11 (M11)</strong>: MD41 CONTAMINATED LAND REMEDIATION – DETERMINING ENDPOINTS Erwin Banker, NSW EPA</td>
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<tr>
<td>16:10</td>
<td><strong>MEETING ROOM 12 (M12)</strong>: MC41 URBAN RENEWAL: PREPARING FOR A JOURNEY NOT PACKING FOR A DESTINATION Paul Nathaniel, University of Nottingham</td>
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<tr>
<td>16:10</td>
<td><strong>MEETING ROOM 13 (M13)</strong>: MF41 CHALLENGES WITH SOILS CONTAMINATED BY MIXED CONTAMINANTS: BIOAVAILABILITY, BIOREMEDIATION AND ECOTOXICITY CONSIDERATIONS Megharaj Mallavarapu, University of Newcastle / CRC CARE</td>
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<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 1 (CCH1)</strong>: M4A2 QUANTIFYING STATISTICAL RELATIONS BETWEEN COMMONLY USED IN VITRO MODELS FOR ESTIMATING LEAD BIOACCESSIBILITY Khai Hong Tan, University of Newcastle</td>
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<td>16:30</td>
<td><strong>CONFERENCE HALL 2 (CCH2)</strong>: M4A2 STATE OF THE POLICY C. Molenaar / E. Van Dyk</td>
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<td>16:30</td>
<td><strong>CONFERENCE HALL 3 (CCH3)</strong>: M4A2 COMBINING IN SITU THERMAL WITH BIOREMEDIATION FOR DNAPL TREATMENT: PERFORMANCE AND DESIGN CONSIDERATIONS Tamara McBeath, CDM Smith</td>
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<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 11 (M11)</strong>: MD42 PRACTICAL IMPLICATIONS FOR REMEDIATION WASTE MANAGEMENT RESULTING FROM NEW NSW REGULATIONS AND DRAFT SITE AUDITOR GUIDELINES Sophie Wood, ERM</td>
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<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 12 (M12)</strong>: ME42 MODELS AND LESSONS FOR DEVELOPING A CONTAMINATED SITE PROGRAM: AN INTERNATIONAL REVIEW Walter W. Kowalski, 8th Avenue Consulting</td>
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<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 13 (M13)</strong>: MF42 ASSESSMENT OF GROUNDWATER – SURFACE WATER INTERACTION IN A FRACURED BASALT AQUIFER SYSTEM TO SUPPORT ECOLOGICAL RISK ASSESSMENT Frederic Cource, Golder Associates Pty Ltd</td>
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<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 1 (CCH1)</strong>: M4A3 ASSESSMENT OF ARSENIC SPECIATION AND BIOACCESSIBILITY IN MINED IMPACTED MATERIALS Cameron Olson, University of South Australia</td>
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<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 2 (CCH2)</strong>: M4A3 IN SITU SMELTING COMBUSTION (STACS): PRE-DESIGN EVALUATION (PDE) FOR LEGIENP ACOL TAR IN AN AQUIFER David Major, Savion</td>
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<td>16:30</td>
<td><strong>CONFERENCE HALL 3 (CCH3)</strong>: M4A4 IN SITU SMOOTHERING COMBUSTION [STACS]: PRE-DESIGN EVALUATION (PDE) FOR LEGIENP ACOL TAR IN AN AQUIFER David Major, Savion</td>
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<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 11 (M11)</strong>: MD43 ENVIRONMENTAL AUDIT REPORTS – IS IT JUST ABOUT THE RED TAPE? Joanna Moisen, EPA Victoria</td>
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<td>16:30</td>
<td><strong>MEETING ROOM 12 (M12)</strong>: MF43 FISHERMANS BEND URBAN RENEWAL AREA – PROACTIVE GROUNDWATER BACKGROUND STUDIES German Ferrando-Miguel, EPA Victoria</td>
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<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 13 (M13)</strong>: MF44 LINES OF EVIDENCE USED IN ECOLOGICAL RISK ASSESSMENT OF CONTAMINATED GROUNDWATER Kirsten Broadgate, Golder Associates Pty Ltd</td>
</tr>
<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 1 (CCH1)</strong>: M4A4 COPPER DECREASES ARSENIC SOLUBILITY, GROWTH AND UPTAKE AT TOXIC DOSE LEVELS (IC30 AND EC50) Mohammed Kader, University of Newcastle</td>
</tr>
<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 2 (CCH2)</strong>: Discussion and questions</td>
</tr>
<tr>
<td>16:30</td>
<td><strong>CONFERENCE HALL 3 (CCH3)</strong>: M4A4 A WEIGHT OF EVIDENCE APPROACH TO IN SITU BIOREMEDIATION OF GROUNDWATER IN DNAPL SOURCE ZONES Jonathan Hs, AECOM</td>
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<td>16:30</td>
<td><strong>MEETING ROOM 11 (M11)</strong>: MD44 NW vs WA: WHO IS BETTER AT REGULATING CONTAMINATED LAND? Sarah Marsfield, Henry Davis York</td>
</tr>
<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 12 (M12)</strong>: MF44 COMMUNITY CONSULTATION IN AN URBAN RENEWAL PROJECT AND COMPETING OBJECTIVES Vanessa Bryant, Ramsay Environ Australia Pty Ltd</td>
</tr>
<tr>
<td>16:30</td>
<td><strong>MEETING ROOM 13 (M13)</strong>: MF44 ASSESSMENT OF WEATHERED HYDROCARBON RESIDUAL TOXICITY USING ENERMAC AUSTRALIAN FLORA AND FAUNA Muhammad Akif Islam Khan, University of South Australia</td>
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<td>17:30</td>
<td><strong>DRINKS AND POSTER SESSION</strong></td>
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| 8:30 - 10:10 | CONFERENCE HALL 1 (CCH1)  
TA1 Advances in site characterisation  
Chair: Gary Wealthall, Geosyntec Consultants |
|        | CONFERENCE HALL 2 (CCH2)  
TBI Defence Symposium  
Chair: Peshant Sivanandan, CRC CARE |
|        | CONFERENCE HALL 3 (CCH3)  
TC1 Risk based land management  
Chair: Prashant Sivanandan, CRC CARE |
| 8:35   | TA11 USING IN SITU REMEDIATION (SIR-MT30A5) MODEL TO ESTIMATE RACE-DIFFUSION TIMEFRAME FOR THIN SILTS AND CLAYS  
Grant R. Carey, Forewater Solutions |
| 8:50   | TA12 FORMER CLANDESTINE DRUG LABORATORIES – HOW CONTAMINATED ARE THEY?  
Jackie Wright, Enfasis  
DEFENCE SYMPOSIUM - INVITATION ONLY |
| 9:10   | TA13 WHEN CONCEPTUAL SITE MODELS ARE WRONG – A CASE STUDY  
Peneleope R. Woodberry, Golder Associates Pty Ltd  
DEFENCE SYMPOSIUM - INVITATION ONLY |
|        | TC11 RISK BASED LAND MANAGEMENT: WHAT IT IS, WHAT IT IS NOT  
Paul Nathaniel, University of Nottingham |
| 9:30   | TA14 ASSESSING BACKGROUND CONCENTRATIONS OF INORGANIC CONTAMINANTS IN THE BRIGHTON GROUP AQUIFER, SOUTHEAST MELBOURNE  
Megan Caffrey, AGLA Victoria  
TC12 SUSTAINABLE DEVELOPMENT OF BROWNFIELDS  
Sureshavad Rao, Global Institute for Energy, Environment and Sustainability |
| 9:50   | TA15 PERFORMANCE TESTING OF SUPER OXIDIZED WATER GENERATION AND DELIVERY METHODS  
Jessica K. Evers, Golder Associates Pty Ltd  
TC13 PREDICTIVE UNAPL CONCEPTUAL SITE MODEL DEVELOPMENT TOOLS IN SUPPORT OF MORE SUSTAINABLE RISK-BASED UNAPL SITE MANAGEMENT  
Matthew Rouseaux, GHQ Pty Ltd |
<p>| 10:30 - 10:40 | MORNING TEA |</p>
<table>
<thead>
<tr>
<th>Time</th>
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<th>Conference 2 (CCH2)</th>
<th>Conference 3 (CCH3)</th>
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<tr>
<td>10:40 - 12:20</td>
<td>TA2 Advances in site characterisation Chair: Tamia Weaver, DRM</td>
<td>T2C Case studies – contaminated site assessment, remediation and management Chair: Raghava Davija, URS</td>
<td>TA2 FIRST APPLICATION OF THE SUPER DESIGNATED WATER (SDW) TECHNOLOGY IN AUSTRALIA: CASE STUDY FOR SANDY SOILS Paolo Arcidiacono, Golder Associates Pty Ltd</td>
</tr>
<tr>
<td>10:40</td>
<td>TA23 RECENT DEVELOPMENTS IN IDENTIFICATION OF UNKNOWN CONTAMINATION SOURCES AND MONITORING NETWORK DESIGN FOR CONTAMINATED GROUNDWATER SYSTEMS Brijin Datta, James Cook University</td>
<td>T2C1 POINT CODE THERMAL DESCRIPTION REMEDIATION PROJECT W1 Magnus, Enviropacific Services</td>
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<td>11:00</td>
<td>TA2 ANALYZE IDI DETECTION METHOD AND DEVICE (probeCARE) Liang Wang, University of Newcastle</td>
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<td>11:40</td>
<td>TA22 EVALUATION OF STATISTICAL AND GEOCHEMICAL METHODS FOR DISTINGUISHING SOIL CONTAMINATION FROM BACKGROUND CONCENTRATIONS Hannah Middixen, RMIT University</td>
<td>T2C4 COST EFFECTIVE CUTFEP REMEDIATION AND METRICS UTILISING UAFP, TRANSMISSIVITY David Jackson, Environmental Strategies</td>
<td>T2C2 INSTALLATION AND PILOT TRIAL OF SOIL VAPOUR EXTRACTION (SVE) FROM A HORIZONTAL WELL IN THE NEWER VOLCANIC BASALT BREATH AND OPERATING PLANT BUILDING Patrick Clarke, Armours Pty Ltd</td>
</tr>
<tr>
<td>12:00</td>
<td>TA24 THE USE OF CONTAMINANT MASS FLUX AND MASS DISCHARGE TO SUPPORT GROUNDWATER REMEDIATION AT A HISTORICAL GASWORKS, BARANGAROOL SYDNEY AUSTRALIA Graham Hawkes, AECOM</td>
<td>T2C5 DEVELOPMENT OF TECHNOLOGY FOR REMOVAL OF URANIUM FROM CONTAMINATED SOIL USING INDOOR ELECTROREDOX DECANTATION EQUIPMENT Gya-Nam Kim, Korea Atomic Energy Research Institute</td>
<td>T2C3 RISK-BASED MANAGEMENT AND REMEDIATION FOR BENZOPHENONE Pieter Naidoo, GHD Pty Ltd</td>
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<td>12:20 - 13:20</td>
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TUESDAY | 13:20 - 15:30

CONFERENCE HALL 1 (CCH1)  CONFERENCE HALL 2 (CCH2)  CONFERENCE HALL 3 (CCH3)

13:20 – 15:00
TAS Remediation panel
Chair: David Reynolds, Geosyntec Consultants / David Thomas, Chevron
Sponsor: Geosyntec Consultants

TBS Defense Symposium

TCS Case studies – contaminated site assessment, remediation and management
Chair: Louise Cartwright, Envispec Services

TC31 LONG-TERM BIOREMEDIATION AND MANAGEMENT FOR A CO-SINGLEL CHLORINATED SOLVENT AND 1,4-DIYXANE SOURCE AREA AND PLUME
Ryan Wyman, Geosyntec Consultants

TC32 TOWARDS SUSTAINABLE REMEDIATION IN THE 21ST CENTURY: DEFINED MECHANOCHEMICAL REDUCTIVE DEHALOGENATION AT ROOM TEMPERATURE IN A BALL MILL
Volkar Brueh, Delftia University of Applied Sciences

TC33 QUANTIFYING THE MASS OF PETROLEUM HYDROCARBON CONTAMINANTS DEGRADED BY MICROBIAL PROCESSES AT AN ACTIVE REMEDIATION SITE
Stephen Cambridge, Coffey

TC34 BETTER MANAGEMENT OF REMEDIATION PROCESS UNCERTAINTY
Christian M. Brown, Geolab Associates Pty Ltd

TC35 ADVANCES IN FIELD SAMPLING: NO-FLOW VERSUS LOW-FLOW
Clare Howie, WSP Parsons Brinckerhoff

13:40
The panel will consist of representatives from industry, consulting, research, and regulatory bodies. This is an interactive session discussing various environmental topics of interest. The session will include brief presentations by panel members followed by a moderated discussion and debate. Audience participation technology (keep up clickers) will be available for attendees.

DEFENCE SYMPOSIUM – INVITATION ONLY

14:20

TE32 DETERMINATION OF TOTAL RECOVERABLE HYDROCARBONS (TRH) IN SOIL USING SOXHLET EXTRACTION AND GC-FID
Gabriela Savovec, National Measurement Institute

TE33 TOTAL RECOVERABLE HYDROCARBONS IN WATERS: A CHEMIST’S PERSPECTIVE ON THE ANALYSIS OF SEMIVOLATILE PETROLEUM HYDROCARBONS
Marc Centner, ALS Environmental

TE34 DETERMINATION OF POLYCYCLIC AROMATIC HYDROCARBONS IN SPILLED AND AGED SOIL USING MODIFIED QUANTITATIVE AND QUANTITATIVE GC CHROMATOGRAPHY WITH MASS SPECTROMETRY
Vincent Lai, University of Queensland

14:40

MEETING ROOM 11 (M11)  MEETING ROOM 12 (M12)  MEETING ROOM 13 (M13)

TE33 Development of assessment criteria
Chair: Scott Fraser, PerkinElmer
Sponsor: PerkinElmer

TE32 APPLICATION OF SITE SPECIFIC ADSORPTION ISOERTHES FOR DRIVING SOIL REMEDIATION GOALS PROTECTIVE OF GROUNDWATER – TOOWOOMBA GASWORKS CASE STUDY
Barry Mann, GHD Pty Ltd

TE31 REUSE AND REHABILITATION OF LANDFILL: TECHNICAL AND REGULATORY ISSUES
Chair: Tim Marshall, Coffey

15:00 – 15:30
AFTERNOON TEA

TE32 REVIEW OF ECOLOGICAL INVESTIGATION LEVELS FOR TOTAL PETROLEUM-HYDROCARBONS
Therese Manning, EnhiS5

TE34 A CASE FOR HLS – HEALTH INVESTIGATION LEVELS FOR INDIGENOUS AUSTRALIAN COMMUNITIES LIVING A TRADITIONAL LIFESTYLE
Emmylou F. Cooke, Thiess Services

TE35 UNAP + EXTRATION PRACTICABILITY ASSESSMENT – FORMER NAGGADIC WASTE LANDFILL, TULLAMARRINE, VIC, AUSTRALIA
Alex Schiavoni, EHS Support

AFTERNOON TEA
<table>
<thead>
<tr>
<th>Time</th>
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<th>Conference Hall 3 (CCH3)</th>
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<tbody>
<tr>
<td>15:30</td>
<td>TDA globalCARE</td>
<td>TDA4 Case studies – contaminated site assessment, remediation and management</td>
<td>TDA4 Development of assessment criteria</td>
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<td></td>
<td>Chair: Ravi Naidu, CRC CARE</td>
<td>Chair: Neil Proposch, Aurecon</td>
<td>Chair: Bruce Kennedy, CRC CARE</td>
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<td>Sponsor: CRC CARE</td>
<td>Sponsor: SURF ANZ</td>
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<td>15:45</td>
<td>TDA4 the Role of measurement in supporting policy</td>
<td>TDA4 THE ROLE OF MEASUREMENT AND QUALITY ASSURANCE IN SUPPORTING ENVIRONMENTAL POLICY AND REGULATION FOR CONTAMINATION MANAGEMENT</td>
<td>TDA4 Three reasons to consider sustainable remediation (SR): A global perspective and a mutual interest</td>
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<td>Chair: Paul Vogel, WA EPA</td>
<td>Cheryli Lim, National Measurement Institute / CRC CARE</td>
<td>Chair: John Hunt, EIC Activities</td>
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<td>Sponsor: SURF ANZ</td>
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<td>16:00</td>
<td>Launch of the Global Contamination and Remediation Enterprise (globalCARE). An overview will be presented by Ravi Naidu and Walter Kovalick</td>
<td>TDA4 Producing telephone numbers rather than real data for our multi-million dollar decision making: A review of decision certainty in contaminated land assessment and remediation</td>
<td>TDA4 REDUCING CONTAMINATED MATERIAL DISPOSAL VOLUMES – A SUSTAINABLE AND COST EFFECTIVE REMEDIATION APPROACH</td>
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<td>DEFENCE SYMPOSIUM – INVITATION ONLY</td>
<td>Ross McFarland, AECOM Australia Pty Ltd</td>
<td>Yanoe Bais, GHD Pty Ltd</td>
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<td>GHD Pty Ltd</td>
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<td>16:45</td>
<td>TDA4 Challenges in the measurement of PFOA and PFDA</td>
<td>TDA4 The value of the right rather than accurate measurement in characterising contaminated sites</td>
<td>TDA4 REMEDIATION IN THE CONTEXT OF GLOBAL SUSTAINABILITY</td>
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<td>Chair: Kevin Simpson, EHS Consultants</td>
<td>Peter Bed, GHD</td>
<td>Kevin Simpson, RHS Support</td>
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<td>Sponsor: GHD Pty Ltd</td>
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<td>17:00</td>
<td>TDA4 Direct injection of emulsified vegetable oil for chlorinated solvents remediation</td>
<td>TDA4 THE VALUE OF THE RIGHT RATHER THAN ACCURATE MEASUREMENT IN CHARACTERISING CONTAMINATED SITES</td>
<td>TDA4 Deriving criteria for DIOXINS AND FURANS</td>
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<td>Jessica Byrne, AECOM</td>
<td>Peter Bed, GHD</td>
<td>Olivia Fereder, WSP Parsons Brinckerhoff</td>
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<td>Melissa Saunders, AECOM Pty Ltd</td>
<td>Dave Reynolds, Geosyntec</td>
<td>Kevin Simpson, RHS Support</td>
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<tr>
<td>18:30</td>
<td>TDA4 Comparisons of in-situ self-sustaining smoldering combustion and SIP/S-IDC methods for the remediation of coal tar DNAPL, BACCHUS MARS, VICTORIA</td>
<td>TDA4 THE VALUE OF THE RIGHT RATHER THAN ACCURATE MEASUREMENT IN CHARACTERISING CONTAMINATED SITES</td>
<td>TDA4 reducing contaminated material disposal volumes – a sustainable and cost effective remediation approach</td>
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<td>Brian Selzle, CHQRH</td>
<td>Peter Bed, GHD</td>
<td>Yanoe Bais, GHD Pty Ltd</td>
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<td>19:00</td>
<td>TDA4 Role of measurement in supporting policy</td>
<td>TDA4 Development of assessment criteria</td>
<td>TDA4 Three reasons to consider sustainable remediation (SR): A global perspective and a mutual interest</td>
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<td>19:15</td>
<td>TDA4 The Role of Measurement and Quality Assurance in Supporting Environmental Policy and Regulation for Contamination Management</td>
<td>TDA4 National guidance for emerging contaminants at CRC CARE</td>
<td>Chair: John Hunt, EIC Activities</td>
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<tr>
<td>20:00</td>
<td>TDA4 The Role of Measurement and Quality Assurance in Supporting Environmental Policy and Regulation for Contamination Management</td>
<td>Jinyexia Ji, CRC CARE</td>
<td>Sponsor: SURF ANZ</td>
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<td>21:00</td>
<td>TDA4 Development of Assessment Criteria</td>
<td>TDA4 National Guidance for Emerging Contaminants at CRC CARE</td>
<td>TDA4 Three Reasons to Consider Sustainable Remediation (SR): A Global Perspective and a MutualInterest</td>
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<td>21:30</td>
<td>TDA4 The Role of Measurement and Quality Assurance in Supporting Environmental Policy and Regulation for Contamination Management</td>
<td>TDA4 National Guidance for Emerging Contaminants at CRC CARE</td>
<td>Chair: John Hunt, EIC Activities</td>
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<td>22:00</td>
<td>TDA4 Producing Telephone Numbers Rather Than Real Data for Our Multi-Million Dollar Decision Making: A Review of Decision Uncertainty in Contaminated Land Assessment and Remediation</td>
<td>TDA4 The Value of the Right Rather Than Accurate Measurement in Characterising Contaminated Sites</td>
<td>TDA4 Reducing Contaminated Material Disposal Volumes – A Sustainable and Cost Effective Remediation Approach</td>
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<td>TDA4 Development of Assessment Criteria</td>
<td>TDA4 National Guidance for Emerging Contaminants at CRC CARE</td>
<td>TDA4 Three Reasons to Consider Sustainable Remediation (SR): A Global Perspective and a MutualInterest</td>
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<td>23:00</td>
<td>TDA4 Producing Telephone Numbers Rather Than Real Data for Our Multi-Million Dollar Decision Making: A Review of Decision Uncertainty in Contaminated Land Assessment and Remediation</td>
<td>TDA4 The Value of the Right Rather Than Accurate Measurement in Characterising Contaminated Sites</td>
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<td>9:00</td>
<td>WA1 National remediation framework Chair: Kerry Scott, CRC CARE</td>
<td>WA1 Fractured rock sites Chair: Raghava Dasika, URS</td>
<td>WA1 Field measurement and sampling Chair: Bill Stenstrom, SGS Leeder Consulting</td>
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<td>Sponsor: CRC CARE</td>
<td>Sponsor: Geosyntec</td>
<td>Sponsor: SGS Leeder Consulting</td>
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<td>9:20</td>
<td>WA11 THE NATIONAL REMEDATION FRAMEWORK – TOWARDS HARMONISATION</td>
<td>WA11 SUBSURFACE CHARACTERISATION, MODELLING, MONITORING, AND REMEDIATION OF FRACTURED ROCKS</td>
<td>WA11 PERMEATION PASSIVE SAMPLING IN ENVIRONMENTAL ANALYSIS</td>
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<td>Bruce Kennedy, CRC CARE</td>
<td>Dave Reynolds, Geosyntec</td>
<td>Tedawsi Gerekci, University of Waterloo</td>
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<td>9:40</td>
<td>WA12 OVERVIEW OF THE GUIDELINES FOR PERFORMING COST BENEFIT AND SUSTAINABILITY ANALYSIS OF REMEDIAL ALTERNATIVES</td>
<td>WA12 GEOLOGICAL INVESTIGATION USING MULTIPLE LINES OF EVIDENCE TO DETERMINE LNAPL PRESENCE IN BEDROCK</td>
<td>WA12 A NEW METHOD FOR PERMITTER SAMPLING OF VOGS – ”U.S. EPA METHOD 321: VOLATILE ORGANIC COMPOUNDS FROM FUGITIVE AND AREA SOURCES”</td>
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<td></td>
<td>Susan Barnes, CH2M</td>
<td>Rhonda Haste, Kleinfield</td>
<td>Kristian Hansen, SGS</td>
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<td>10:00</td>
<td>WA13 SUMMARY OF FOUR NATIONAL REMEDIATION FRAMEWORK GUIDELINES</td>
<td>WA13 DEVELOPING CONCEPTUAL SITE MODELS FOR THE INVESTIGATION AND REMEDIATION OF FRACTURED ROCKS</td>
<td>WA13 RAPID ASSESSMENT OF A LARGE INDUSTRIAL MANUFACTURING SITE USING WMS-LU PASSIVE SOIL VAPOUR SAMPLERS</td>
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<td></td>
<td>Luke Clements, CH2M</td>
<td>Gary Wraith, Geosyntec Consultants Inc</td>
<td>Matthew B. Culler, Edge Group Pty Ltd</td>
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<tr>
<td>10:20</td>
<td>WA14 IDENTIFYING AND ASSESSING CONTAMINATED SITE REMEDIATION OPTIONS</td>
<td>WA14 FRACTURED NEWER VOLCANIC BASALT – UNDERSTANDING KEY PROPERTIES THAT INFLUENCE REMEDIATION EFFICACY</td>
<td>WA14 A COMPARISON OF PASSIVE SAMPLING AND LOW-FLOW OR BAILED SAMPLING RESULTS ACROSS A RANGE OF AUSTRALIAN HYDROGEOLOGICAL SETTINGS</td>
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<td></td>
<td>Peter Nadebaum, GHD Pty Ltd</td>
<td>Jonathan Meids, Gelder Associates Pty Ltd</td>
<td>Kenneth Kiefer, ERM</td>
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<tr>
<td>9:00</td>
<td>WA11 Risk assessment of contaminants Chair: Sophie Wood, ERN</td>
<td>WA1 Mine site remediation, revegetation and rehabilitation Chair: Naomi Bolan, University of Newcastle / CRC CARE</td>
<td>WA1 Community consultation and contaminated site remediation Chair: Rebecca Hughes, SA EPA</td>
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<td>Sponsor: Geosyntec</td>
<td>Sponsor: SGS Leeder Consulting</td>
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<tr>
<td>9:20</td>
<td>WA12 RAPID ASSESSMENT OF A LARGE INDUSTRIAN MANUFACTURING SITE USING WMS-LU PASSIVE SOIL VAPOUR SAMPLERS</td>
<td>WA12 EVALUATING CHROMIUM SPECIFICATION IN GROUNDWATER TO GUIDE RISK ASSESSMENT AND REMEDIATION DECISIONS</td>
<td>WA12 WEB BASED GUIDANCE FOR MINE WASTE REMEDIATION</td>
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<td>WA13 RAPID ASSESSMENT TO ADDRESS PUBLIC HEALTH CONCERNS REGARDING POTENTIAL EXPOSURE TO ANTIMONY</td>
<td>Tamee Wuover, ERN</td>
<td>Michael F. Sadowski, JWB Bioremediation</td>
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<td>WA13 MINE SITES – MANAGING THE NEUS BETWEEN ACTIVE MINE SITES AND CONTAMINATED LAND</td>
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<td>PHILOSOPHY</td>
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<td>Tim Chambers, Environmental Strategies</td>
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<td>9:40</td>
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<td>10:00</td>
<td>WA14 UTILIZATION OF BIOWASTES FOR MINE SPOILS REHABILITATION</td>
<td>WA14 UTILIZATION OF BIOWASTES FOR MINE SPOILS REHABILITATION</td>
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<td>Hasitha Wijesekara, University of South Australia</td>
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6th International Contaminated Site Remediation Conference
## Conference Hall 1 (CCH1)

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<tbody>
<tr>
<td>11:10</td>
<td>WA2 Climate change and remediation – Presentations</td>
<td>Chair: Vanessa Bryant, Ramboll Enviro</td>
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<td>WA2 Fractured rock sites</td>
<td>Chair: Grant Cary, Porewater Solutions</td>
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<td>WC2 Per-fluorinated compounds</td>
<td>Chair: Peter Storch, EHV Support Pty Ltd</td>
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## Conference Hall 2 (CCH2)

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<th>Session</th>
<th>Presenters</th>
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<tr>
<td>11:10</td>
<td>WA21 NATURALLY OCCURRING ABiotic DECOMPOSITION OF TII IN ROCK MATRICES</td>
<td>Charles Schaefer, CDM Smith</td>
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<tr>
<td></td>
<td>WC22 INNOVATIVE TECHNOLOGIES ON TREATING PERFLUOROALKYL SUBSTANCES</td>
<td>Dora Chiang, AECOM</td>
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## Conference Hall 3 (CCH3)

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<tbody>
<tr>
<td>11:10</td>
<td>WC21 PERFLUOROALKANE SULFONATE (PFOS) AND PERFLUOROALKANOIC ACID (PFOA): ECO TOXICITY AND ENVIRONMENTAL CONCERNS</td>
<td>Mahshid Malekansari, University of Newcastle</td>
</tr>
<tr>
<td></td>
<td>WC23 IS SHORT-CHAIN FLUOROTELUOROMERS PROVIDE A BETTER ENVIRONMENTAL SOLUTION AND SUPERIOR PERFORMANCE FOR CLASS B AND FIGHTING FOAM APPLICATIONS</td>
<td>Mike Wilson, Wilson Consulting</td>
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## Meeting Room 11 (M11)

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<th>Time</th>
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<tbody>
<tr>
<td>11:10</td>
<td>WC12 EVALUATING THE MOBILITY OF POLYMER-STABILIZED ZERO-VALENT IRON NANOPARTICLES (ZVI)</td>
<td>Laura Chadl, University of Technology Sydney</td>
</tr>
<tr>
<td></td>
<td>WC13 DEGRADATION OF MALATHION BY Bi-METALLIC Fe-In NANOPARTICLES GRAFTED ON PALYGORSITE</td>
<td>Benoy Sarkar, University of South Australia</td>
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## Meeting Room 12 (M12)

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<tbody>
<tr>
<td>11:10</td>
<td>WC14 1D AND 3D MNO2 FOR CATACTIC OXIDATION OF ORGANIC POLLUTANTS</td>
<td>Discussion</td>
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## Meeting Room 13 (M13)

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<tbody>
<tr>
<td>11:10</td>
<td>WC15 ENVIRONMENTAL FACTORS AFFECTING THE SELECTION AND USE OF FIRE-FIGHTING FOAMS – A FIRE SAFETY PERSPECTIVE</td>
<td>Brett Storms, UTC Building and Industrial Systems</td>
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## Lunch

12:50 – 13:40

LUNCH
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<th>Time</th>
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<tbody>
<tr>
<td>13:40</td>
<td>WA3 Climate change and remediation – Panel discussion</td>
<td>Chair: Scott Warner, Ramboll Environ</td>
</tr>
<tr>
<td>14:00</td>
<td>WB31 PROGRAMMATIC APPROACHES TO IDENTIFICATION AND MANAGEMENT OF PORTFOLIO WITH SITES POTENTIALLY IMPACTED BY PER AND PFOS/PERFLUOROALKYL SUBSTANCES</td>
<td>William H. Ogilviespoo, CRC CARE</td>
</tr>
<tr>
<td>14:30</td>
<td>WB32 DETERMINING THE MOST APPROPRIATE REMEDIATION STRATEGY FOR A CONTAMINATED SITE</td>
<td>Peter Nadebaum, GHD Pty Ltd</td>
</tr>
<tr>
<td>15:00</td>
<td>WC31 SCIENTIFIC ADVANCES AND INNOVATIVE APPLICATIONS IN ELECTROKINETIC REMEDIATION</td>
<td>Gordon C. C. Yang, National Sun Yat-Sen University</td>
</tr>
<tr>
<td>15:30</td>
<td>WC32 THE APPLICATION OF NANOPIRCE MODIFIED ELECTRODES IN MICROBIAL FUEL CELLS FOR ELECTRICITY GENERATION</td>
<td>Ying Cheng, University of Newcastle</td>
</tr>
<tr>
<td>15:40</td>
<td>WC33 THE ROLE OF IRON IN THE FATE AND TRANSPORT AND REMEDIATION OF PFAS</td>
<td>Peter Storch, EHS-Support</td>
</tr>
<tr>
<td>16:10</td>
<td>WC34 REMEDIATION DECISION MAKING AND MANAGING RISK AND UNCERTAINTY</td>
<td>Ian Brookman, Thiess Services Pty Ltd</td>
</tr>
<tr>
<td>16:40</td>
<td>WC35 TREATMENT OF PFCS IN SOILS, SEEDS AND WATER</td>
<td>Annette Nolan, Enviropacific Services</td>
</tr>
<tr>
<td>17:10</td>
<td>WC36 BIOREMEDIATION OF MERCURY BY BACTERIAL STRAINS ISOLATED FROM CONTAMINATED SOIL</td>
<td>Khandaker Rayhan Mahbub, University of South Australia</td>
</tr>
<tr>
<td>17:40</td>
<td>WC37 AN EXAMINATION OF RECENT FIELD RESULTS FROM IMPLEMENTATION OF ELECTROKINETIC REMEDIATION APPROACHES IN LOW PERMEABILITY SOILS</td>
<td>David A. Reynolds, Geosyntec</td>
</tr>
<tr>
<td>18:10</td>
<td>WC38 TWO-WAY INTERACTIONS BETWEEN ORGANOPHOSPHORUS (OP) COMPOUNDS AND SOIL MICROBIAL COMMUNITIES</td>
<td>Smiti Rayu, University of Western Sydney</td>
</tr>
<tr>
<td>18:40</td>
<td>WC39 EVALUATION OF COMMERCIALY AVAILABLE OXYGEN DISTRIBUTION TECHNOLOGIES</td>
<td>Cristin L. Bruce, Shell</td>
</tr>
<tr>
<td>19:10</td>
<td>WC40 NUTRIMENT MANAGEMENT IN ABATIOM WASTEWATER IRRITATED SOIL – BIORMIX AND ENERGY PRODUCTION</td>
<td>Balaji Seshadri, University of Newcastle / CRC CARE</td>
</tr>
<tr>
<td>19:40</td>
<td>WC41 EFFECT OF PHOSPHATE ON TOXICITY AND ACCUMULATION OF ARSENIC IN SOIL MICROBIAL</td>
<td>Mohammad Meshal Bahar, University of Newcastle</td>
</tr>
<tr>
<td>20:10</td>
<td>WC42 PHYSICS BASED MANAGEMENT OPTIMIZATION (PBMOTO) FOR WATER RESOURCE, ENVIRONMENTAL REMEDIATION AND DESIGN PROJECTS: THEORY AND APPLICATION</td>
<td>Larry M. Deschaine, HydroGeoLogic Inc</td>
</tr>
<tr>
<td>20:40</td>
<td>WC43 ASSESSING CLEAN AND GREEN ENERGY FROM ORGANIC WASTE IN AUSTRALIA</td>
<td>Jayant Keskar, CRC CARE</td>
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<td>21:10</td>
<td>WC44 ASSESSMENT OF NITROGEN LOSSES THROUGH NITROUS OXIDE (N2O) FROM A WASTEWATER IRRITATED SOIL</td>
<td>Yu Bon Man, The Hong Kong Institute of Education</td>
</tr>
<tr>
<td>21:40</td>
<td>WC45 USE OF FOOD WASTES TO REPLACE PART OF FISH MEAL IN FISH FEED PELLET FOR LOWING LEVELS OF MERCURY, DDT AND P-AH IN CULTURED FRESHWATER FISH</td>
<td>Raghupathi Madhavaneey, University of South Australia</td>
</tr>
<tr>
<td>22:10</td>
<td>WC46 NUTRIMENT MANAGEMENT IN ABATIOM WASTEWATER IRRITATED SOIL – BIORMIX AND ENERGY PRODUCTION</td>
<td>Balaji Seshadri, University of Newcastle / CRC CARE</td>
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**Wednesday, 16 September 2015**

**13:40 - 17:00**

**LAUNCH OF ELSEVIER JOURNAL ENVIRONMENTAL TECHNOLOGY AND INNOVATION**

Chair: Ravi Naidu

Panel discussion

- Campbell Gemmell, University of Glasgow
- Annette Nolan, Enviropacific Services
- Khandaker Rayhan Mahbub, University of South Australia
- David A. Reynolds, Geosyntec
- Mohammad Mezbaul Bahar, University of Newcastle

**CONFERENCE HALL 1 (CCH1)**

**CONFERENCE HALL 2 (CCH2)**

**CONFERENCE HALL 3 (CCH3)**

**WE3 Early career researchers / students – Presentations**

Chair: Kirk Semple, University of Lancaster

**WE33 EVALUATION OF COMMERCIALLY AVAILABLE OXYGEN DISTRIBUTION TECHNOLOGIES**

Cristin L. Bruce, Shell

**WE34 REMEDIATION DECISION MAKING AND MANAGING RISK AND UNCERTAINTY**

Ian Brookman, Thiess Services Pty Ltd

**WE35 TREATMENT OF PFCS IN SOILS, SEEDS AND WATER**

Annette Nolan, Enviropacific Services

**WE36 BIOREMEDIATION OF MERCURY BY BACTERIAL STRAINS ISOLATED FROM CONTAMINATED SOIL**

Khandaker Rayhan Mahbub, University of South Australia

**WE37 AN EXAMINATION OF RECENT FIELD RESULTS FROM IMPLEMENTATION OF ELECTROKINETIC REMEDIATION APPROACHES IN LOW PERMEABILITY SOILS**

David A. Reynolds, Geosyntec
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<td>SITE CONTAMINATION PRACTITIONERS AUSTRALIA CERTIFICATION SCHEME: THE FIRST 10 MONTHS Paul Banks, SERA Australia</td>
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<td>SOIL SCIENCE AUSTRALIA'S CONTAMINATED SITE ASSESSMENT AND MANAGEMENT CERTIFICATION FOR SOIL SCIENTISTS Louise Carmign, Soil Science Australia</td>
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<td>P03</td>
<td>CONTAMINANT MONITORING NETWORK DESIGN AND REDUCED UNCERTAINTY Mahsa Arvanddehkar, James Cook University</td>
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<td>P04</td>
<td>HEAD IN THE CLOUD: MOBILE COMPUTING TRANSFORMING THE DELIVERY OF MULTI-SITE INVESTIGATIONS Andrea Barker, Golder Associates</td>
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<td>ECOCHROMATOGRAPHY OF COMPLEX GEOCHEMICAL PROCESSES IN CONTAMINATED AQUIFER SITES USING SURROGATE MODELS AS APPROXIMATE SIMULATORS Hamid Rooshapooreh-Sadri, James Cook University</td>
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<td>WEB BASED GUIDANCE FOR UNDERSTANDING BIOCHEMICAL REACTIONS FOR THE TREATMENT OF NARRING INFLUENCED WATER Mark Szwarcowski, WWARN Australia, Education and Training Services</td>
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<td>ENVIRONMENTAL IMPACTS OF AQUEOUS FIRE FIGHTING FOAMS: AN OVERVIEW Pui-Dai, Tochukwu Okechukwu Research Institute</td>
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<td>PHOTODEGRADATION OF DYES: A FIREFIGHTING GOAL Athulnante Kundeyi, University of South Australia</td>
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<td>ACUTE TOXICITY OF CLASS A FIREFIGHTING PRODUCTS TO ALGAE Loganwaran Ponnaretnan, University of Newcastle</td>
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<td>REMOVED USED TO TREAT FIREFIGHTING FOAM CONTAMINANTS Richard Stover, Zeko Packaging</td>
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<td>CELL FIXATION TECHNIQUE FOR MEGASCOPIC VISUALISATION AND ELEMENTAL PROFILING OF CAY-BACTERIAL HUTCH Marahooda, Bosso, University of South Australia</td>
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<td>P14</td>
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<td>NANO-MATERIALS FOR PHOSPHORUS RECOVERY: SYNTHESIS, CHARACTERISATION AND MECHANISMS. Rakesh Kumar, University of South Australia</td>
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<td>NANO-ENCAPSULATED PESTICIDES: DREAM OR NIGHTMARE, AN ENVIRONMENTAL ASPECT Meera Neumann, University of Newcastle</td>
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<td>STAINLESS STEEL NANO PIPELINE AS A PHOTOCATALYST FOR WASTEWATER TREATMENT Jianwen Park, Hanyang University, South Korea</td>
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<td>SiO2 SULFUR INDUCED GRAPHITE CARBON NITRIDE AS NOVEL PHOTOCATALYSTS Heng Sun, Curtin University</td>
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<td>NANO-ZERO VALENT IRON-DECORATED ELECTROSPUN MEMBRANES USING A COAXIAL ELECTROSPINNING TECHNIQUE. PREPARATION AND GROUNDWATER REMEDIATION Leonid O. Tjingga, University of Technology Sydney</td>
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<td>PREPARATION AND SURFACE MODIFICATION OF Biochar FOR ENVIRONMENTAL REMEDIATION Safiya A., University of Technology Sydney</td>
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<td>WATER MANAGEMENT PRACTICES IMPACT ARESCU UPTAKE AND YIELD IN RICE Shrilal U, University of South Australia</td>
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<td>ECOSYSTEM ASSESSMENT OF HEAVY METALS AND DIES CONTAMINATED SITES Huiy Liang, Korea Institute of Toxicology</td>
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<td>BACKGROUND CONCENTRATIONS OF HEAVY METALS IN THE NEWER VOLCANIC ASH REFRESH THE MELBOURNE AREA Tian Xieay, La Trobe University</td>
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<td>LEAD TOXICITY AND PLANT UPTAKE IN CONTAMINATED SOIL: VALIDATED TRANSFER FUNCTIONS Dana Lamb, University of Newcastle</td>
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<td>P31</td>
<td>REMOVAL OF HEXAVALENT CHROMIUM USING GREEN SYNTHETIC AGAROSE-PE NPS HYDROGEL BEAD Jung, Lixin, University of South Australia</td>
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<td>EVALUATION OF ORGANIC-INORGANIC NITRATION TOXICITY IN COMBINED CONTAMINATED SOIL Jihyun Lee, Hanyang University</td>
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<td>PHYTOTOXICITY OF BUSH FIREFIGHTING FOAMS AND PUTATIVE ADJACENT ORGANIC MATTER ENVIRONMENTAL IMPACTS OF AQUEOUS FIRE FIGHTING FOAMS: AN OVERVIEW Pui-Dai, Tochukwu Okechukwu Research Institute</td>
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<td>USE OF HYDRAULIC TESTING TO EVALUATE DRAIN RECOVERY IN FOX CAVES SYSTEMS Evangelou Galatsos, CIRO and University of Technology Sydney</td>
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<td>P35</td>
<td>SOLVOLYSIS PASSAGE SAMPLING: STABILIZATION EFFECT TESTING AND VERIFICATION Jason Shepherd, Golder Associates</td>
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<td>PROBABILITY TESTING OF LABORATORY MEASUREMENTS IN ENVIRONMENTAL MATRICES. Paul Antoon, National Measurement Institute</td>
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<td>DEGRADATION OF HYDROCARBON IN THE ENVIRONMENT USING AROUSAL AS A BIOCHEMICAL REACTION ETHANOLYURACIL, HEPATOCARCINOMA INHIBITION Hui Sun, University of Newcastle</td>
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Delegates registered for this one-day tour will visit a remediated site and some of the best analytical and instrumentation facilities in Melbourne with guided tours by local experts.

Date: Thursday 17 September 2015
Time: 08:30 – 17:00
Departure: Crown Promenade Hotel

Tour itinerary

8:30  Bus departs Crown Promenade Hotel
A former service station

Golder Associates has installed a super oxygenated water (SOW) remediation system at a former service station for remediation of hydrocarbon impacted groundwater. As with any remediation, understanding the conceptual site model (CSM) is a critical element to successfully achieving the remedial goal.

This field visit is an opportunity to discuss the CSM, the development of remedial approach, view the SOW system and assess progress towards the remedial goal.

10:00  Morning tea

RENEX treatment and recovery facility

RENEX is Australia’s first permanently located Integrated Waste Treatment & Resource Recovery Facility for the treatment of contaminated soils and other Prescribed Industrial Wastes. The facility accepts waste materials which would otherwise have been destined for landfill disposal, to be treated and reused in sustainable applications.

The facility is over 10,000m² under roof and includes a storage area for over 30,000 tonnes of contaminated soil. The facility utilises Indirectly Heated Pyrolysis Rotary Kiln Technology for the treatment of these wastes.

13:30  Lunch hosted by PerkinElmer

13:30  ALS Environmental laboratories

ALS Environmental provides a full range of environmental analytical testing services. As part of the tour you will get a chance to: gain a brief insight into the ALS operations; get hands-on exposure to sample receipt, highlighting sample transport best practice; tour all production areas of the laboratory, including sample preparation, inorganics and organic laboratories; take a look inside a GC-MS instrument (gas chromatograph coupled to a mass spectrometer); get an insight into what to look for on a chromatogram (from an instrument operators perspective); observe a demonstration of vapour/air sampling equipment.

17:00  Return to Crown Promenade Hotel

Green Chemical Futures, PerkinElmer

The PerkinElmer Flagship Facility (established in 2015) at Monash’s Green Chemical Futures (GCF) building is an analytical facility that brings together the capability, innovation, and expertise of PerkinElmer for analytical technology with the research and training capabilities of Monash University.

It will be a hub for industry collaboration, graduate training, and an analytical service platform for Green Chemical Futures members and partners. It provides the foundation for future collaboration with PerkinElmer (exclusively) on a local and global level and Monash University. The Facility enhances Monash’s infrastructure capability to support the Chemicals and Plastics industry or innovation, whilst supporting research focussed on green chemistry.
The Conference Organising Committee thanks exhibitors for their support.

Exhibition opening times
The trade exhibition is located in the Crown Conference Centre, and will be open during the following hours:
Monday 14 September 8.30am – 5.00pm
Tuesday 15 September 8.30am – 5.00pm
Wednesday 16 September 8.30am – 4.00pm

Agilent Technologies – booth #27
Environmental labs around the world use technologies from Agilent to quickly and accurately detect trace levels of pesticides and a growing list of emerging contaminants that are showing up in the world’s rivers, lakes, and groundwater with increasing frequency.

Air-Met Scientific – booth #26
Air-Met Scientific is Australia’s prominent market leader in the supply and service of cost-effective and reliable workplace and environmental monitoring equipment and solutions.

ALS – booth #21
ALS is the largest and most diverse provider of commercial Environmental Analytical Services in Australia. Our services cater to a number of distinct environmental market sectors including drinking and water resources, site assessment and remediation, mining sector monitoring, Occupational Hygiene, acid sulfate soil, acid mine drainage, air, dust, soil gas, coal seam gas, mine gas and fugitive emissions plus sediment testing.

CRC CARE – booth #14
CRC CARE brings together industry, government, science and engineering to prevent, assess and clean up environmental contamination. World-class researchers at CRC CARE work with industry on global contamination issues, engaging with major end-users such as the mining and petroleum industries, environmental regulators and consultants, government organisations, and small-to-medium-sized enterprises. CRC CARE’s research is complemented by an education and training program that fosters the growth of highly qualified researchers, practitioners and decision-makers in the area of environmental risk assessment and remediation. www.crccare.com

The Newcastle Institute for Energy and Resources (NIER), a flagship institute of the University of Newcastle, is working alongside CRC CARE in tackling pollution problems from some of Australia’s most important energy, manufacturing and processing industries.
Earth Science Information Systems – booth #17
The Esri platform increases productivity & minimises project risk. Scalable on-site & cloud-based data capture, analysis & reporting solutions give your organisation the competitive edge.

Enqip – booth #12
Enqip deliver timely, cost effective equipment tailored to your needs. Our team are of consulting background, which enables understanding of your environmental and OH&S equipment requirements.

Envirolab – booth #16

Environmental Strategies – booth #25
Environmental Strategies is a professional services firm established to provide high quality, specialist consulting services in environment and water resource investigations, land and groundwater remediation, environmental management and environmental auditing.

Enviropacific Services – booth #22
Enviropacific Services is an environmental engineering company specialising in site remediation with offices across Australia. We apply leading-edge science, engineering and sustainability principles to our remediation design and create innovative, high-value solutions to our clients’ environmental challenges.

Eurofins | mgt – booths #5 & 6
Eurofins | mgt offers NATA/IANZ accredited laboratory services to the Environmental industry across Australia and New Zealand. Eurofins | mgt provides an extensive range of analytical capabilities across physical, chemical and microbiological based parameters. Through significant investment in automation and laboratory process optimization, clients are offered pro-active communication, high quality data and consistent market leading turnaround times.

FieldTech Solutions Pty Ltd – booth #3
FieldTech Solutions are manufacturers and suppliers of innovative and sustainable products for the environmental and groundwater industries. Products for remediation include pumps, skimmers, well installation material, and the ‘EOS’ range of bioremediation products.

Geosyntec – booth #2
We are engineers, geologists and scientists committed to the idea that technical leadership and client service are the foundations for producing solutions for our clients.

Groundwater Treatment Solutions – booth #10
Groundwater Treatment Solutions, established by McMahon Services, delivers practical and cost effective treatment solutions for groundwater and vapour contamination with guaranteed commercially driven outcomes.

Industrial Environmental Services – booths #28 & 31
Industrial Environmental Services is a full-service remediation contracting organisation. With a focus on site-specific, innovative solutions, our team is dedicated to resolving environmental issues. By working to industry best practice and understanding the client’s drivers and site constraints, we strive to enhance a project’s environmental sustainability objectives and reduce the cost to the client. Industrial Environmental Services is the link between the “idea” and “site engagement”.

Liberty Industrial – booth #15
Australia’s leading industrial deconstruction contractor, providing integrated solutions to heavy industrial entities for large scale, complex, demolition and remediation projects.

Lotsearch Pty Ltd – booth #24
Lotsearch are the leading providers of environmental and planning reports helping clients to identify risk when performing environmental assessments and due diligence.

McMahon Services – booth #10
McMahon Services is an award-winning remediation services contractor capable of delivering large-scale remediation of brownfield sites to treatment of persistent chemicals using a combination of leading-edge technology and hands on practical experience.

Menard Bachy Pty Ltd – booth #19
Menard Bachy is a specialist geotechnical contractor providing a comprehensive range of techniques for foundation, environmental and civil engineering applications throughout Australia and New Zealand.

National Measurement Institute – booth #1
NMI is the peak Australian body ensuring environmental measurements can be made correctly and recognized internationally, and provides diverse commercial environmental analytical services.

RENEW Group – booth #18
RENEX has developed Australia’s first permanently bicarbonate facility to treat contaminated soils and other PIW’s which would otherwise have been destined for landfill disposal.

SGS Australia Pty Ltd – booth #20
As the leading provider of environmental services, SGS offers a comprehensive range of routine and specialist solutions backed by our national laboratory network.

Site Contamination Practitioners Australia – booth #14
Site Contamination Practitioners Australia (SCP Australia) manages the Certified Practitioner Scheme for contaminated sites in Australia. Information about the national scheme and access to the self-assessment tool for certification will be available at our booth.

Spatial Vision – booth #7
CheckSite – Authoritative, property-specific information about environmental risks. You define the property and we deliver professional reports derived from the most reliable sources. 1300 36 67 96

Southern Cross University – booth #30
Environmental Analysis Laboratory (EAL) – Southern Cross University, is an innovative research, teaching and consultancy laboratory offering cutting-edge, quality assured competitive services nationally and internationally.

Thermo Fisher Scientific – booth #29
Thermo Fisher Scientific is the world leader in serving science, enabling customers to make the world healthier, cleaner and safer.

Ventia – booth #13
Ventia is the name for the newly combined Leighton Contractor Services and Thiess Services businesses focussing on providing telecommunications, infrastructure and utilities services. Our environmental services include remediation, monitoring, and health and hygiene.

RENEX has developed Australia’s first permanently located facility to treat contaminated soils and other PIW’s which would otherwise have been destined for landfill disposal. RENEX Group – booth #18

Environmental Analysis Laboratory (EAL) – Southern Cross University, is an innovative research, teaching and consultancy laboratory offering cutting-edge, quality assured competitive services nationally and internationally.

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Launching the globalCARE initiative here at CleanUp 2015!
Join us on Tuesday 15 September at 3.30pm | Conference Hall 1

WE PRODUCE & DISPOSE OF

400 MILLION TONNES

OF HAZARDOUS WASTE EVERY YEAR

LESS THAN

1%

OF THE WORLD’S

5 MILLION

POTENTIALLY CONTAMINATED

SITES

THAT’S THIS MUCH!

HAVE BEEN PROPERLY ASSESSED OR REMEDIATED

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