3-6 June 2008

ConSoil 2008

Stella Polare Congress Centre – Fiera Milano

Milano - Italy

Programme

10th International UFZ-Deltares/TNO Conference on Soil-Water Systems in cooperation with Provincia di Milano

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Deltares TNO

Provincia di Milano

The 10th International UFZ-Deltares/TNO Conference on Soil-Water Systems is organised by Helmholtz Centre for Environmental Research – UFZ and Deltares / Netherlands Organisation for Applied Scientific Research (TNO), in cooperation with Provincia di Milano, Italy.

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- German Federal Ministry of Education and Research (BMBF / DE)
- Netherlands Ministry of Housing, Spatial Planning and Environment (VROM / NL)
- Environ, Italy,
- TAMOIL, Italy.

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The Stella Polare Congress Centre – Fiera Milano, your venue for ConSoil 2008, features latest-generation multimedia and telecommunication technology. For more information, please visit www.fieramilano.it.

Disclaimer: The information given in this brochure is provisional. The ConSoil organisers are not responsible for misinterpretations and their consequences.

CONTENTS

Benvenuto, Welcome to Milano! 2
Introduction to ConSoil 2008 3
ConSoil 2008 Programme 4
Opening Session 4
Closing Session 4
Lecture Sessions (LeS) 4
A: Policies on soil-water systems (strategies, legislation, regulations, guidelines, etc.) 4
B: Functions & values of soil-water systems; understanding of processes 5
C: Site investigation: monitoring & screening 5
D: Risks & impacts 6
E: Remediation concepts & technologies 7
F: Sustainable & risk based land management 10
G: Complete cases 11
H: Coastal zones 11
Special Sessions (SpS) 12
SpS 1: Brownfields, bioenergy and biofeedstocks 12
SpS 2: Green remediation continued 12
SpS 3: Advances in the use of bioaccessibility data in quantitative risk assessment through practical applications 12
SpS 4: Environmental Technology Verification – an instrument to promote remediation and monitoring technologies (PROMOTE) ... 13
SpS 5: SNOWMAN: Umbrella for transnational research funding and cooperation 13
SpS 6: BeNeKempen 13
SpS 7: Towards harmonised human health risk assessment across Europe: Sorting the possible from the impossible 14
SpS 8: Technology development, an in-depth look at improving market uptake 14
SpS 9: From low to non-invasive site assessment and characterization: Model Driven Soil Probing, Site Assessment and Evaluation (EU project ModelPROBE) 14
SpS 10: ConSoil and the EU Framework Directive for Soil Protection 15
SpS 12: The role of risk based contaminated land management in sustainable urban regeneration 15
SpS 13: RISKBASE 15
SpS 14: A short training on modelling human exposure due to contaminated soil 16
SpS 15: International Science and Technology Center (ISTC), Moscow, Russia 16
SpS 16: Netherlands Soil Partnership (NSP) and China 17
SpS 17: Aquaterra: EUPOL & KNOWMAN 17
SpS 18: PRB's: Longivity and ENA effects 17
SpS 19: Funding Priority KORA – Retention and Degradation Processes Reducing Contaminants in Groundwater and Soil 17
SpS 21: Measuring Sustainability in remediation 17
SpS 22:Digital Soil Mapping and the implementation of Soil Thematic Strategy 17
SpS 23: Risk management of contaminated land, which way to go? 18
SpS 24: Management of groundwater protection areas 18
SpS 25: Technology development, an in-depth look at improving market uptake 18
TIME TABLE
SpS 26: Results of the NATO/CCMS Initiatives (2003-2007) and Proposed NATO/SPS 19
SpS 27: Integrating Landscape Ecology, Fate and Transport Modeling for Risk Mapping of Soil Contamination in Europe 19
SpS 28: Un approccio integrato per l''implementazione delle Direttive Europee sul Suolo e sulle Acque in Italia / An integrated approach towards the Implementation of the SFD and WFD in Italy 19
Country Sessions (CyS) 20
CyS 1: Flanders 20
CyS 2: Germany 20
CyS 3: The Netherlands 21
U.S. Environmental Protection Agency Technical Sessions 21
Italian Satellite Conference 24
Poster display & awards 24
Commercial exhibition 25
Technical tours 31
Social events 34
General information 35

BENVENUTO, WELCOME TO MILANO!

As chairman of the Province of Milan I am very pleased to give my welcome to all who visit the 10th conference ConSoil 2008, which this year will be held at the trade fair of Rho-Pero.

It is a honor for me to support this important event that fits into the international scene as the biggest European showcase and that by its vocation attracts thousands of visitors from various foreign countries.

In this brief welcoming, allow me to expand on two aspects of major importance for the content that Consoil 2008 wants to put forward during these days of meetings, that is the reclamation of contaminated sites and the technologies that allow such reclamation. I would like to stress how important the location chosen for the 10th International Conference is. The Convention Center Stella Polare inside the outer Polo Fiera Milano is in fact an example of the reclamation of land. Before having its final destination, this was a big refinery of Agip. Now this area has been reclaimed and transformed into the biggest exhibition in Europe. This and other areas have been realised thanks to technology and innovation in environmental activities for remediation of contaminated sites. The Province of Milan has always worked in recent years on the reclamation of contaminated sites, and this has allowed us to develop skills, relationships with other institutions and research institutes.

I conclude with the hope that the days of this event will be crucial moments of reflection and comparison to continue on a path that allows us to combine environmental protection with the technological development of our cities.

Filippo Penati
President of the Province of Milan

The spectacular Cathedral of Milan Duomo or the famous Scala Opera House are symbols of Milan. A trip to Milan is always an unforgettable experience: *www.milanoinfotourist.com*.

INTRODUCTION TO CONSOIL 2008

The ConSoil organisers and the Programme Committee would like to invite you to ConSoil 2008. The 10th ConSoil Conference will follow the successful programme of the previous ConSoil series. Besides the traditional ConSoil focus on contamination of soil and groundwater, ConSoil 2008 will again deal with the functioning of the soil-water systems. With this multi-focus, ConSoil 2008 will follow the EU policy that aims at the sound and integrated management of the soil-water systems in Europe. ConSoil will thus stay the platform to exchange news and knowledge between

- scientists
- policy makers
- consultants / service providers
- administrators
- site owners / river basin managers
- remediation companies / contractors
- banking and insurance companies.

The large numbers of abstracts submitted in the Call for Abstracts reflects the ongoing interest in the ConSoil themes:

A. Policies, strategies, legislation, regulations, guidelines
B. Functions & values; understanding of processes
C. Site investigation: monitoring & screening
D: Risks & impacts
E: Remediation concepts & technologies
F: Sustainable & risk based land management
G: Complete cases
H: Coastal zones.

The organisers UFZ, Deltares/TNO and Provincia di Milano and the international Programme Committee have selected interesting presentations in about 80 sessions.

ConSoil 2008 offers you:

- 3 1/2 days sessions (Tuesday 3 – Friday 6 June 2008) in 9 parallel sessions
- About 50 Lecture Sessions with about 200 oral presentations based on a selection out of about 500 submitted abstracts
- About 30 Special Sessions organised by research groups, organisations, project teams in an interactive setting with ample time for discussions with the audience
- Italian Satellite Conference; Italian speaking (Wednesday morning)
- 3 Country Sessions at which representatives of different countries will highlight developments of specific importance to their countries or regions (Flanders, Germany and The Netherlands)
- US EPA technical sessions
- About 300 posters
- 1/2 day technical tours/site visits to 5 sites in the Milan region (Thursday afternoon) or sightseeing tour (city walk)
- Commercial exhibition.

And additionally:

- Get-together on Tuesday, June 3 (incl. in conference fee)
- Bag with proceedings (CD) & booklet with abstracts of presentations
- Conference evening with dinner on Thursday, June 5 (not incl. in conference fee, EUR 60 per person).

CONSOIL 2008 PROGRAMME

The conference desk / registration counter opens every day (Tuesday - Friday) at 8.00 am.

OPENING SESSION

Tuesday, 3 June, 9.30 – 10.30 hrs, Auditorium

- Music: Orchestra Sinfonica Verdi di Milano
- Welcome by the ConSoil chairmen
- Filippo Penati, President of Provincia di Milano*
- Representative of Italian Ministry of the Environment*

**in Italian; translated into English*

CLOSING SESSION

Friday, 6 June, 15.45 – 16.30 hrs, Auditorium

- Poster awards
- Huub Rijnaarts, Deltares/TNO: Future research on soil water systems
- Holger Weiss, UFZ: Site management and societal demands
- Farewell by Provincia di Milano

LECTURE SESSIONS (LeS)

A Lecture Session (LeS) includes 4 oral presentations of 20 min. each. After each presentation, 2–3 minutes will be dedicated to questions from the audience.

Theme A: Policies, strategies, legislation, regulations, guidelines, etc.

LeS A.1 EU dimension

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Sagitarius

Chairman: H. Kasamas

- Marmo (EC/ Europa)
  Soil contamination in the new EU Soil Policy – KEYNOTE
- Vegter (COMMON FORUM, NL)
  Evolution of contaminated land policies in Europe: Towards a common flexible framework or a mandatory uniform approach?
- Haemers (SouRCE, Belgium)
  A sustainable European legal framework in Europe: The contractors' position
- Fokkens (Foundation for the Remediation of Dutch Railway Sites, NL)
  International railway union preparing for sustainable land use

LeS A.2 International dimension

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Sagitarius

Chairman: W. Blum

- Beaulieu (Environment and Parks Ministry, Canada)
  The Canadian policies on accounting for costs and liabilities related to government's owned contaminated sites
- Ogata, Masamichi (Geo-Environmental Protection Center (GEPC), Japan)
  Soil environmental business in Japan
- Rodrigues, Pereira, Duarte (University of Aveiro, Portugal, Hursthouse, (University of Paisley, UK)
  An information framework for supporting the implementation of the EU thematic strategy on soil protection in Portugal
- Jeong (Kunsan National University, Korea), Youn-Joo An (Konkuk University, Korea), Tae-Seung Kim (National Institute of Environmental Research, Korea)
  Construction of the chemical ranking of soil pollution substances (CROSS) and development of the Korean priority list of soil contaminants using CROSS

LeS A.3 Policy formulation and performance

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: M. Beaulieu

- Dries, Ceenaeme, Dedecker, De Naeyer, Gommeren, Van Dyck (OVAM, Belgium)
  Flanders soil policy: Where remediation and land management meet
- Pruijn, Walthaus (VROM, NL)
  Sustainable reuse of lightly contaminated soil and sediment as part of the soil protection policy
- Bertrand, Wahl (Ministry of Environment, Belgium)
  Contaminated land management policy in the urban region of Brussels
- Hill, Scott (Shell Global Solutions, UK)
  Site management in an evolving risk-based regime – examples from Italy

LeS A.4 Soil quality objectives

Thursday, 5 June , 09.00 – 10.30 hrs, Hall Scorpio

Chairman: F. Quercia

- Swartjes (RIVM, NL), Carlon (EC, DG JRC, Italy) – KEYNOTE
  Review and evaluation of national procedures for deriving soil screening values in the European Union. One step closer to harmonisation
- Provoost, Touchant, Bronders (VITO, Belgium)
  Differences between soil screening values for volatile organic contaminants
- Walthaus (VROM, NL), Wezenbeek (Grontmij, NL)
  New soil quality standards in Dutch legislation for sustainable use of lightly contaminated soils – a decentralised approach
- D'Aprile (APAT, Italy), Berardi (ISPESL, Italy), Baciocchi (University of Rome "Tor Vergata", Italy)
  Development of site-specific target levels for contaminated sites: Italian guidelines

LeS A.5 Science / policy interface

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: H. Kasamas

- Rügner, Bittens (Helmholtz Centre for Environmental Research – UFZ, Germany)
  TASK – The Terra-, Aqua- & Site Remediation Competence Centre and Network
- Scazzola, Ruggeri, Verdelocco, Battaglia (ENSR, Italia srl, Italy)
  Risk assessment and site redevelopment: New opportunities to manage large portfolios of MGP sites in Italy
- Wintersen, Posthuma (RIVM, NL)
  The risk toolbox – an instrument to support site-specific management of soil quality and soil use
- Orejudo, Mora, Carnicero (Agència Catalana de l' Aigua, Spain), Martí, López, De Pablo, Rovira (CTM, Spain)
  Developement of risk-based contaminant reference concentration based on protection of human health for the sustainable use of groundwater

LeS A.6 Social / economic aspects

Friday, 6 June, 11.00 – 12.30 hrs, Hall Aquarius

Chairman: F. Quercia

- *Hazebrouck (INERIS, France), Baumont (IRSN, France), Legout (Cire InVS, France), Marot (ADEME, France)*
  A guide and a toolbox for public involvement in the assessment and the management of contaminated sites

- Franken, van den Berg (Netherlands Environment Assessment Agency, NL), van Wezel (KIWA water research, NL), de Cleen (VROM, NL), Versluijs (Institute of Public Health and the Environment, NL)
  Societal cost-benefit analysis of the soil remediation operation in The Netherlands
- Beaulieu (Environment and Parks Ministry, Canada)
  The Quebec CLIMATSOL program
- De Naeyer, Van Dyck (OVAM, Belgium), Janssens, Dulière (BIM, Belgium), Fondaire, Dusart (DGRNE, Belgium)
  The soil remediation fund for petrol stations in Belgium

Theme B: Functions & values; understanding of processes

LeS B.1 Climate change: adaptation and research

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Scorpio

Chairman: J. van Wensem

- Olie, van Gaans-Godfroy, Nieuwenhuis, Rijnaarts (Deltares Soil & Water Systems, NL)
  The TOEMAAK principle as mitigation of climate change from green house gases in peat meadow districts – KEYNOTE
- Jeannée (Géovariances, France), Carré, Casalegno (European Commission, Italy), Bastrup-Birk (University of Copenhagen, Denmark)
  Modelling the local spatial variability of the forest soil mineralization process over Europe
- Andersson-Sköld, Göransson, Nyberg, Gustavsson (Swedish Geotechnical Institute (SIG), Sweden)
  Flooding and potential risks for pollutant spreading – emissions related to climate
- Bethge, Mohrlok (University of Karlsruhe, Germany)
  Risk assessment for contaminant leaching from flood water retention areas

LeS B.2 Land use and consequences for (ground)water

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Taurus

Chairman: J. van Wensem

- Bonten, Groenenberg, Römkens, Brus (Alterra, NL)
  Contribution of heavy metal leaching from agricultural soils to surface water loads
- Mohrlok, Bethge (University of Karlsruhe, Germany)
  Integrating urban soils and unsaturated zones into water and solute flux balances within the urban water cycle
- Alberti, Francani (Politecnico di Milano, Italy)
  Integrated water resources management: the Idroscalo lake case study near Milano city

LeS B.3 Beneficial microbial functions

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: B. Bone

- Ceja-Navarro, Rivera, Patiño-Zúñiga, Marsch, Dendooven (Cinvestav, Mexico), Govaerts (International Maize and Wheat Improvement Center (CIMMYT), Mexico)
  PCR-DGGE and phylogenetic approach to analyze the effect of agricultural practices on soil bacterial communities
- Rossetti, Tandoi (Water Research Institute, Italy) Aulenta, Majone (University "La Sapienza", Italy), Beretta (University of Milan, Italy)
  In-situ molecular tracking of dehalogenating bacteria: from microbial enrichments to field samples
- Volpe, Del Moro, Rossetti, Tandoi (IRSA CNR, Italy)
  High MTBE removal from a microbial consortium enriched at an Italian national interest site
- Càliz, Montserrat, Vial (University of Girona, Spain) Sierra, Marti, Sánchez, Cruanas, Garau (University of Barcelona, Spain)
  Chromium-resistant bacteria and TCP/PCP-resistant bacteria from a calcareous clayey soil: detection, identification, isolation and characterization of their behaviour at high pollutant concentrations

Theme C: Site investigation: monitoring & screening

LeS C.1 Sensors – 1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Aquarius

Chairman: J. Müller

- Neuhaus (FUGRO CONSULT GmbH, Germany), Grossmann, Laudel, Tischer, Müller (GICON, Germany) – KEYNOTE
  Dynamic assessment of contaminated sites using in-situ investigation techniques and conceptual 3D site models
- Conroy (Interstate Technology Regulatory Council, USA)
  Sensors: A new way to collect data for Environmental Decision-Making
- Bakker, Bouwknegt (Tauw, NL), Dijkstra (NEN-Environment, NL), van Ree (Geodelft, NL)
  Normalization approach field screening technologies
- Van Keer, Bronders, Touchant, Wilczek (VITO, Belgium)
  Application of the membrane interphase probe: an evaluation

LeS C.2 Sensors – 2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Aquarius

Chairman: N. Dueso

- Valle, Dijkshoorn (ERM, Belgium), Hodny (W.L. GORE Associates, MD, USA)
  Combining soil gas sampling and MIP investigation to optimize a conceptual site model
- Morris, Boult (University of Manchester, UK), Todman (Urban Vision Partnership Ltd., UK)
  Improved ground-gas risk prediction using in-borehole gas monitoring
- Martins Baessa, Ururahy Soriano (PETROBRAS/CENPES, Brazil), Oliva, Kiang (UNESP/Rio Claro, Brazil)
  Conductive geophysical anomalies associated with petroleum hydrocarbon biodegradation process in a non-saturated zone
- Raspa (University of Rome "La Sapienza", Italy), Marella (APAT, Italy), Zanatta (Consultant, Rome, Italy)
  An iterative sampling strategy for the identification of remediation volumes in contaminated sites

LeS C.3 Concepts – 1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: A. Dahmke

- Benoit (IFP, France), de Fouquet (ENSMP, France), Fricaudet, Carpentier (ARCADIS, France), Gourry (BRGM, France), Haudidier (VINCI TECHNOLOGIES, France), Lefebvre (ENSMP, France)
  Cross linked methodologies to assess the contamination extension of hydrocarbon polluted soil
- Boon, Ramsey (University of Sussex, UK), McKenna (Corus UK, UK), Yeo (Cybersense Biosystems, UK)
  The use of measurement uncertainty to assess the reliability of on-site field test kits for the investigation of contaminated land

- Norrman, Engelke (Swedish Geotechnical Institute (SGI), Sweden), Purucker (US EPA, USA), Stewart (University of Tennessee, USA), Back (GeoInnova, Sweden)
  Framework for optimizing the evaluation of data from contaminated soil in Sweden
- Rein, Dietrich (Helmholtz Centre for Environmental Research – UFZ, Germany), Bauer (Christian-Albrechts-University of Kiel, Germany)
  Temporal variability of groundwater flow conditions – Influence on point measurements and mass flux estimations

LeS C.4 Concepts – 2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: E. Robold

- Rein, Bittens, Popp, Dietrich (Helmholtz Centre for Environmental Research – UFZ, Germany), Holm, Rotard (Technical University of Berlin, Germany) – KEYNOTE
  Revitalisation of rural megasites – Adaptive strategies and technologies for risk-based site characterisation and monitoring
- Thomas, Ramsey, John (University of Sussex, UK) Barnes, Environment Agency, UK)
  Case study using a new experimental design for the quantification of contaminant heterogeneity in soils
- Martens, Walraevens (Ghent University, Belgium)
  Geo-electrical tomography and electromagnetical profiling as an effective scanning tool for detecting, defining groundwater contamination and monitoring contaminant remediation
- MacLeod, Ross, Harvey (Arcadis Geraghty & Miller International Ltd, UK), Burdick (Arcadis NV), Maggs (Akzo Nobel)
  Verification of in-situ soil remediation: Multiple lines of evidence

LeS C.5 Analytics – 1

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Scorpio

Chairman: M. Beaulieu

- Keijzer, Schuren (Tauw, NL), Hiller (Schlumberger Oil Field Services, USA)
  Soil heterogeneity and natural oxygen demand (NOD) towards permanganate: A Dutch case study
- Mao, Diels (VITO, University of Antwerpen, Belgium), Van De Weghe, Lookman, De Brucker, Vanermen (VITO, Belgium)
  Novel detailed group-type characterization method for petroleum hydrocarbons and its application for assessing remediation potential of oil contaminated soils
- Russold (ARCADIS Consult GmbH, Germany)
  Tracer test studies supporting the development of conceptual site models and remediation designs in fractured bedrock
- Aravena, Shouakar-Stash (University of Waterloo, Canada), Hunkeler (University of Neuchatel, Switzerland), Bjorklund (Erm, Environmental Resources Management, Usa)
  Application of compound-specific carbon and chlorine stable isotope for fingerprinting sources of chlorinated compounds in groundwater

Theme D: Risks & impacts

LeS D.1 Human exposure & assessment – 1

Friday, 6 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: J. Frauenstein

- Macklin, Earl (Atkins Limited, UK) – KEYNOTE
  Development of chronic human health soil assessment criteria for risks to trespassers
- Lijzen, Baars, Bakker, Brand, Oomen, Otte, Swartjes (National Institute for Public Health and the Environment (RIVM, NL)
  Site specific human risk assessment of soil contamination; how it was improved and can be applied
- Römkens (Alterra, NL), Franz, van der Fels-Klerx (RIKILT, NL)
  Exposure modeling as a tool to assess risks of cadmium in soil
- Errasti-Orozco (Labein Tecnalia, Spain), Sheetharam, Thomas (Cardiff University, UK)
  Integrated health impact analysis of a population affected by arsenic contamination in drinking water in Northern México

LeS D.2 Human exposure & assessment – 2

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Sagitarius

Chairman: B. Engeser

- Oorts, Van Sprang (EURAS European Center for Risk Assessment, Belgium), Smolders (University of Leuven, Belgium), Schoeters (ECI European Copper Institute, Belgium)
  A site specific ecological risk assessment for metals in soils
- Provoost, Touchant, Bronders (VITO, Belgium), Bosman (Ho geschool West-Vlaanderen, Belgium)
  Accuracy of five vapour intrusion models for VOC in the soil or groundwater
- Grøn, Oberender (DHI Water, Environment, Health), Simonsen (Eurofins Inc), Andersen (COWI), Rokkjær (Danish Environmental Protection Agency)
  Fraction based risk assessment of petroleum hydrocarbon contaminated soils
- Magee, Anderson, Haines, Longoni (AMEC Earth & Environmental, USA)
  Drinking water remedial goals for two pharmaceuticals in groundwater

LeS D.3 Ecological risk assessment

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: J. Müller

- Rein, Bittens (Helmholtz Centre for Environmental Research – UFZ, Germany)
  Multimedia environmental modelling for a risk-based implementation of biological in-situ methods
- Wagelmans (Bioclear Groningen, NL), Grotenhuis, (Wageningen University, NL)
  Pollutants in soils: What are actual risks and perspectives?
- Trett (Physalia Limited, UK/Spain), Thurgood (Environmental and Remediation Services Limited, UK)
  Assessment and monitoring of actual ecological effects; nematodes in the service of industry and regulators
- Maughan, Loveridge, Miori (CH2M HILL, Italy)
  Ecological risk assessment of chlorinated pesticides in an urban river

LeS D.4 Fate & transport – 1

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Libra

Chairman: V. Dries

- Comans (Energy Research Centre of The Netherlands (ECN), and Wageningen University, NL), Dijkstra, van der Sloot, Meeussen, Zomeren (ECN, NL) – KEYNOTE
  A consistent geochemical modelling approach for the long-term assessment of release from contaminated materials to soil and groundwater
- Elert (Kemakta Konsult AB, Sweden), Kleja, Jarvis (Swedish University of Agricultural Sciences, Sweden), Eliaeson (IVL Swedish Environmental Research Institute Ltd, Sweden), Gustafsson (The Royal Institute of Technology, Sweden), Wadstein, Enell (Swedish Geotechnical Institute (SGI), Sweden)
  Releases from contaminated sites – methods to assess leaching and transport
- Orsi, Pollard, Coulon (Cranfield University, UK), Turner, Walton (Volatiles Research Group, UK), Daly (National Grid Property, UK)
  Evaluation of vapour emissions aiming former gasholder decommissioning
- Enell, Andersson-Sköld, Hemström, Toomväli (Swedish Geotechnical Institute (SGI), Sweden)
  Creosote impregnated sleepers – an acceptable risk?

LeS D.5 Fate & transport – 2

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: A. Dahmke

- Werner, Hüsers, Lorbeer, Schönekerl (TU Dresden, Germany), Leibenath (UBV Umweltbüro GmbH Vogtland, Germany)
  Dynamic behaviour and natural attenuation potential of PAHs, BTEX in a tar oil contaminated site
- Grøn, J.B. Hansen (DHI Water • Environment • Health), N. Hansen (Eurofins Inc), Andersen (COWI), Rokkjær (Danish Environmental Protection Agency)
  Occurrence and risk assessment of NSO compounds in soils contaminated with petroleum products
- Held (ARCADIS Consult, Germany), Blotevogel (Colorado State University, USA)
  Heterocyclic aromatic compounds – assessment of substance properties and occurrence
- Tiehm, Sagner (Water Technology Center (TZW), Germany)
  NSO-heterocyclic aromatic compounds (NSO-HET): Ecotoxicity and biodegradability

LeS D.6 Decision making & risk assessment

Friday, 6 June, 09.00 – 10.30 hrs, Hall Libra

Chairman: E. Robold

- Ramsey (University of Sussex, UK)
  Uncertainty estimation to enable better site investigation and risk assessment
- Sagnelli, La Licata (Envi-Mod, Environment Park S.p.A., Italy), Ruggeri (Envi-Mod, Environment Park S.p.A., Torino & Politecnico di Torino, Italy)
  Scoring procedure and uncertainty propagation in scenario selection
- Birkel, Ningelgen (Headquarters United States Air Forces in Europe, Germany), Stapleton (Bhate Associates, Inc., USA), Salhotra (Risk Assessment & Management Group, Inc., USA), Schmidt (Moron Air Base, Spain)
  Development of a Risk Assessment Decision Support System for the risk assessment of suspected contaminated sites at U.S. Air Force installations in Europe
- Masi, Arlotti, Alberti (Foster Wheeler Italiana SpA, Italy)
  On some numerical implications of the additive principle in Cumulative Risk Assessment

LeS D.7 Bioavailibility & bioaccessibility

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Scorpio

Chairman: S. Boekhold

- Morgan, Macklin, Earl, Walker (Atkins Limited, UK)
  Chronic human health site specific assessment criteria development based on a detailed receptor behaviour survey at an allotment site, considering potential bioaccessibility
- Caboche (INERIS & URAFPA, France), Denys, Tack (INERIS, France), Feidt (URAFPA, France)
  Bioaccessibility and speciation of As and Pb in soils contaminated by two distinct anthropic activities
- Brand, Peijnenburg, Lijzen (RIVM, NL)
  Bioavailability in risk evaluation of soils. Suggestions for implementation
- Biasioli, Ajmone Marsan (University of Torino, Italy), Lepora, Pogliano, Rampi (Golder Associates, Italy)
  Estimation of natural background concentration of Co, Cr and Ni in a contaminated site in Piemonte, Italy

LeS D.8 Quality insurance in risk assessment

Friday, 6 June, 11.00 – 12.30 hrs, Hall Martini

Chairman: P. Nathanail

- Dries, Ceenaeme, Dedecker, De Naeyer, Gommeren, Van Dyck (OVAM, Belgium)
  Quality management makes or breaks contaminated land management policy
- de Groof (SIKB, NL), Ruwiel (Ministry of VROM, NL)
  No more rubbish in cleaning up the soil
- Carpels (ECO2 bvba, Belgium), De Naeyer, Ceulemans, Bogaert (OVAM, Belgium), Ide, Sweevers (OVB vzw, Belgium)
  Environment, health and safety in soil remediation: Achilles quality system
- Lud (Tauw GmbH, Germany), Bal (Tauw bv, NL)
  Making use of site-specific measurements

Theme E: Remediation: concepts & technologies

LeS E.1 In-situ chemical oxidation – 1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Taurus

Chairman: P. Bardos

- Plaisier (In-Situ Technieken, NL) – KEYNOTE
  BISCO, the benefits of a biological rebound and natural degradation after a treatment with chemical oxidation, results of tests and field
- Trötschler, Koschitzky, Limburg (VEGAS, University of Stuttgart, Germany), Saner, Tiehm (TZW, Germany)
  ENA of heterocyclic hydrocarbons using hydrogen peroxide and groundwater circulation wells – pilot application in the plume of a former gasworks
- Uyttebroek, Baillieul, Ross, De Moor, Van Geert, Gevaerts, Burdick (ARCADIS Belgium, Belgium), Vossen (In-Situ Technieken, NL)
  In-situ persulfate oxidation for a soil contamination of chlorinated ethenes
- Ciotti, Baciocchi (University of Rome "Tor Vergata", Italy), Cleriti, Chiavola (University of Roma "Sapienza", Italy)
  Peroxy acid as an innovative oxidant for the remediation of contaminated sediments

LeS E.2 In-situ chemical oxidation – 2

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Libra

Chairman: H. Vermeulen

- Carvel (MECX LLC, USA), Piepoli (ASTC, Italy)
  Multicomponent oxidizers for in situ remediation
- Hartog, van der Meulen (TNO, NL), Parjker (University of Guelph, Canada), Cavé, Al (University of New Brunswick, Canada)
  Optimizing in-situ chemical oxidation of residual DNAPL: geochemical controls and sediment oxidant demand
- Baciocchi, Ciotti (University of Rome "Tor Vergata", Italy), Capotorti, Innocenti, Nardella (ENI R&M, Italy)
  Pilot scale in-situ chemical oxidation treatment of a former refinery site
- Lee, Lamble, Sarr (WSP Group,UK)
  The bench scale and pilot testing of chlorinated hydrocarbons in delivering cost effective remediation by chemical oxidation: a case study in Switzerland

LeS E.3 Nanoscale iron

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman: W. Gevaerts

- Sethi, Tiraferri, Di Molfetta (DITAG – Politecnico di Torino, Italy)
  Nanoscale iron characterization and mobility enhancement by means of biogredable hydocolloids
- Braun, De Boer, Klaas (University of Stuttgart, VEGAS, Ger many)
  Nano-iron for in-situ groundwater and soil remediation: Experimental results on transport distances during injection
- Bendz, Carlsson, Enell, Suér (Swedish Geotechnical Institute (SGI), Sweden)
  Nanoscale zero valent iron for remediation of soil contaminated with arsenic and chromium: 1. Governing processes in a column scale experimental setup

- Zhang (Lehigh University, USA), Gill (PARS Environmental, Inc., USA), Ayyaswami, (TerraSure, USA)
  Transformation of persistent organic pollutants (POPs) with nanoscale bimetallic particles

LeS E.4 Thermal techniques – 1

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Sagitarius

Chairman: W. Gevaerts

- Koschitzky, Trötschler, Limburg (University of Stuttgart, VEGAS, Germany), Hirsch, Weiss (Helmholtz Centre for Environmental Research – UFZ, Germany) – KEYNOTE
  Steam-air-injection for in-situ groundwater and soil remediation: Pilot application at the former industrial site in Zeitz, Germany
- Betti, Colombo, Trezzi (ENVIRON ITALY S.r.l., Italy), Mozzi, Gattazzo (Syndial S.p.A, Italy)
  Assessing the effectiveness of the steam injection system in accelerating soil/water remediation: a case study
- Heron, Baker, LaChance, Bierschenk (TerraTherm, Inc., USA), Ploug, Faurbye (Krüger A/S, Denmark), Langford, Tully (AIG Engineering Group Ltd., UK)
  Thermal conduction heating for DNAPL removal in low-permeability soils and bedrock
- Taddeo, Flatley, Groher, Schwendeman (ENSR, USA), Susanni (ENSR, Italy)
  Applications of electrical resistance heating to a DNAPL-impacted site

LeS E.5 Thermal techniques – 2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman: V. Dries

- Baker, Heron, Tarmasiewicz, Bierschenk (TerraTherm, Inc., USA)
  Completion of in-situ thermal remediation of PAHs, PCP and dioxins at a former wood treatment facility
- Jourdain, Saadaoui, Falcinelli, Haemers (Deep Green SA, Belgium)
  In-situ thermal treatment in urban polluted areas: application of Thermopile©
- Dusílek, Kvapil (AQUATEST a.s., Czech Republic), Udell (University of California, USA)
  In-situ thermal technology application – results of post-remedial monitoring
- Hiester, Schrenk (reconsite – TTI GmbH, Germany)
  Thermally enhanced in-situ remediations beneath buildings during their continued usage – new source removal options for urban sites

LeS E.6 Natural attenuation

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: B. Bone

- Held (ARCADIS Consult, Germany) – KEYNOTE
  Hydrogeological effects on natural attenuation of CVOC's
- Leyval, Beguiristain, Biache, Cébron, Faure, Masfaraud, Norini, Ouvrard, Vasseur (LIMOS CNRS Nancy University, France)
  Natural attenuation on a field site contaminated with PAH and heavy metals: fate of polluants and their toxicity, plant growth and microbial functional diversity
- Werner, Leibenath, Börke, Hüsers, Lorbeer, Schönekerl (TU Dresden)
  Implementation of Natural Attenuation on a wood preservation facility contaminated with tar oil
- Volkering (Tauw bv, NL), van Breukelen (VU University Amsterdam, NL), Gemoets (VITO, Belgium), Sakaguchi-Söder (Darmstadt University of Technology, Germany), Veld, TNO, NL), Elsner (Helmholtz Centre for Environment and Health, Germany)
  SNOWMAN project 'Extending the Natural Attenuation of Chlorinated solvents Toolbox' (ENACT)

LeS E.7 Enhanced natural attenuation – 1

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Aquarius

Chairman: B. Engeser

- Leccese, Viotti, Petrangeli Papini, Aulenta, Bozzano, Petitta (University of Rome "Sapienza", Italy)
  Modelling the effects of lactate injection to promote in-situ an aerobic bioremediation of a CAHs contaminated aquifer – KEYNOTE
- Schmidt, Tiehm (Water Technology Center, Germany), Heidinger Ertl (Hydroisotop GmbH, Germany)
  Natural attenuation of chloroethenes – site assessment by microcosm studies, 16S-PCR and 13C-isotope fractionation
- Meskens, Heylen, Bouckenooghe (Soresma NV, Belgium)
  Different methods to stimulate the biological degradation of 1,1,1-Trichloroethane
- Borden (Solutions-IES & North Carolina State University, USA)
  Anaerobic bioremediation with Emulsified Oil Substrate (EOS®)

LeS E.8 Enhanced natural attenuation – 2

Friday, 6 June, 09.00 – 10.30 hrs, Hall Gemini

Chairman: F. Swartjes

- Brown (ERM, Inc., USA), Thomas (ERM, Inc., UK), Dijkshoorn (ERM, Belgium)
  Developments in In-Situ Chemical Reduction (ISCR) technology
- Niqui-Arroyo, Velasco-Casal, Ortega-Calvo (CSIC, Spain)
  Bioremediation of hydrophobic organic chemicals in soils: prospecting new biological and physicochemical approaches to improve bioavailability
- Bastiaens, Simons, Boënne, Debor Gemoets (VITO, Belgium)
  Bioaugmentation to remediate Methyl tert-Butyl Ether (MTBE) contaminated groundwaters: from lab to pilot scale
- Pukkila, Kontro (University of Helsinki, Finland), Gustafsson (Finnish Environment Institute, Finland)
  Dichlobenil and BAM degrading microbes isolated from subsurface deposits and soil surface in Finland

LeS E.9 Non-conventional concepts

Friday, 6 June, 09.00 – 10.30 hrs, Hall Martini

Chairman: P. Nathanail

- Glöckner, Giese (DGFZ, Germany)
  Treatment of contaminated groundwater with chlorinated hydrocarbons (CHC) by using new anoxic vaccum stripping technologies
- Pijls, Volkering, Weelink (Tauw bv, NL)
  Feasibility of chemical reduction and oxidation of HCH (Hexachlorocyclohexane)
- D' Emilio (Snamprogetti, S.P.A., Italy) Salamone (SYNDIAL S.p.A., Italy)
  First applications of ISCO and in-situ ECRT in Italy
- Zanganelli, Accettulli, Longoni (SAPIO Produzione Idrogeno e Ossigeno, MONZA MI, Italy)
  Innovative "IN-SITU" remediation technology of groundwater and soil contaminated with Chromium VI

LeS E.10 Decision support tools

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Sagitarius

Chairman: P. Bardos

- van der Meulen, van Duijne, Hartog, Maring, Rijnaarts (TNO, NL) – KEYNOTE
  Holland in-situ program: demonstration and optimization of in-situ remediation through a technical and process oriented R&D program
- Koenigsberg, Simon, Burns, Sarr, Haitz (WSP Environmental Strategies, USA)
  Advanced diagnostic tools and applications to site design, management and accelerated closure

- Gruiz, Molnár (Budapest University of Technology and Economics, Hungary), Fenyvesi (2Cyclolab Cyclodextrin R&D Laboratory Ltd., Hungary)
  Verification tool for in-situ soil remediation technologies
- Pandele, Finkel, Ellul, Özdemir, Bayer (University of Tübingen, Germany)
  Accounting for time-variant boundary conditions in the assessment and development of remediation strategies

LeS E.11 Modelling

Thursday, 6 June, 11.00 – 12.30 hrs, Hall Martini

Chairman: H. Weiss

- Weber, Tränckner, Uhlig, Luckner (GFI GmbH, Germany), Vogt (LMBV mbH, Germany)
  Implementation of sequences and mass balances for electron aceptors on reactive transport modelling for prediction of natural attenuation
- D'Affonseca, Finkel, Park, Blum (University of Tübingen, Germany)
  Evaluating performance of NAPL source remediation technologies
- Baker, Heron, LaChance (TerraTherm, Inc., USA), Färber, Li Yang, Hiester (University of Stuttgart, Germany)
  2-D physical models of thermal conduction heating for remediation of DNAPL source zones in aquitards
- Saponaro, Puricelli, Sezenna, Bonomo (Politecnico di Milano DIIAR, Italy)
  A modeling approach supporting Air Sparging system design

LeS E.12 Heavy metals

Tuesday 3 June, 16.00 – 17.30 hrs, Hall Libra

Chairman: L. Diels

- Vanbroekhoven, Van Roy, Diels, Gemoets (VITO, Belgium), Verkaeren (MWH, Belgium), Zeuwts (Smet GWT, Belgium), van den Broeck, Koen (Umicore, Belgium) – KEYNOTE
  Inducing sulfate reducing bacteria in the saturated zone near a non-ferrous industry
- Groudev, Spasova, Nicolova, Georgiev (University of Mining and Geology Durvenitza, Bulgaria)
  In-situ bioremediation of an alkaline soil polluted with heavy metals
- Guido, Carrera, (Snamprogetti S.p.A – Eni Corporale, Italy), Gattazzo (Syndial S.p.A, Italy)
  Remediation of mercury contaminated sediments by sulphur stabilization
- Bernal, Clemente, de la Fuente, Martínez-Alcalá (CEBAS-CSIC, Spain), Walter (IMIDA, Spain)
  Phytoremediation of metal-contaminated soils: constraints and limitations in the case of the Aznalcóllar pyrite spill

LeS E.13 Barriers

Thursday 5 June, 11.00 – 12.30, Hall Gemini

Chairman: V. Tandoi

- Wimmerova, Stehlickova (DEKONTA, Czech Republic), Svab, Mullerova (ICT, CR), Kozler (VUAnCh, Czech Republic)
  Innovative materials for permeable reactive barriers – sorption and biofiltration of organic and inorganic pollutants
- Boni, Sbaffoni (University of Rome "Sapienza", Italy)
  Organic permeable barriers for Cr(VI) removal from contaminated groundwater – lab-scale experiences
- Van Nooten, Diels, Bastiaens* (VITO, Mol, Belgium)
  Design of a lab-scale multifunctional permeable reactive barrier for remediation of landfill leachate
- Uhlig, Kassahun, Luckner (GFI, Germany), Zschiedrich (LMBV, Germany)
  Pilot test with an active drain & gate system as a part of a multi step reactive barrier

LeS E.14 Source zone treatment

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Franci

Chairman: L. Diels

- Switzer, Pironi, Rein, Fuentes, Torero (University of Edinburgh, UK), Gerhard (University of Western Ontario, Canada) – KEYNOTE
  Experimental studies of self-sustaining thermal for Aquifer Remediation (STAR) for Non-Aqueous Phase Liquid (NAPL) sources
- Hiester, Müller, Trötschler, Koschitzky (University of Stuttgart, VEGAS, Germany), Baker, LaChance, Heron (TerraTherm, USA), Kuhlman (MK Tech Solutions Inc., USA)
  Dominating processes during DNAPL removal from the saturated zone using thermal wells
- Bastiaens, Boënne, De Ceuster, Gemoets (VITO, Belgium), Verreydt, Vanderauwera (Hogeschool Antwerpen, Belgium)
  Treatment of DNAPLs by (bio)surfactant flushing: from lab-scale testing to pilot test
- Leccese, Viotti, Petrangeli Papini, Luciano (University of Rome "Sapienza", Italy), Luciano (University of Rome "Tor-Vergata", Italy)
  A lab experience to investigate 2D DNAPL migration in porous media by means of image analysis

LeS E.15 Electrical techniques

Tuesday, 3 June, 16.00 – 17.30 hrs, hall Aquarius

Chairman: J. Vegter

- Canosa, Reale, Panero, Majone, Aulenta (University of Rome "Sapienza", Italy), Rossetti (National Research Council (IRSA-CNR)) – KEYNOTE
  Bioelectrochemically-assisted reductive dechlorination: an innovative approach for remediating chlorinated solvent contaminated groundwater
- Andreottola, Ferrarese (University of Trento, Italy)
  Remediation of polycyclic aromatic hydrocarbons and organolead compounds by electrochemical oxidation
- Guiot, Tartakovsky, Cimpoia, Manuel, Barret, Husser (Nat. Res. Council Canada, Canada);
  presenter: Ruxandra Cimpoia
  The Electrolytic Methanogenic-Methanotrophic Coupling (eMaMoC) concept for groundwater bioremediation: validation at pilot-scale on mixed contamination
- Kelley, Mork (Regenesis, California, USA), Crowley (Regenesis, Ireland), Birnstingl (Regenesis, UK)
  The impact of electron donor zeta potential and hydrophile / lipophile balance on subsurface distribution

LeS E.16 Special subjects – 1

Wednesday, 4 June, 11.00 – 12.30 hrs, hall Taurus

Chairman: H. Weiss

- Hamonts, Maesen, Ryngaert, Vos, Bronders, Dejonghe* (VITO, Belgium), Dijk, Springael (Catholic University of Leuven, Belgium), Sturme, Smidt (Wageningen University, NL), Kuklik, Kozubek (AQUATEST, CR), Kuhn, Meckenstock (Forschungszentrum für Umwelt und Gesundheit, Germany), Kalka, Peters (Umwelt- und Ingenieurtechnik, Germany)
  Sediment biobarriers for chlorinated aliphatic hydrocarbons in groundwater reaching surface water
- Bambara, Bondanelli, Da Pozzo, De Propris, Scarcella, (ICRAM (Central Institute for Marine Research), Ministry of Environment, Italy)
  The environmental remediation as an opportunity of economic development within sites of national interest
- Connolly, Street, Rahman, Lord (University of Teesside, UK)
  Reduction of oily hazardous wastes via biosurfactant washing
- Pensaert, De Puydt, Janssens (DEC NV, DEME Environmental Contractors, Belgium), Vanpée (Total Belgium, Belgium), Vander Velpen, De Cock, Goorden (Haskoning Belgium, Belgium)
  The remediation of the acid tar lagoons at Rieme, Belgium

LeS E.17 Special subjects – 2

Friday, 6 June, 11.00 – 12.30 hrs, Hall Taurus

Chairman: M. Petrangeli-Papini

- Sagi-Ben Moshe (The Hebrew University of Jerusalem, Israel), Ronen, Dahan, Weisbrod (Ben Gurion University of the Negev, Israel), Nativ (The Hebrew University of Jerusalem, Israel)
  Biodegradation of explosives mixture in soil
- Hennecke, Kördel (Fraunhofer IME, Germany), Steinbach, Hermann (Philipps University of Marburg, Germany)
  Transformation processes of explosives in natural water / sediment systems
- Kördel, Hennecke, Hörner (Fraunhofer IME, Germany)
  Effectivity of natural attenuation in contaminated munitions sites
- Ross, MacLeod, Harvey (Arcadis Geraghty and Miller International Ltd, UK), Burdick (ARCADIS NV), Maggs (Akzo Nobel)
  In-situ remediation of carbon disulphide

Theme F: Sustainable & risk based land management

LeS F.1 Instruments sustainable land management

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Gemini

Chairman: J. van Veen

- Van Breemen, Lijzen, Otte. van Vlaardingen, Spijker, Verbruggen, Swartjes, Rutgers, Groenenberg (National Institute for Public Health and the Environment RIVM, NL)
  Deriving land use specific reference values for setting maximal values for soil in Dutch soil policy
- Zhang, Finkel, Bayer (University of Tübingen, Germany)
  Evaluating real options in remediation investment projects
- Preuss (German Institute of Urban Affairs (Difu), Germany)
  Circular land use management in city regions: strategy and instruments
- Versluijs, van Wijnen, van den Broek (RIVM, NL), de Cleen (VROM, NL), Mulder (Buro3B)
  The national potentially polluted sites database as input for a societal cost benefit analysis of the soil remediation operation in The Netherlands

LeS F.2 Brownfields

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Franci

Chairman: J. Vegter

- Ertel, Schug (Sachverständigen-Büro Dr. Ertel, Germany), Geffers (Landeshauptstadt Stuttgart, Germany) – KEYNOTE
  REVIT – revitalising industrial sites. Towards more effective and sustainable brownfield revitalisation policies
- Bronders, Touchant, Van Keer, Patyn, Provoost (VITO, Belgium)
  A risk management plan for the redevelopment of a brown field: an example
- Braun, Samtleben (University of Stuttgart, VEGAS, Germany), Schrenk (reconsite – TTI GmbH, Germany)
  SMC Develop SMS – small and medium-sized companies (SMC) develop small and medium-sized sites – a REFINA project located in the city of Stuttgart
- Bulman, Marsh, Leus, Kinch
  The development of multi-media risk-based standards for use in Ontario's Brownfields Regulation

LeS F.3 (Ground)water

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Martini

Chairman: M. Majone

- Dols, Slenders (ARCADIS, NL), de Vries, Seeters (Gemeente Utrecht, NL)
  A groundwater management zone in the inner city of Utrecht, a means of dealing with multiple plumes and dynamic use of the subsurface
- Slenders, Verburg (ARCADIS, NL), Schreurs, Melgert (Philips Environment and Safety, NL), van Dieren, Scholten (Park Strijp Beheer, NL)
  Combining heat-cold storage and groundwater contaminant management during the redevelopment of a former industrial complex
- Guzzella, Salerno (CNR-IRSA, Italy), Di Palma, Arduini, Zelioli (Provincia di Milano, Italy)
  QUALFALDA Project: quali/quantitative state of aquifers in the Milan Province
- Zanovello (Studio Altieri, Italy), Albano, Frank (CH2M HILL, Italy), De Nat (Thetis, Italy)
  Sustainable land and water reuse at the Venice Lagoon: The Fusina Integrated Project treatment wetland system

LeS F.4 New approaches

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: M. Beccari

- Andersson-Sköld (SGI, Sweden), Bardos, (r3, UK), Blom (FB Engineering, Sweden), Keuning (Bioclear, NL), Track (Dechema, Germany)
  Crop based systems – a no or low cost approach for sustainable risk based land management?
- Boekhold (Soil Protection Technical CommitteeNL), Hanegraaf (Nutrient Management Institute NMI, NL)
  Effects of the production of biomass for energy on soil quality in The Netherlands
- McKnight, Finkel (University of Tübingen, Germany)
  Model-Based Preliminary Assessment: a new approach to improve tiered decision-making for contaminated land management
- an Wensem (Soil Protection Technical Committee, NL), Faber (Alterra, NL)
  An ecosystem approach as innovative concept for promoting sustainable land use

LeS F.5 Social aspects

Friday, 6 June, 09.00 – 10.30 hrs, Hall Aquarius

Chairman: J. Frauenstein

- Lee, Baldock, Lamble (WSP Remediation Ltd, UK) – KEYNOTE
  Remediation or problem translocation: an ethical discussion as to the sustainability of the remediation market and carbon calculating
- De Sloovere, De Naeyer, Van Dyck (OVAM, Belgium), Buvé, Kegels (Umicore NV, Belgium)
  How can policy makers cope with a broad contaminated residential area? Remediation versus social acceptance – case in Flanders
- Thurgood (Environmental and Remediation Services Limited, UK)
  Contaminated land investigation & remediation – communicating with the public – a case study
- Weingran (HIM GmbH, HIM-ASG, Germany)
  Public participation in the remediation of contaminated sites – conception, principles, experience

LeS F.6 Environmental aspects & costs

Friday, 6 June, 14.00 – 15.30 hrs, Hall Martini

Chairman: F. Swartjes

- Gussoni, De Salvia, Parolin, Piana (Building Municipality of Milan, Italy)
  An integrated approach for the sustainable inner development of brownfields
- Zaninetta (Syndial S.p.A., Italy), Colombo, Pozzi (ENVIRON Italy S.r.l., Italy)
  Benchmark of remediation costs
- Morio, Finkel (University of Tübingen, Germany), Martac (tgag – Tübinger Gesellschaft für Angewandte Geowissenschaften e.V., Germany)
  Enhancing brownfield revitalisation strategies by analysing future land use scenarios, contamination and clean-up costs: A holistic multi-method approach
- Schrooten, Van Alphen (Soresma, Belgium)
  GEMS: a GIS based tool for soil contamination cost calculations

Theme G: Complete cases

LeS G.1 Former industrial and military sites

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Gemini

Chairman: D. Darmendrail

- Stacul, Mariotti, Guardigli, Liberatore, Mosca (Sviluppo Italia Aree Produttive S.p.A., Italy)
  Integrated remediation of an industrial settlement polluted by asbestos
- Gommers, Feyaerts (Umicore, Belgium), Verkaeren, Muguet (MWH, Belgium), Zeuwts (Smet GWT, Belgium), Vanbroekhoven, Gemoets (VITO, Belgium)
  In-situ precipitation for remediation of Co, Ni, Zn and Cd contaminated groundwater
- Frauenstein (UBA, Germany), Hingst, Heuschneider (IABG, Germany)
  Establishment of an environmental management system in the Georgian armed forces – case study Dedoplistskaro Ammunition Disposal Plant (Georgia)
- Piroth (ARCADIS Consult, Germany), Hartl (AJAG(E)), representative of the Canadian Forces), Mangold (Landratsamt Ortenaukreis, Water Authority, Germany)
  Project management and innovative concepts for the groundwater investigation and – remediation at the former NATO-Air Base Lahr, Germany

LeS G.2 Brownfields

Friday, 6 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: N. Dueso

- Schrooten, Coopman (Soresma NV, Belgium), Ide, Leys (Envisan NV, Belgium), Kindt (OVAM, Belgium), Descamps, Lox (SPAQuE, Belgium)
  Carcoke Company: 3 coking plants, 3 regions, 3 solutions
- Maene (City of Ghent, Belgium)
  Brownfield Gasmeterlaan Ghent
- Noé (ARCADIS Consul, Germany)
  Airfield Böblingen/ Sindelfingen – Transformation of a former military site into a new city quarter
- Barbosa Dantas (TU Berlin, Germany), Nieters (GTZ – Rio, Brazil/Germany)
  Redevelopment of brownfield in Rio de Janeiro: housing x public participation in Manguinhos

LeS G.3 Harbours / waterfronts

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman: D. Darmendrail

- Capretti, Maggiori, Bellini (Comune di Brescia, Italy) – KEYNOTE
  Brescia – Caffaro, site of national relevance: a case study of pollution by PCB, PCDD-PCDF, Arsen (As) and Mercury (Hg) in an urban area
- Mariotti, Stacul, Di Nardo, Mosca (Sviluppo Italia Aree Produttive S.p.A., Italy)
  Remediation of polluted sediments and economical development in the Agusta harbour, Priolo (SR)
- Wevers (Boskalis Dolman bv, NL), Spelt (Cofra bv, NL)
  Vacuum consolidation of fine grained materials (BeauDrain-S®): creation of space in the harbour of Bremerhaven
- Batlle-Aguilar, Dassargues (University of Liège, Belgium), Brouyère (University of Liège, and Aquapôle-ULg, Belgium), Diels, Vanbroekhoven (VITO, Belgium), Hunkeler, Morasch (University of Neuchâtel, Switzerland), Halen (Public Society for the Environment Quality, SPAQuE, Belgium)
  Hydrodynamic characterisation of a groundwater – surface water system and evaluation of BTEX, PAHs decay and heavy metals fate

Theme H: Coastal zones

LeS H.1 Coastal zones

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Scorpio

Chairman: S. Boekhold

- van Beek, Lambert, Blauw, de Louw (Deltares, NL), Faassen (Hoogheemraadschap Rijnland, NL)
  Application of BioSealing for salt water seepage reduction
- Pozzi, Apollo, Colombo (Environ Italy Srl., Italy)
  DNAPL mobility, physical processes and emergency response strategy in coastal acquifers
- Montobbio, Bernstein (Consorzio Venezia Nuova), Volpe (Magistrato alle Acque di Venezia)
  Environmental monitoring of the Venice Lagoon around Porto Marghera industrial harbour by Venice Water Authority
- Ausili, Romano (ICRAM (Central Institute for Marine Research, Ministry of Environment, Italy)
  Integrated approach for environmental characterization in a coastal marine area: The study case of Baia (Naples)

SPECIAL SESSIONS (SpS)

A Special Session (SpS) is focused on a specific topic, project or organization. In general, there will be ample time for discussion with the audience.

SpS 1 Brownfields, bioenergy and biofeedstocks

Friday, 6 June, 11.00 – 12.30 hrs, Hall Scorpio

Organisers: r3 environmental technology limited, Dechema, SGI, FB Engineering, Bioclear and the US EPA

Brownfield land exists for which there is no economic case for restoration to conventional functional re-use and/or no realistic prospect for "hard" re-use. All across Europe there are areas of land which have been degraded by past use that are not easy candidates for conventional regeneration, or for which conventional regeneration may not be the most sustainable approach. Such previously developed land included areas affected by mining, fallout from industrial processes such as smelting, activities related to forestry and the pulp and paper industry, areas elevated with contaminated dredged sediments, former landfill sites and many other areas where the decline of industrial activity has left a legacy of degraded land and communities. The extent of contamination may not be sufficient to trigger remediation under current regulatory conditions, and there may be little economic incentive to regenerate the areas affected.

An ideal solution would be a land management approach that is able to pay for itself. The combination of a wider range of risk management approaches with the emerging broad range of non-food uses of land offers great potential for low (or no) cost risk based land management that is stable and sustainable. An important basis for such an approach is to estimate the energy, policy and economical potentials, risks and limitations which to a great extent depend on the available area and technical solutions.

These themes are explored in four presentations in this special session.

Speakers and presentations:

1. Opportunities for managing marginal land for biomass, bioenergy and biofeedstocks in the UK, Sweden and Germany – a preliminary assessment: Yvonne Andersson-Sköld (S), Paul Bardos (r3, UK) Thomas Track (Dechema (Germany) and Sytze Keuning (NL)
2. Use of soil amendments for remediation, revitalization, and reuse, Michele Mahoney, US EPA
3. European case study
4. Discussion session

SpS 2 Green remediation continued

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Scorpio

Organisers: r3 environmental technology limited, Dechema, SGI, FB Engineering, Bioclear and the US EPA

Green Remediation can be defined as the practice of considering the environmental effects of a remediation strategy (i.e., the remedy selected and the implementation approach) early in the process, and incorporating options to maximize the net environmental benefit of the cleanup action. In addition to an overview of what the state of the practice is in the US and Europe, this panel will focus in energy and climate change considerations at contaminated sites. Themes include:

- Assessment of the wider impacts of contaminated land management and remediation
- Innovative remediation practices that incorporate energy efficiency and cleaner and renewable energy sources to decrease greenhouse gas footprints while achieving cost savings and benefits to local air quality.
- Placing renewable energy generating capacity on contaminated lands
- Can contaminated land management and remediation work in parallel with carbon management?
- Re-using the built environment / re-using materials

These themes are explored in four presentations in this special session.

Speakers and presentations

1. Green remediation: Reducing the environmental footprint of site cleanup projects: Carlos Pachon US EPA
2. Solar powered remediation in sensitive areas: Sytze Keuning, Bioclear, NL
3. Selecting gentle remediation approaches: Andy Cundy, UK
4. Renewable energy on contaminated lands: Penelope McDaniel, US EPA
5. Discussion session

SpS 3 Advances in the use of bioaccessibility data in quantitative risk assessment through practical applications

Thursday, 5 June, 09.00 – 12.30 hrs, Hall Taurus

Organiser: BARGE, Joanna Wragg

Assessment of the risk from contaminated sites is mostly carried out in response to toxicity to humans and in estimating this, the human oral bioavailability of the contaminants is a key parameter. Access to accepted methods for estimating the oral bioavailability of soil contaminants may thus reduce costs of site remediation and soil cleaning, while still maintaining the required protection level. It is generally agreed that it is impractical to measure true human bioavailability. However, an in-vitro bioaccessibility test, simple enough to carried out by soil testing laboratories that mimics the amount of harmful substance that becomes solubilised in the human gastrointestinal tract, provides a pragmatic approach to estimating bioavailability. Work on standardising and validating in-vitro bioaccessibility tests are on-going with much discussion among regulators as to what constitutes a validated test. At CONSOIL 2005 the special session organised by the BARGE group concluded that despite these discussions on validation "that bioaccessibility measurements are now reaching a stage where they can be used with confidence in human health risk assessment".

Recent studies show that bioaccessibility research is a very active area with wide-ranging and important applications (Gron and Wragg, 2007). The aim of this special session is to provide an update on the progress of validation of the in-vitro test methods since the last CONSOIL but more importantly to show how bioaccessibility data can be used in the assessment of contaminated sites through case studies. The presentations will show practical applications, which include:

- The relevance of the bioaccessibility data to human bioavailability;
- Use of the results in site-specific and generic risk assessment;
- The use of bioaccessibility in combination with other soil assessment tools;
- Modelling and prediction of bioaccessibility as a tool for risk mapping.

The session will afford time for a dedicated speaker-audience panel discussion with the following speakers on the topics presented and other areas of interest related to bioaccessibility and the BARGE group:

1. Christian Gron, DHI, Denmark: Bioaccessibility and leaching tests in site risk assessment
2. Chris Collins, The University of Reading, UK: Bioaccessibility of organic pollutants in the human digestive system
3. Helene Roussel, Laboratoire Sols et Environnement, France: Assessment of the Cd, Pb and Zn oral bioaccessibility in urban topsoils near two smelters in Northern France
4. Werner Hagens, RIVM, Netherlands: The bioavailability of lead from soils taken from Dutch urban cities: Can a generic bioavailability factor be derived for these specific soils?
5. Ken Reimer, Environmental Sciences Group, Canada: Bioaccessibility of Cr at a former Tannery Site

6. Paul Nathanail, University of Nottingham, UK: Uses and abuses of bioavailability in human health risk assessment
7. Mark Cave, British Geological Survey, UK – Mapping and modelling of arsenic bioaccessibility in the Tamar Valley in South west England

The overall aim is to provide guidance on best practice and to show how bioaccessibility measurement can be an important, if not vital, aid to contaminated land studies.

References

Gron C., and Wragg J., Ed., Journal of Environmental Science and Health, Part A Toxic/Hazardous Substances and Environmental Engineering, Special Issue on Bioaccessibility, Volume 42 Issue 9 2007.

SpS 4 Environmental Technology Verification – an instrument to promote remediation and monitoring technologies (PROMOTE)

Friday, 6 June, 14.00 – 15.30 hrs, Hall Gemini

Organiser: DECHEMA e.V., representing the consortium of the EU FP6 funded project PROMOTE

Many new technologies lack proven information on their performance under real or field conditions. This makes it difficult for their manufacturers to convince first customers due to the perceived risks, to secure the sources of finance necessary to fund related industrial developments and sometimes it delays the necessary authorisations to place the technologies on the market.

The European Commission is preparing the establishment of a EU-wide system, offering credible verification of the performance of innovative and new technologies: Environmental Technology Verification (ETV).

PROMOTE is focusing on the development of a performance verification procedure for site characterisation, monitoring and remediation technologies for soil and groundwater. Verification is to be understood as the independent quantitative assessment of the performance of an environmental technology, based on performance claims or pre-determined protocols. It is always related to a specific product, e.g. groundwater monitoring device A of company B. Verification does not prove the operability of a class of technologies, e.g. ceramic dosimeters or permeable reactive barriers in general.

The special session will address:

- Actual developments on the EU wide verification scheme
- A proposal for verification of remediation, site characterization and monitoring technologies
- Project findings and experiences with pilot verifications and the discussion of these topics with the audience.

Speakers and Presentations:

1. Introduction to environmental technology verification and international activities: Th. Track, DECHEMA/D
2. A verification procedure for site characterisation/monitoring and remediation technologies: Th. Ertel, SV-Ertel/D
3. Verification experiences out of PROMOTE: L. Bastiaens, VITO/B & D. van Ree, Deltares/NL
4. Discussion session

SpS 5 SNOWMAN: Umbrella for transnational research funding and cooperation

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Gemini

Organiser: Openbare Vlaamse Afvalstoffenmaatschappij (OVAM) on behalf of SNOWMAN

Contact: Sofie Van den Bulck

Speakers: Stefan Vetter / Harry Vermeulen

SNOWMAN (Sustainable management of soil and groundwater under the pressure of soil pollution and soil contamination) is the ERA-NET project CONTRACT N° ERAC-CT-2003-003219 within the 6th European Framework Programme for R&D. The SNOWMAN consortium consists of 7 partners from 7 European countries (AU, F, D, NL, B, UK, S). The overall objective of the SNOWMAN-project is to enhance quality, relevance and utilization of resources in Europe regarding research in the field of soil and groundwater protection.

Concretely, the main goal of the consortium is to establish a network of national funding organizations and administrations providing the research funding platform for soil and groundwater, bridging the gap between knowledge demand and supply. This network should continue and enlarge even after finalization of the European funded project itself.

As a pilot project, a first joint call was launched on sustainable management of soil and groundwater contamination with a research budget of 700.000 Euro. 5 out of 23 projects were selected, which started their work in Autumn 2007.

In the previous Consoil, SNOWMAN had a special session where the consortium presented the vision of SNOWMAN. In this special session, Mr. Stefan Vetter will firstly present the SNOWMAN project, go more deeply into the actions we took to have a joint call and present the first results of the running projects (posters). The (main) second part of the session will be to promote and discuss the future network, activities and cooperation possibilities of SNOWMAN with the audience. The main discussion will be focused on the Snowman research agenda. Participants in the session will be asked to comment and to contribute to this agenda.

SpS 6 BeNeKempen

Friday, 6 June, 11.00 – 12.30 hrs, Hall Gemini

Organiser: Public Waste Agency of Flanders (OVAM) and Active Soil Management Campine Area (ABdK)

Speakers: Victor Dries (OVAM), Eddy Van Dyck (OVAM), Eric Kessels (ABdK), Daneel Geysen (OVAM)

From the 1890's several non-ferrous smelters were active in the north-eastern part of Belgium and the south-eastern part of the Netherlands. They mainly produced zinc by means of condensing zinc containing vapours from the heated ores. Besides zinc, the ores also contained lead, copper, arsenic and cadmium. Due to the emission into the air, into surface water and the use of residues for road stabilisation a large area of land (Campine area) is contaminated with heavy metals.

The spread of emitted dust did not stop at the border nor did the heavy metal content in surface water and even the use of residues for road stabilisation was common practise in the Netherlands as well as in Belgium. At both sides of the border people are facing the same problem. Therefore both countries agreed on working together and sharing knowledge and data. The project BeNeKempen is putting the agreement into practise.

The objective of the BeNeKempen project is to develop and implement cross-border strategies to solve problems related to the heavy metal contamination and to reduce risks. The BeNeKempen project is a co-operation between OVAM in Flanders and ABdK in the Netherlands, with financial support from the European Union through the INTERREG IIIA programme for the border region Flanders – The Netherlands. OVAM is the responsible authority for soil remediation in Flanders, ABdK has the task to create a socially well-considered management of the contaminated Campine area of the Netherlands.

The pollution problem in BeNekempen is tackled by several working groups dealing with the following topics: water, zinc ashes, nature, agriculture, risk assessments. Attitudes in relation to the heavy metal contamination in both countries differ resulting in a different availability of resources and in different priorities. Nevertheless, for several aspects an almost similar policy can be set up.

During the BeNeKempen project the process of solving cross-border pollution was stimulated and evaluated. A typical example for a problem also addressed by the water framework directive, its daughter directive and the soil strategy.

In this special session we will highlight some issues of the co-operation in BeNeKempen: the inventory of data, knowledge and attitude of people towards the pollution; attempts to harmonise the risk assessment, cross-border management of polluted groundwater and surface water, agriculture in a diffuse polluted area facing a conflict between food quality standards and risk as-

sessment. The special session will be organised in an interactive way, so that sufficient time is available for discussion.

SpS 7 Towards harmonised human health risk assessment across Europe: Sorting the possible from the impossible

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Scorpio

Paul Nathanail (University of Nottingham & LQM), Frank Swartjes (RIVM), KaatjeTouchant (VITO) and Benoît Hazebrouck (INERIS)

A recent review and evaluation of risk assessment tools in Europe, performed within the HERACLES network, showed that many different human health based risk assessment tools are available in Europe, as equations, models, graphs, protocols or databases. Many of these tools are incorporated in legal frameworks, either as procedures or incorporated in soil screening values (SSV). As a consequence, SSVs and site specific assessment criteria differ throughout Europe. The anticipated E.U. Soil Framework Directive (COM(2006)232, 2006) will encourage convergence in procedures among Member states to ensure neutral conditions of competition and a coherent soil protection regime. CABERNET's Environment Group endorsed Risk Based Land Management, as promoted by CLARINET, but lamented the variable uptake of RBLM across Europe. The diversity of approaches, lack of skills and insufficient training opportunities were held up to be major factors inhibiting RBLM in Europe. Brownfields do not HAVE to be contaminated – but many are. Brownfield regeneration is essential if Europe is to achieve the Lisbon and Stockholm objectives, and Europeans are to have viable urban spaces in which to live, work, learn, love and play safely.

This session will explore the extent to which harmonisation in human health risk assessment is possible across the European Union. National human health based SSVs are based on different scientific, geographical, cultural and political elements. These include various algorithms with different input parameters and different health criteria values. As a consequence, the national SSVs can differ up to 4 orders-of-magnitude. Is such variation between SSVs acceptable from a scientific and from an economical point-of-view? Can harmonization promote neutral conditions of competition across Europe? Clearly common generic SSVs across Europe are not appropriate, since countries must be allowed to include country specific geographical and cultural characteristics, and, last but not least, political decision making. However, several tools like the physicochemical properties clearly are suited for harmonisation.

At this special session the state-of-art of available tools for human health risk assessment in Europe, based on the HERACLES study, will be presented. In a subsequent discussion the views of the international human health risk assessment experts on the possibilities for harmonisation human health risk assessments will be exchanged and discussed. Let us hear your opinion!

The Special Session outcomes will form the basis for a document, e.g. a paper in a relevant peer reviewed journal, and a submission to the EC to inform their ongoing discussions on the Soil Framework Directive. This paper will include the views of the international human health risk assessment community present at the session. Moreover, the paper must be the basis for a more coordinated toolbox for human health risk assessment in Europe. The outcomes would be suitable for an oral presentation at ConSoil 2010.

SpS 8 Technology development, an in-depth look at improving market uptake – linked to SpS 25 –

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Martini

Organisers: NICOLE, EURODEMO+

Market uptake of innovative soil and groundwater remediation technologies is disappointingly low throughout Europe because of stakeholder confidence issues. This is a shame, especially since many of these technologies really are very promising. In a triple feature special session the European networks NICOLE and EURODEMO+ jointly present an in-depth look into this important issue, with ample opportunity for discussion. You are cordially invited to participate in this discussion.

Towards a common position paper on research and demonstration needs

Session chair: Yvonne Spira (A, UBA, EURODEMO)

After having explored the ins and outs of needs for research and demonstrations, and the associated criteria, in the first two sessions, we will in this final part try to take a more elevated position. To complete the picture, if you will. Both the industrial and the regulator's perspective will be briefly presented. The ensuing discussion aims to lead to a guideline for researchers, interested in taking on these issues, and to a common position paper.

- Anja Sinke (UK, BP, NICOLE Industry subgroup) – Funding research and demonstrations: the industrial perspective
- Joop Vegter (NL, chairman Common Forum – Funding research and demonstrations: the regulator's perspective
- Discussion on themes like funding innovation in general, a guideline for researchers and demonstrators, and a common position paper on research and demonstration needs.

SpS 9 From low to non-invasive site assessment and characterization: Model Driven Soil Probing, Site Assessment and Evaluation (EU project ModelPROBE)

Thursday, 5 June, 09.00 – 12.30 hrs, Hall Aquarius

M. Kästner (UFZ, Germany), G. Cassiani (University of Padua, Italy), M. Petrangeli Papini (University of Rome, Italy)

Conventional techniques for site characterization are time consuming, cost intensive, and do not often effectively support decision making towards sustainable remediation. Therefore, new techniques for step by step site characterization strategy with smart feed back loops are necessary and have to be developed. ModelPROBE is a new EU project recently accepted in the framework of the FP7, under the theme 6.3 Environmental Technologies, 3.1.2.2: Development of technologies and tools for soil contamination assessment and site characterisation, towards sustainable remediation. The ModelPROBE approach relies on the combination of advanced geophysical site characterization techniques with new types of vegetation analysis. Based on these non-invasive surveys, the extension of sources, contamination levels (THP, BTEX, PAH, CHC, explosives, and heavy metals) and soil heterogeneities will be localized first. Hot spots will then be investigated by new direct push probing systems integrated with geophysical & hydrogeological methods and combined with chemical & isotopic contaminant analysis for source localization and identification (environmental forensics). The actually occurring bioprocesses, such as contaminant degradation or precipitation/mobilization processes, will be assessed using biosensors, in-situ microcosms, and stable isotope and biomarker analysis. These new techniques and tools will be evaluated against best practice of conventional methods. ModelPROBE peculiar characteristic is the possibility to test, optimize and demonstrate the proposed approach and the developed tools at fully equipped and characterized European reference sites available in the project. Integrated statistical analysis and modelling at different stages of the step by step approach will result in an improved view of soil and subsurface contamination and will provide a sound basis for risk assessment and decision in the choice of the most appropriate sustainable remediation strategy. ModelPROBE Special Session 9 offers the opportunity to present the project to the scientific, professional and administrative European world also in comparison with the SoilCAM project as the other project accepted under the same FP7 call.

Presentations:

1. Funding activities and expectations from the EC related to the latest calls in the environmental technology section of the 7th. FP. C. Calzolari (European Commission)
2. Model driven Soil Probing, Site Assessment and Evaluation – An overview on the EU Project ModelPROBE. M. Kästner (Helmholtz Centre for Environmental Research – UFZ, DE), G. Cassiani (University of Padua, IT)

3. Soil Contamination: Advanced integrated characterisation and timelapse monitoring – An overview on the EU Project Soil CAM. Helen K. French (Bioforsk, Soil and Environment, NO), Sjoerd E.A.T.M. van der Zee (Wageningen University, NL), Max Meju (Lancaster University, UK)
4. Recent developments of geophysical methods for site assessment and monitoring. A. Kemna (University of Bonn, DE), G. Cassiani (University of Padua, IT), A. Binley (University of Lancaster, UK)
5. Utilising plants for a new approach in non-invasive site assessment. S. Trapp, Charlotte N. Legind, Morten Larsen, Antonio Franco (Technical University of Denmark, DK), Joel Burken (Missouri University of Science & Technology, USA), Jirina Machackova (Earth Tech CZ Ltd, CZ), Arno Rein (Helmholtz Centre for Environmental Research – UFZ, DE), Philipp Mayer, U. Gosewinkel Karlson (University of Aarhus).
6. New approaches of (other) biomethods for non-invasive site assessment. S. Rossetti (Water Research Institute, CNR, IT), M. Kästner (Helmholtz Centre for Environmental Research – UFZ, DE)
7. Low invasive site investigation – a domaine for Direct Push techniques. C. Leven-Pfister, P. Dietrich (UFZ - Helmholtz Centre for Environmental Research, DE)
8. Modelling of contaminant biodegradation in contaminated sites. D. Schäfer (Christian Albrechts University of Kiel, DE)
9. European reference sites for testing of new site assessment, monitoring and remediation approaches. H. Weiss (Helmholtz Centre for Environmental Research – UFZ, DE), M. Petrangeli Papini (University of Rome, IT)
10. Recent EU and national activities for spreading/applying new concepts in remediation of contaminated sites. M. Bittens (Helmholtz Centre for Environmental Research – UFZ, DE), M. Petrangeli Papini (University of Rome, IT).

SpS 10 ConSoil and the EU Framework Directive for Soil Protection

Wednesday, 4 June, 09.00 - 12.30 hrs, Hall Gemini

Convenors: Arnold Arnoldussen, Chairman of the European Soil Bureau Network Steering Committee/Norway

Winfried E.H. Blum, President of the European Confederation of Soil Science Societies (ECSSS)/Austria

Luca Montanarella, Head of the European Soil Bureau, Institute of Environment and Sustainability at JRC, Ispra/Italy

On September 22, 2006, the EU Commission submitted a proposal entitled "EU Framework Directive for Soil Protection", which is being discussed at the European Council and the European Parliament.

It is expected that until the end of 2007, the Parliament as well as the European Council, which represents all 27 European governments, will take a decision.

It is also expected that the Council as well as the Parliament will propose changes in relation to the original proposal of the EU Commission.

These new proposals by the Parliament and the Council will be presented and discussed in relation to the original proposal of the Commission as well as its impact on the future protection of soils in Europe.

It is known that only 10 out of 27 European countries have soil protection legislation. Moreover, this directive will have a clear impact on science as well as on practical applications by government offices and administrative bodies in Europe, responsible for soil protection. Also, private consultancy will probably be involved in the further follow-up of this EU framework directive.

Therefore, the main aim of this special session is to inform interested ConSoil participants and to discuss with them the impacts of this framework directive as well as their possible involvement in the operational procedures in the follow-up.

The Special Session will start with an introductory speech, given by Luca Marmo, from the DG Environment, European Commission, Brussels, informing about the current state of the proposal for a European Framework Directive on Soil Protection, with special emphasis on contamination.

A second speech will be given by Marc van Liedekerke, of the JRC, IES, Ispra and leader of the new European Soil Data Centre (ESDAC), who will speak about contamination/decontamination activities, as handled by ESDAC.

After both speeches, there will be a discussion.

During the 2nd part of the Special Session, several specialists on contamination issues will give their views on the proposal for the European Soil Framework Directive, amongst others Harald Kasamas (former leader of CLARINET). The three convenors will also take part in this discussion, which will end in a general wrap-up summarising the outcome of the Session.

SpS 12 The role of risk based contaminated land management in sustainable urban regeneration

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Martini

Chair/facilitation: CABERNET (Detlef Grimski, Paul Nathanail, Uwe Ferber & Kate Millar)

Speakers: CABERNET Members and Associated Members

A short presentation of key CABERNET findings on the significance of risk based management of land contamination on urban brownfield sites followed by an interactive discussion of how this should influence policy and practice at the Member State and EU level. Find out about how you can become involved in future CABERNET activities (or email cabernet@nottingham.ac.uk for details).

Concept

National surveys in several EU Member States show that most brownfield sites neither are, nor are even perceived to be, affected by contamination. Nevertheless contamination is an issue at many derelict and underused sites and can hinder the return to beneficial use of such sites.

Although the principles of risk based land management have been warmly received across Europe, practical implementation varies widely. Recent work comparing risk assessment models and encouraging transparency help. However a lack of regulator and risk assessor confidence and mutual understanding seems to be a pressure in some parts of Europe.

In the enlarged Europe, EC funds have to be wisely invested and there is a need for new targets for managing the brownfield problem and metrics that can provide early indications of progress against these targets.

CABERNET believes that environmental issues can catalyse brownfield regeneration raising environmental, social and economic benefits when targeted at sustainability in a balanced and integrated approach. However, a simplistic sectorial regulatory approach hinders regeneration. Environmental aspects are not always given a balanced consideration e.g. contamination issues can be over emphasised in brownfield regeneration.

Outcomes

The discussions will be captured and if appropriate written up as a workshop report for wider dissemination.

SpS 13 RISKBASE

Friday, 6 June, 09.00 – 10.30 hrs, Hall Taurus

Organisers: Jos Brils (TNO) and Joop Vegter (Vegter advice) on behalf of the RISKBASE consortium (www.riskbase.info).

RISKBASE, a coordination action in the 6th EU framework programme, wants to challenge the CONSOIL community to contribute to a further integration of soil- and water-management at the river basin scale. The Water Framework Directive has put the organizational structure in place, which is a necessary condition for implementation, but current management tools are unlikely to be sufficient to achieve the ambitious goal of keeping a river basin in a good ecological condition, which can satisfy the economical and social needs of our society.

We need research to develop better tools and new management concepts to handle the complexity of a complete river basin system, including water, groundwater, soils and sediments and the ecological, economical and social services provided by this system.

By the end of the project RISKBASE needs to deliver:

- An overarching concept, generic approach and guiding principles to integrated risk-based management of river basins,
- Recommendations towards evolution and implementation of risk-based management in national and community policies and towards implementation in management,
- A proposal for the European research agenda related to risk-based management.

Those attending CONSOIL will be familiar with the Risk Based Land Management concept, which is currently applied at the urban scale. It has improved significantly during discussions at previous CONSOIL conferences. Risk based management of river basins is however a major step upwards in scale and complexity beyond urban systems. The CONSOIL special session will present the ideas developed by RISKBASE on how to manage complex system in an integrative and adaptive way. This will lead to a discussion how to incorporate the experiences from system oriented soil and groundwater management concepts like "Risk Based Land Management" in RISKBASE.

SpS 14 A short training on modelling human exposure due to contaminated soil

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Aquarius

P. F. Otte, F.A. Swartjes, J.P.A. Lijzen and E. Brand, National Institute for Public Health and the Environment – RIVM (NL)

Exposure models

In about 16 EU Member States the derivation of soil quality standards and decisions about remedial measures takes place in accordance with a defined and statutory methodology. A review and evaluation of the different procedures used in the EU showed that all these countries consider human health as a protection target. The basis of human health risk assessment is exposure modelling. Many human exposure models are used in Europe. In the period 2003-2007 a revised soil policy was developed in the Netherlands and consequently regulations and tools to realize the new policy were developed. These developments and the need for a consistent framework of methods and tools were the driving forces to release a revised CSOIL model. In this training, the CSOIL model is used as an example of a human exposure model.

A training course on modelling human exposure

The RIVM soil quality criteria group experiences a continuing interest in information about, and the use of human exposure models. Request for information come often from representatives from countries with currently no or rudimentary policy on soil quality assessment and which are interested in the derivation of national risk-based soil quality standards. In the beginning of 2008 the updated CSOIL model, including the latest amendments, will be available from the RIVM website in English. To facilitate future users of exposure models RIVM wishes to offer a practical training on the theory and use of these models.

Basic principles of human exposure assessment

The training will highlight the basic principles of human exposure assessment related to contaminated soil. These principles are the basis of all European exposure models.

Risk assessment and demonstration of the CSOIL model

In the training the basic concepts and the functions of the model will be explained and discussed. The participants will learn about the use of exposure models by working on several illustrative cases. Together with other participants they will take decisions concerning risk scenarios and model parameters. They will derive soil quality criteria and assess the human risks due the use of contaminated soil. The training will be concluded with the demonstration of results and discussion. Participants are invited to download the model and to experience the different functions by themselves.

Outlook

The target group for this training course is the risk assessor, soil regulator or environmentalist coming from countries currently working on the development of environmental quality standards and assessment tools.

The participants will be invited to contribute to discussions. After the training the participants will be equipped to use exposure models.

SpS 15 International Science and Technology Center (ISTC), Moscow, Russia

Wednesday, 4 June, 09.00 – 12.30 hrs, Hall Aquarius

The ISTC scientific session will focus on the following topics:

- Radioactive contamination in Russia and other CIS countries
- Special cases of toxical soil contamination

Scientists from research institutes in Russia and other CIS countries will present and discuss their project results related to these topics. The session will provide an opportunity to meet face-to-face senior researchers and directors from such institutes to discuss your collaborative research and development interests. Senior Management from the ISTC will also be on hand to answer any general questions e.g. typical collaborative and partnership research arrangements, working with Russian/CIS researchers etc.

The following reports will be presented at the session:

Radioactive Contamination in Russia and other CIS countries

1. Torapava V.V. (Joint Institute for Power and Nuclear Research – Sosny National Academy of Sciences of Belarus, Minsk, Belarus) "Adress the Question of Remediarion of Radioactively Contaminated Soil Following the Accident at NPP or Terrorism Act"
2. Popov V.E. (Research and Production Association "Typhoon", Obninsk, Russian Federation) "Radiocaesium Interception Potentials of Organo-mineral Ammendments and their Mix tures with Soils: Importance of Organo-mineral Interactions"
3. Moskalchuk L.N. (Joint Institute for Power and Nuclear Re search – "Sosny", National Academy of Sciences of Belarus, Minsk, Belarus), "Radioactive Contamination of Soils in Belarus: Experience and Trends of Rehabilitation"
4. Kryshev A.I. (Scientific and Production Association "Typhoon", Obninsk, Russia) "Categorization of the Contaminated Territories Using the Radiation Risk Levels"
5. Kvasnikova E.V. (Institute of Global climate and Ecology, Moscow), "Radionuclide Content of Soils Near Excavation Explosions at the Semipalatinsk Test site 40 Years After"
6. Barysheva N.M. (FGUP Russian Federal Nuclear Center – VNIITF, Snezhinsk, Chelyabinsk reg., Russia) "Extraction of Radionuclides from Water Solutions".

Special cases of toxic soil contamination

1. Kapranov V.V., State Federal Enterprise for Science "Research Center for Toxicology and Hygienic Regulation of Bio preparations" at Federal Medico-Biological Agency, Serpuk hov, Moscow reg.: The assessment of the efficiency of microbial remediation of soils and silts, contaminated with polychlorinated biphenyls
2. Marchenko A.I., State Federal Enterprise for Science "Research Center for Toxicology and Hygienic Regulation of Biopreparations" at Federal Medico-Biological Agency, Serpukhov, Moscow reg.: Microbial indication of soddy-podzolic soil pollution by persistent organic pollutants
3. Filonov A.E.: Institute of Biochemistry and Physiology of Microorganisms RAS, Pushchino, Moscow reg.: Psychrotrophic microorganisms and catabolic plasmids for oil spill bioremediation in cold climates
4. Kydralieva K.A., Institute of Chemistry and Chemical Technology, NAS, Kyrgyz Republic: Utilization of technogenic contamination by humic substances and their derivatives
5. Svanidze Z.S., Georgian Technical University, Tbilisi, Georgia: Studying the specificity of soil contamination by highly toxic heavy metals in mining regions
6. Dunaitsev I.A., State Research Center for Applied Microbology and Biotechnology, Obolensk, Moscow reg.: Utilization of phosphate containing wastes by direct microbial phosphates mobilization

7. Sadunishvili T., Durmishidze Institute of Biochemistry and Biotechnology, Tbilisi, Georgia: Uptake and degradation of aromatic compounds by higher plants
8. Brainina Kh.Z., Ural State University of Economics, Ekaterinburg, Russia: Electrochemical methods of evaluation of environmental contamination and human organism intoxication
9. Ilyushchenko M.A., Almaty Institute of Power Engineering and Telecommunication, Kazakhstan, Almaty, Kazakhstan: Demercurization and post-demercurization monitoring in the area of the former chlor-alkali production in Pavlodar city, Northern Kazakhstan
10. Breus I.P., Kazan State University, Kazan, Tatarstan, Russia: Use of organo-modified minerals for sorption of BTX (benzene, toluene, p-xylene) causing soil and groundwater contamination

SpS 16 Netherlands Soil Partnership (NSP) and China

Friday, 6 June, 09.00 – 10.30 hrs, Hall Sagittarius

Organiser: NSP

The Netherlands, densely populated with 16 million people on 3.6 million hectares where also industry and agriculture prosper, have a history of 30 years of contaminated soil and groundwater policy.

Nowadays the basics of that "policy" can be an example, and is an example, for many industrialized countries. Dutch soil management offers a solid base for sustainable use of soil due to its "trial & error", its "learning on the job", its "innovations", its legislation, its targets, its executors, its variety of technologies and its organisation.

China has approximately 20% of the world population and has about 10% of the fertile soil surface of the world. China is also the "factory" of the world. The awareness of soil and groundwater contamination in China and the need of measures have been grown enormously in recent years. Together with the Chinese authorities the NSP will start a Centre of Excellence in Nanjing and some Technology Centres in different parts of China.

During a special session it will be shown how NSP representatives act in China, how various Chinese representatives respond, and which progress has been made.

SpS 17 Aquaterra: EUPOL & KNOWMAN

Friday, 6 June, 09.00 – 12.30 hrs, Hall Franci

Organisers: Slob, Rijnveld, Rijnaarts (TNO/NL)

The aim of the EUPOL session at ConSoil is to further identify the consequences of AquaTerra research results for the proposed Soil Thematic Strategy and other soil related policies. Both researchers and policy makers will be invited to join the session and discuss identified issues. The session will start with a short presentation from the perspective of AquaTerra, introducing significant conclusions and an assumption on how those would affect the implementation of the Soil Thematic Strategy. Most likely resilience, vulnerability and adaptive capacity of the natural system will be used as a framework to interpret the consequences of new insights from research for future policy measures.

SpS 18 PRB's: Longeivity and ENA effects

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Gemini

Organisers: Markus Ebert, Ralf Köber (Christian Albrechts University of Kiel, Germany), Hermann Schad (IMES GmbH, Germany), Leen Bastiaens (VITO, Belgium), Marco Petrangeli-Papini (University of Rome, Italy)

SpS 19 Funding priority KORA – retention and degradation processes reducing contaminants in groundwater and Soil

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Franci

Organiser: KORA/Germany

The task of the KORA funding priority (2002–2008) was the exploration of natural attenuation processes on twenty-four contaminated sites of six different industrial branches (refineries (main contaminant: TPH), gasworks (PAH), metal processing (chlorinated solvents), landfills (municipal waste, ammonia), former ammunition works (nitro aromatics), mining and sediments (heavy metals, pesticides). The aims were to develop technical and legal instruments to evaluate and use these processes in the risk assessment and remediation of contaminated soils and groundwater. For each of the six branches a guideline was authored based on the results of the funding priority. Additionally, the guidelines are accompanied by a handbook of recommendations for German authorities. In the special session at least the guidelines for using natural attenuation on sites contaminated with PAH and chlorinated solvents, respectively, as well as the handbook will be presented and discussed.

SpS 21 Measuring sustainability in remediation

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Martini

Organiser: Contaminated Land: Applications in Real Environments (CL:AIRE), UK

With an increasing focus on the sustainability of general business practices, the management of contaminated land has also come under the spotlight. Work on contaminated sites has traditionally been compartmentalised, which has not allowed the consideration of the environment in a holistic sense. To enhance the sustainability of outcomes in the management of contaminated land, this mindset must change. The consideration of sustainability in the remediation decision-making process is receiving attention from groups such as the Sustainable Remediation Forum (SURF) in the United States and the United Kingdom. These groups are currently trying to understand the key indicators associated with sustainability so that remedies for contaminated sites can be assessed and considered to aid decision-making. The off site impacts and benefits associated with the remediation of contaminated sites have not usually been incorporated into the decision making process. Incorporating off-site environmental, societal impacts, and economic impacts into decision-making will facilitate more sustainable and useful decisions.

The Special Session will include four papers and a panel discussion. Papers presented are:

- Setting the scene – UK SURF: Frank Evans, National Grid
- Policy framework – Brian Bone, UK Environment Agency
- Cost benefit analysis – David Reinke, Shell Global Solutions
- US SURF and EPA case studies – David Ellis, Dupont

The Special Session will be chaired by Professor Stephan Jefferis and the Expert Discussion Panel will include:

- Brian Bone – UK Environment Agency
- Paul Bardos – r^3 , David Ellis – Dupont
- Johan de Fraye – NICOLE Chair
- Richard Boyle – English Partnerships

SpS 22 Digital soil mapping and the implementation of Soil Thematic Strategy

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Taurus

Organisers: Peter Dietrich, Ulrike Werban (UFZ/Germany)

As formulated in the Thematic Strategy for Soil Protection prepared by the European Commission soil degradation is a serious problem in Europe. The degradation is driven or exacerbated by human activity and has a direct impact on water and air quality, biodiversity, climate and human life-quality.

High-resolution soil property maps are one major prerequisite for the specific protection of soil functions and restoration of

degraded soils as well as sustainable land use, water and environmental management. This requires the combination and integration of different measuring techniques, of pedometrical and pedophysical approaches, enhanced DSM techniques, as well as subsequent modelling approaches.

The focus in further research is on improving fast and reliable mapping of soil properties, soil functions and soil degradation threats. This session therefore will focus on ideas for the improvement as well as integration of geophysical and spectroscopic measurement techniques in combination with advanced soil sampling approaches, pedometrical and pedophysical approaches. Furthermore an important aspect is the sustainable dissemination of the technologies and concepts developed.

Presentations

- Interactions between soil related sciences – Linking geophysics, soil science and digital soil mapping
  Ulrike Werban[1], Thorsten Behrens[2], Giorgio Cassiani[3], Uta Sauer[1], Peter Dietrich[1]
- Methods and applications in digital soil mapping
  Thorsten Behrens[2]
- Soil parameters and geophysical parameters – Application of multi-parameter constitutive laws
  Giorgio Cassiani[3]
- Pedotransfer functions and hydropedology
  Steffen Zacharias[1]

[1]Helmholtz Centre for Environmental Research – UFZ, Monitoring & ExplorationTechnologies, Permoserstraße15, 04318 Leipzig, Germany,
ulrike.werban@ufz.de
steffen.zacharias@ufz.de

[2]University of Tübingen, Institute of Geography, Physical Geography, 72070Tübingen, Germany,
thorsten.behrens@uni-tuebingen.de

[3]University of Padova, Via Giotto 1, 35122 Padova, Italy,
giorgio.cassiani@unipd.it

SpS 23 Risk Management of contaminated land, which way to go?

Friday, 6 June, 14.00 – 15.30 hrs, Hall Sagittarius

Organiser: Gevaerts (NICOLE/Arcadis, Belgium)

We are all aware that dealing with contaminated land and trying to tackle our soil problems is accompanied by financial and liability risks. Especially in the north-western Europe it is more and more realised that no longer the human or ecotox risk are the main items/drivers, but liability issues and financial concerns.

The goal of this Special Session is to briefly give an overview of the risks of contaminated land, and then discuss possibilities to deal with those risks. Therefore in the introduction an overview of the different risks (liability, financial, managerial) is presented. In presentations risk models are presented and we will have a look at financial and insurance options to reduce or cover these risks. In the last part, a few case studies will be used to start the discussion with the public.

SpS 24 Management of groundwater protection areas

Tuesday, 3 June, 14.00 – 17.30 hrs, Hall Franci

Organisers: Cors van den Brink (Royal Haskoning), Martha Buitenkamp (Anantis) and Wennemar Cramer (Netherlands Ministry of Housing, Spatial Planning and Environment)

The Water Framework Directive and the new Groundwater Directive urge regulators of Member States and stakeholders to review existing policies and practises regarding the protection of groundwater used for drinking water supply. The aim of this special session is to discuss best practices for the management of groundwater protection areas. This discussion will be introduced by key presentations dealing with the European framework and national approaches in Germany, The Netherlands and UK. This will be followed by a discussion between the participants resulting in a set of conclusions and recommendations. The discussion will focus on land use planning, approach to conflicting functions, risk management, involvement of stakeholders and sharing responsibilities. It is envisaged that the discussions will include linkages with the EU Guidance Document on Drinking Water Protected Areas, the proposed Soil Framework Directive and with Water Safety Plans (under discussion as part of the revision of the Drinking Water Directive). In addition, the results of the discussions may contribute to the EU Guidance Document on Land Use and Groundwater, which is in preparation.

SpS 25 Technology development, an in-depth look at improving market uptake – linked to SpS 8 –

Wednesday, 4 June, 09.00 – 12.30 hrs, Hall Martini

Organisers: NICOLE, EURODEMO+

Market uptake of innovative soil and groundwater remediation technologies is disappointingly low throughout Europe because of stakeholder confidence issues. This is a shame, especially since many of these technologies really are very promising. In a triple feature special session the European networks NICOLE and EURODEMO+ jointly present an in-depth look into this important issue, with ample opportunity for discussion. You are cordially invited to participate in this discussion.

Part 1: Matching research needs and available options

Session chair: Arthur de Groof (NL, Grontmij, NICOLE Service providers subgroup)

Progress means continuous research. However, the number of potential research questions is boundless, so where to go from here? In this Special Session, we offer the floor to the problem owners. After a brief introduction of the NICOLE network, an industrial representative will show the most urgent research needs industrial companies are facing. Other stakeholders are scheduled to react:

- Johan de Fraye (B, Honeywell, NICOLE chairman): The NICOLE network
- Markus Ackermann (CH, DuPont, vice-chairman NICOLE Industry subgroup): Research needs and criteria for funding
- Jörg Frauenstein (DE, UBA, Snowman): Funding by Snowman, opportunities and criteria
- 5-minute reactions by Hans-Peter Koschitsky (DE, University of Stuttgart, NICOLE Academic), and Bertil Grundfelt (S, Kemakta, chairman NICOLE Service providers subgroup).

Part 2: The role of demonstration projects

Session chair: Arthur de Groof (NL, Grontmij, NICOLE Service providers subgroup)

Technology demonstrations are vital to improve confidence levels and therewith to provide better access to a European or global market. In this special session, the relevance of demonstrations for the field of soil and groundwater remediation shall be shown, underlined by colourful examples. Demonstration needs, existing support measures and stakeholder responses will be presented and discussed in an open forum. Future strategies and current developments on European scale will be discussed. As part of this session, EURODEMO+, a new European network of national demonstration platforms, will be introduced.

- John Waters (UK, ERM, NICOLE Service providers subgroup): Funding, what funding? A provocative look at conditions for successful innovation
- Timo Heimovaara (NL, Delft University of Technology, NICOLE Service providers subgroup): What demonstrations need: appropriate support measures for demonstrations
- Yvonne Spira (A, UBA, EURODEMO): EURODEMO and EURODEMO+
- Discussion between session participants and the speakers on researcher's and demonstrator's needs.

TIME TABLE

THEMES

A POLICIES: strategies, legislation, regulations, guidelines, etc.
B FUNCTIONS & VALUES of soil-water systems – understanding of processes
C SITE INVESTIGATION: Monitoring & Screening
D RISKS & IMPACTS
E REMEDIATION concepts & technologies
F SUSTAINABLE & RISK BASED LAND MANAGEMENT
G COMPLETE CASES
H COASTAL ZONES

Time	Hall	TUESDAY 3 June
8.00		Registration
9.30	Auditorium	Opening Session
10.30		**Break**
11.00		**Lecture Sessions (LeS):**
	Sagittarius	A.5 POLICIES: Science/policy interface
	Scorpio	B.1 FUNCTIONS & VALUES: Climate change: adaptation and research
	Aquarius	C.1 SITE INVESTIGATION: Sensors – 1
	Libra	C.3 SITE INVESTIGATION: Concepts – 1
	Taurus	E.1 REMEDIATION: In-situ Chemical Oxidation – 1
	Franci	F.2 SUST. & RISK BASED LAND MANAGEMENT: Brownfields
		Special Sessions (SpS):
	Gemini	5 SNOWMAN
	Martini	12 The Role of Risk Based Contaminated Land Management in Sustainable Urban Regeneration (CABERNET)
	Aries	**US EPA Session:** Introduction to the Tools and Mechanics od Systematic Planning
12.30		**Lunch**
14.00		**Lecture Sessions (LeS):**
	Libra	B.3 FUNCTIONS & VALUES: Beneficial microbial functions
	Taurus	E.3 REMEDIATION: Nano-scale iron
	Sagittarius	E.10 REMEDIATION: Decision support tools
	Gemini	G.1 COMPLETE CASES: Former industrial and military sites
	Scorpio	H.1 COASTAL ZONES
		Special Sessions (SpS):
	Aquarius	14 A short training on modelling human exposure due to contaminated soil
	Franci	24 Management of Groundwater Protection Areas – 1
		Country Sessions (CyS):
	Martini	Germany: The 4th dimension of site and land management: Cross-link of research and practice – the German way
	Aries	**US EPA Session:** Demonstration of Method Applicability and QC for XRF
15.30		**Break**
16.00		**Lecture Sessions (LeS):**
	Sagittarius	A.2 POLICIES: International dimension
	Libra	E.12 REMEDIATION: Heavy metals
	Aquarius	E.15 REMEDIATION: Electrical techniques
	Gemini	F.1 SUST. & RISK BASED LAND MANAGEMENT: Instruments Sustainable Land Management
		Special Sessions (SpS):
	Martini	21 Measuring Sustainability in Remediation (CL:AIRE)
	Taurus	22 Digital Soil Mapping and the implementation of Soil Thematic Strategy
	Franci	24 Management of Groundwater Protection Areas – 2
	Scorpio	27 Integrating Landscape Ecology, Fate and Transport Modeling for Risk Mapping in Soil Contamination in Europe
	Aries	**US EPA Session:** Green Remediation
17.30 – 19.00		**Get together**

Time	Hall	WEDNESDAY 4 June
9.00		**Lecture Sessions (LeS):**
	Taurus	B.2 FUNCTIONS & VALUES: Land use and consequences for (ground)water
	Sagittarius	D.2 RISK & IMPACTS: Human exposure & assessment – 2
	Scorpio	D.7 RISK & IMPACTS: Bioavailability & bioaccessibility
	Libra	E.2 REMEDIATION: In-situ Chemical Oxidation – 2
	Franci	E.14 REMEDIATION: Source zone treatment
		Special Sessions (SpS):
	Gemini	10 ConSoil and the EU Framework Directive for Soil Protection – 1
	Aquarius	15 International Science and Technology Center, Moscow (ISTC) – 1
	Martini	25 Technology development, an in-depth look at improving market uptake: Matching research needs and available options (NICOLE) – 1
	Aries	**US EPA Session:** Critical Role of Data Management
		Italian Satellite Conference
	Auditorium	*La Conferenza sarà in lingua italiana.Sarà fornuita la traduzione simultanea italiano-inglese. Il pomeriggio sarà aperto alla partecipazione individuale ai lavori di qualsiasi sessione prevista in CONSOIL.* *The conference language is Italian. There will be simultaneous interpretation into English.* *In the afternoon, each participant will be set free to attend CONSOIL sessions.*
10.30		**Break**
11.00		**Lecture Sessions (LeS):**
	Scorpio	C.5 SITE INVESTIGATION: Analytics – 1
	Sagittarius	D.3 RISK & IMPACTS: Ecological Risk Assessment
	Libra	E.6 REMEDIATION: Natural Attenuation
	Tuarus	E.16 REMEDIATION: Special subjects – 1
		Special Sessions (SpS):
	Gemini	10 ConSoil and the EU Framework Directive for Soil Protection – 2
	Aquarius	15 International Science and Technology Center, Moscow (ISTC) – 2
	Martini	25 Technology development, an in-depth look at improving market uptake: The role of demonstration projects (NICOLE) – 2
		Country Sessions (CyS):
	Franci	Netherlands: The living Soil is our Existence
	Aries	**US EPA Session:** Best Management Practices Part 1: Conceptual Site Models
	Auditorium	**Italian Satellite Conference:** *La Conferenza sarà in lingua italiana.Sarà fornuita la traduzione simultanea italiano-inglese. Il pomeriggio sarà aperto alla partecipazione individuale ai lavori di qualsiasi sessione prevista in CONSOIL.* *The conference language is Italian. There will be simultaneous interpretation into English.* *In the afternoon, each participant will be set free to attend ConSoil sessions.*
12.30		**Lunch**
14.00		**Lecture Sessions (LeS):**
	Sagittarius	A.1 POLICIES: EU dimension
	Aquarius	E.7 REMEDIATION: Enhanced Natural Attenuation – 1
	Libra	F.4 SUST. & RISK BASED LAND MANAGEMENT: New approaches
	Taurus	G.3 COMPLETE CASES: Harbours/Waterfronts
		Special Sessions (SpS):
	Scorpio	7 Towards harmonised human health risk assessment across Europe: Sorting the possible from the impossible
	Martini	8 Technology development, an in-depth look at improving market uptake: Towards a common paper on research and demonstration needs (NICOLE/EURODEMO)
	Gemini	28 Un approccio integrato per l'implementazione delle Direttive Europee sul Suolo e sulle Acque in Italia *(Italian spoken)*
		Country Sessions (CyS):
	Franci	Flanders: Flemish Soil Remediation: Fashionable Creativity
	Aries	**US EPA Session**: Best Management Practices Part 2: Dynamic Work Strategies
15.30		**Break**
16.00 – 17.30		**Poster session** *Poster social with drinks and snacks* *Note: Posters will be displayed during all conference days*

Time	Hall	THURSDAY 5 June	
9.00		**Lecture Sessions (LeS):**	
	Scorpio	A.4 POLICIES: Soil quality objectives	
	Libra	D.4 RISK & IMPACTS: Fate & Transport – 1	
	Sagittarius	E.4 REMEDIATION: Thermal techniques – 1	
	Martini	F.3 SUST. & RISK BASED LAND MANAGEMENT: (Ground)water	
		Special Sessions (SpS):	
	Taurus	3 Advances in the Use of Bioaccessibility Data in Quantitative Risk Assessment through Practical Applications (BARGE) – 1	
	Aquarius	9 Perspectives: From low to non-invasive site assessment and characterization – Model driven Soil Probing (MODELPROBE) – 1	
	Gemini	18 PRB's: Longivity and ENA effects	
	Franci	19 Retention and Degradation Processes reducing Contaminants in Groundwater and Soil (KORA)	
	Aries	**US EPA Session:** Sample Design Part 1	
10.30		**Break**	
11.00		**Lecture Sessions (LeS):**	
	Libra	A.3 POLICIES: Policy formulation and performance	
	Sagittarius	D.5 RISK & IMPACTS: Fate & Transport – 2	
	Martini	E.11 REMEDIATION: Modelling	
	Gemini	E.13 REMEDIATION: Barriers	
		Special Sessions (SpS):	
	Scorpio	2 Green Remediation	
	Taurus	3 Advances in the Use of Bioaccessibility Data in Quantitative Risk Assessment through Practical Applications (BARGE) – 2	
	Aquarius	9 Perspectives: From low to non-invasive site assessment and characterization – Model driven Soil Probing (MODELPROBE) – 2	
	Franci	26 Results of the NATO/CCMS Initiatives (2003–2007) and proposed NATO/SPS Program on Contaminated land	
	Aries	**US EPA Session:** Sample Design Part 2	
12.30 – 17.00		**5 half-day Technical Tours** • Limited number of participants • Registration at Conference • Lunch served for Technical Tours participants only	**Guided City Tours:** • Limited number of participants • Registration at Conference • NO LUNCH by ConSoil
19.30 –		**Conference evening with dinner**	

Time	Hall	FRIDAY 6 June
9.00		**Lecture Sessions (LeS):**
	Libra	D.6 RISK & IMPACTS: Decision making & Risk assessment
	Gemini	E.8 REMEDIATION: Enhanced Natural Attenuation – 2
	Martini	E.9 REMEDIATION: Non-conventional concepts
	Aquarius	F.5 SUST. & RISK BASED LAND MANAGEMENT: Social aspects
		Special Sessions (SpS):
	Taurus	13 RISKBASE
	Sagittarius	16 Netherlands Soil Partnership (NSP) and China
	Franci	17 Aquaterra: EUPOL & KNOWMAN – 1
	Aries	**US EPA Session:** Introduction to the Tools and Mechanics of Systematic Planning
10.30		**Break**
11.00		**Lecture Sessions (LeS):**
	Aquarius	A.6 POLICIES: Social/economic aspects
	Sagittarius	D.1 RISK & IMPACTS: Human Exposure & Assessment – 1
	Martini	D.8 RISK & IMPACTS: Quality Insurance in Risk Assessment
	Taurus	E.17 REMEDIATION: Special subjects – 2
	Libra	G.2 COMPLETE CASES: Brownfields
		Special Sessions (SpS):
	Scorpio	1 Brownfields, Bioenergy and Biofeedstocks
	Gemini	6 BeNeKempen
	Franci	17 Aquaterra: EUPOL & KNOWMAN – 2
	Aries	**US EPA Session:** Green Remediation
12.30		**Lunch**
14.00		**Lecture Sessions (LeS):**
	Aquarius	C.2 SITE INVESTIGATION: Sensors – 2
	Libra	C.4 SITE INVESTIGATION: Concepts – 2
	Taurus	E.5 REMEDIATION: Thermal techniques – 2
	Martini	F.6 SUST. & RISK BASED LAND MANAGEMENT: Environmental aspects & costs
		Special Sessions (SpS):
	Gemini	4 Environmental Technology Verification – an instrument to promote remediation and monitoring technologies (PROMOTE)
	Sagittarius	23 Risk Management of contaminated land, which way to go?
	Aries	**US EPA Session:** EU Panel
15.45	Auditorium	Closing Session

End: approx. 16.30

SpS 26 Results of the NATO/CCMS initiatives (2003–2007) and proposed NATO/SPS Program on Contaminated Land

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Franci

Organisers/chairs: Walter Kovalick, Francesca Quercia, Zdravko Spiric

Results of the NATO/CCMS Initiatives (2003–2007)

The pilot study on Prevention and Remediation in Selected Industrial Sectors was launched as a nationally-funded activity by the NATO Committee of the Challenges of Modern Society (CCMS) in November 2002 under the leadership of the U.S.A.

The purpose of the study was to define and explore best practices for reducing the health and environmental impact on soil and groundwater of industrial sectors of interest as well as other unique site "types". A consensus process was used to select the sector for each meeting of the pilot study. The list of sectors covered with the location of the annual meetings was:

- Non-ferrous mining – Baia Mare, Romania – Sep., 2003
- Rehabilitation of old (municipal) landfills – Cardiff, Wales – May, 2004
- Megasites (former large-scale industrial facilities) – Ottawa, Canada – June, 2005
- Small sites in urban areas – Athens, Greece – June, 2006
- Sediment sites – Ljubljana, Slovenia – June, 2007

After five years of work, the pilot study group – including 27 NATO member, partner and contact countries – came to a number of technical conclusions concerning risk management and risk assessment integration, best available cleanup technologies, large-scale projects, economic issues and management of contamination in urban areas. Annual reports in the "CCMS Blue Book Series", CDs and related power point presentations on the NATO web site at *www.nato.int/science* were produced each year.

The proposed NATO/SPS Program on Contaminated Land

Purpose of the proposed new program, under the leadership of Italy and Croatia, is the involvement of member, partner and Mediterranean dialogue countries in discussing and exploring integrated approaches to the management of contaminated land and protection of drinking water resources.

A preliminary Advanced Research Workshop, with subject 'Drinking Water Protection by Integrated Management of Contaminated Land', is being considered for proposal of funding under the NATO Science for Peace and Security Program. Several countries (member, partner and Mediterranean dialogue countries) have already shown their interest in participating in the workshop.

Typical topics to be explored in the workshop agenda are industrial operations, land contamination problem definition and risk assessment, measurement and monitoring strategies, management of drinking water supplies, remediation approaches for both soil and groundwater, transboundary water management problems, climate change issues, needs for further research.

Considered meeting agenda will last three working days and include technical sessions, country sessions, round table discussions and a site visit.

SpS 27 Integrating landscape ecology, fate and transport modeling for risk mapping of soil contamination in Europe

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Scorpio

Organisers: Alberto Pistocchi, Giovanni Bidoglio (EC, Joint Research Centre)

Discharges, emissions and losses of contaminants to the environment are multi-pathway and multi-media processes. Chemicals do not stop at boundaries of environmental media simply because policies fix quality objectives focusing on a specific environmental compartment or because the specialist addressing the matter has a stronger soil background rather than training in e.g. hydrology. Applying these considerations to risk mapping of soil-water contamination and to analyses of trade-offs in mitigation strategies would then imply to account for the functioning of the coupled terrestrial/aquatic/atmospheric interface.

The session will feature research challenges in addressing spatial issues of soil-water contamination from a pan-European perspective. It will deal with bringing together emission sources, ecosystem properties and other pan-European information in a tiered approach for a multi-scale and multi-media impact assessment. The description of pollution dynamics in a spatially explicit way is attracting increasing attention for effects such as landscape fragmentation or landforms on pollution loading from soils to streams. The session will address linking of landscape ecology and traditional ecology to the spatial distribution of contamination, pollutant transport mechanisms, and mechanisms of reaction, vulnerability and resilience of soil-water ecosystems to contamination. The session will include three presentations:

- Consequence of spatial variation in the levels of contamination on exposure in relation to the territorial behavior of different species
- The effect of landscape ecological structure (e.g. patchiness, isolation, connectivity) on vulnerability and resilience of the soil-water ecosystems
- Spatially explicit multi-media models: trade-offs between realism and applicability in real world decision making

introducing a final open discussion on the framework for geographically meaningful ecological risk assessment of chemical pollutants over large regions.

SpS 28 Un approccio integrato per l"implementazione delle Direttive Europee sul Suolo e sulle Acque in Italia

– An integrated approach towards the Implementation of the SFD and WFD in Italy –

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Gemini

Language: Italian (no interpretation into English)
Organisers: Hans Van Duijne (Deltares-TNO), Laura D'Aprile (APAT), Sara Picone (Deltares/TNO-Wageningen University)

La vigente Direttiva sulle Acque e quella sul Suolo affrontano tematiche fortemente collegate tra loro: é possibile che la loro implementazione venga pianificata in modo integrato a scala di bacino?

La sessione, focalizzata sulla situazione Italiana a scala regionale, tratterà delle opportunità e delle problematiche relative all´integrazione delle direttive suolo ed acque e alla loro applicazione. Saranno discusse prospettive e criticità derivanti dall'implementazione a livello regionale e di bacino idrografico.

The existing Water Framework Directive and the upcoming Soil Framework Directive address strongly related issues: is it possible to implement them in an integrated approach in the River basin management plans?

The session, focusing on the Italian situation at a regional scale, will discuss the application of the two directives and the challenges related to their implementation. Some perspectives and critical points related to the Implementation of the Directives at a regional and river basin scale can be the output of this session.

COUNTRY SESSIONS (CyS)

In Country Sessions (CyS) representatives of countries/regions highlight developments of specific importance to their countries/ regions.

CyS 1 Flemish soil remediation: Fashionable creativity

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Franci

Organisers: Flanders

OVAM: Eddy Van Dyck, Victor Dries
OVB: Siegfried D'Haene, Jan Haemers
VEB: Wouter Gevaerts, Karel Van Nieuwenhove
VITO: Ludo Diels, Johan Gemoets

At the ConSoil 2005 Conference, Flanders demonstrated that quality, diversity, innovation and communication are key words in dealing with contaminated land. In an interactive tasting session called 'Cooperation: Key in the Drive for Clean Soil', visitors could discover the link between Flemish Beer and soil remediation in Flanders.

As the ConSoil Conference 2008 takes place in Milano, we are proud to present our Flemish fashion designers! A session about fashion at ConSoil? Let's tell you more…!

In the early 1980s, a generation of talented fashion designers graduated from Antwerp's Royal Academy. Six of them became very successful and are known in the fashionworld as the "Antwerp Six": Ann Demeulemeester, Dries Van Noten, Dirk Bikkembergs, Dirk Vansaene, Walter Van Beirendonck and Marina Yee. Together they put Flanders on the map of avant-garde fashion. Since then many young fashion designers have followed their example.

Similar to the fashion story, the Flemish soil remediation policy is a story of success.

Flanders might be geographically small, we can honestly say that the sound legislation, the continuous strive for high quality and the consultation with different stakeholders make our contaminated land approach 'big'.

Together with the Flemish Research Institute (VITO), private consultants (VEB) and contractors (OVB), the government (OVAM) contributes significantly to the implementation of the Flemish soil remediation policy which is innovative to say the least. As a result of this, these four partners can present a diversity of solutions for soil pollution here at ConSoil 2008. Through these concrete cases, one can learn how standardisation (prêt-à-porter) can solve frequently appearing soil problems in a cost-efficient and qualitative way. In addition, one can get a feeling how special problems are dealt with in Flanders (haute coûture). In some remediation projects, innovative techniques and new research tools are used. In other cases, we even have created tailor-made legal solutions which our soil remediation legislation can provide for. Whatever the problems may be: we create solutions from "prêt-à-porter" to "haute coûture"!

This is the very core of the Flemish contaminated land management: in close collaboration with each other the four partners find practical and efficient solutions to manage contaminated sites in the very best way!

CyS 2 The 4th dimension of site and land management: Cross-link of research and practice – the German way

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Martini

Organisers: Project Management Agency Forschungszentrum Karlsruhe

Moderator: Sibylle Grandel (Christian Albrechts University of Kiel)

Panelists: Martin Wegner (MULL & PARTNER Ingenieurgesellschaft mbH, Hannover)

Harald Burmeier (Leuphana University of Lüneburg)

Martin Keil (Saxony-Anhalt`s State Authority, Magdeburg)

Holger Weiss (Helmholtz Centre for Environmental Research – UFZ, Leipzig)

Johannes Müller (State Authority for Mining, Energy and Geology, Hannover)

Georg Teutsch (Helmholtz Centre for Environmental Research – UFZ, Leipzig)

Tanja Meyer-Glubrecht (MULL & PARTNER Ingenieurgesellschaft mbH, Hannover)

Maike Hauschild (Project Management Agency Jülich)

Hermann Rügner (Helmholtz Centre for Environmental Research – UFZ, Leipzig)

Martin Bittens (Helmholtz Centre for Environmental Research – UFZ, Leipzig)

Intensive research in the area of groundwater, soil and contaminated site remediation in Germany has a history of more than thirty years. What has been the experience? What has been achieved? Where do we stand? What questions are still open?

Provocative questions, interesting discussions, and exciting information will be in the focus of this year's German country session. Interest will center on exchanges of experience between science and practice about more than thirty years of research in the management of contaminated sites and land, and on discussions with the audience.

Germany is a very densely populated country characterized by intensive utilization of its groundwater and soil resources. In the past, a continuously increasing number of contaminated sites as well as the use of more and more land showed the urgent need for integrated problem assessment and for new and more flexible approaches.

The problem of contaminated sites and the associated impact on groundwater and soil have long been known as important political, ecological, economic, technical, and legal challenges not only nationally but also internationally.

In the light of the more and more complex problems coming up, and the need to find solutions, research promotion in Germany has a long tradition in areas of contaminated site remediation, protection of groundwater and soil, and area management.

It is time to take stock.

Thirty years of contaminated site and land management in Germany means

1. point solutions growing into solutions for complete areas or regions,
2. purely technological solutions expanding into conceptual approaches,
3. knowledge gain turning into the creation of awareness.

Thirty years of contaminated site and land management, in a fourth dimension, also means closer interconnection of science and practice and more interdisciplinary research.

Experience in science and practice in these four areas will be discussed.

Against the background of a rising complexity of problems and growing challenges, the German Federal Ministry for Education and Research (BMBF) expanded its research promotion from, initially, straightforward technological developments increasingly also to the evolution of concepts, communication, creation of awareness up to knowledge transfer.

Germany's approach to managing contaminated sites and land will be outlined in a panel discussion, which may involve some critical questions, with representatives from science and practice on the basis of these funding programs:

- RUBIN – Application of Reactive Barriers for Site Remediation,
- SAFIRA – In-situ Remediation of Heavily Contaminated Groundwater,
- KORA – Monitored Natural Attenuation,
- REFINA – Reduction of Land Consumption and Sustainable Land Management,
- TASK – Terra-Aqua & Site Remediation Competence Center and Network.

CyS 3 The living soil is our existence

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Franci

P.F. (Piet) Otte; National Institute for Public Health and the Environment, pf.otte@rivm.nl, +31 302743965

J.L. (Josja) Veraart; Royal Haskoning, j.veraart@royalhaskoning.com, +31 102865274

J.H.A.M. (Jos) Verheul; SenterNovem, Bodem,

j.verheul@senternovem.nl, +31 703735498
A.E. (Sandra) Boekhold, Soil Protection Technical Committee, boekhold@tcbodem.nl, +31 703393035

Striking right chords

The Dutch Country Session 2008 will offer you a broad range of different perspectives on soil use and sustainable soil quality management. These, we would like to discuss with you together with other interesting matters. We will present three different views to soil quality and soil use. Soil as the provider of profitable services, soil as a valuable and sensible entity to be preserved for future generations and soil as a sustainable system when used in a responsible way. Do you have already a preference or are you able to surprise us with another view? Yes, we like to explore new ways and hear creative ideas. Attend our spectacular interactive session and don't miss the opportunity to change your and our ideas about soil quality!

Living soil is our existence

Agriculture, vegetation, housing and spatial planning can't do without soil. Life is derived from the soil or needs the soil to exist. The living soil provides us with essential services. A good soil quality contributes to clean drinking water resources, sustains soil fertility and supports our infrastructure. Soil offers challenging opportunities for the energy problem, subsoil use, water buffering and many more. Together we will explore these possibilities and give way to new perspectives on soil quality. "To think outside the box" and change the narrow view from toxicant-induced limitations, to sustainable soil usage options linked to soil qualities.

To new ambitions

The Dutch government recognized the importance to initiate a process which results in an increased consciousness in the use of soils by all parties. It is a challenge to link soil management with other environmental and spatial aspects such as climate, energy and spatial development. Fitness for use should be, more then nowadays, a leading factor within spatial development. The fact that natural soil stratifications should be a key determinant for spatial planning and soil use, is reconsidered and regains importance as compared to generic concepts like concentration and distribution. It seems one has forgotten this key role of natural determinants of spatial planning, in view of new towns being constructed in the deepest of Dutch polders. Authorities should give way to thoughts, ideas, motives and decisions regarding soil quality and developed ambitions for their land in cooperation with other stakeholders (see www.soilambitions.eu). Their Soil Quality Ambitions can encompass much more aspects then the often limiting classical chemical soil quality themes. Ambitions for soil quality do also embody physical, ecological and cultural values, and the associated management options to optimize soil processes and, when needed, interventions.

The importance of a living soil for a sustainable and pleasant environment is more and more recognized. The Netherlands wants to see spirit to accompany ratio in soil use planning and soil management. For November 2008, "The week of the living soil" is planned as only one of the Dutch activities in a broader campaign to reach a set of novel targets:

- all policy planning consider sustainable soil use as part of the (spatial) planning processes;
- novel collaborations need to be established, to circumvent current institutional limitations that have evolved as a consequence of issue-by-issue regulations;
- support for the novel views by local responsible authorities when they have to solve complex problems;
- students are attracted to courses related to soil quality and soil use.

In short, the soil is a living entity, not only as an obvious fact, but also as an item on the Dutch regulatory agenda for the coming decades. This country session will present you an appetizing, playful and interactive show – demonstrating how the novel approaches inspire local soil users, soil policy makers, and citizens.

U.S. Environmental Protection Agency Technical Sessions

Employing Best Management and Technical Practices In Site Cleanup Programs

All days in Hall Aries

Best management and technical practices in site cleanup programs are the basis for ensuring high quality, cost effective, and defensible project success. Approaches that maximize the benefits of today's systematic planning methods, real-time analyses, data management and visualization tools, and dynamic decision making practices have shown significant improvement to project and program efficiencies. Additionally, green remediation approaches are minimizing the environmental footprint of cleanup projects.

Since ConSoil 2005, the U.S. government and others involved in the Triad "community of practice" have expanded the role of best practices and integrated these into regulatory frameworks, moving beyond the theoretical to real applications. The focus of this series of technical sessions provides a perspective on the expanding influence of specific best management and technical practices and the impacts on practical site implementation. It also introduces the concept of green remediation to share experiences and foster communication on developing practices.

Time slots	Tue June 3	Wed June 4	Thur June 5	Fri June 6
09.00-10.30		Critical Role of Data Management	Sample Design Part 1	Introduction to the Tools and Mechanics of Systematic Planning
11.00-12.30	Introduction to the Tools and Mechanics of Systematic	Best Management Practices Part 1 Conceptual Site Models	Sample Design Part 2	Green Remediation
14.00-15.30	Demonstration of Method Applicability and QC for XRF	Best Management Practices Part 2 Dynamic Work Strategies		EU Panel
16.00-17.30	Green Remediation			

Speakers will include:

Stephen Dyment, U.S. Environmental Protection Agency
Robert Howe, Tetra Tech EM Inc. (EPA Support Contractor)
Dave LePoire, Argonne National Laboratory U.S Dept. of Energy
Sandra Novotny, EMSUS (EPA Support Contractor)
Carlos Pachon, U.S. Environmental Protection Agency
Tom Purucker, U.S. Environmental Protection Agency

Introduction to the Tools and Mechanics of Systematic Project Planning

Tuesday, 3 june, 11.00 – 12.30 hrs, Hall Aries

Friday, 6 June, 09.00 – 10.30 hrs, Hall Aries

Under the US EPA's Triad approach a comprehensive systematic planning process has been shown to significantly enhance stakeholder acceptance, project team functionality, technical planning, uncertainty management, and overall project success at hazardous waste sites. Within a Triad framework, systematic project planning (SPP) extends beyond data quality objectives to include social, economic, and political factors that can have a significant impact on project outcomes. Conceptual site models (CSMs) play a critical role in project planning as project teams seek to recognize, identify, and manage uncertainty related to technical, regulatory, and fiscal project constraints.

This workshop will provide a framework and an overview of tools available to assist project teams with comprehensive SPP. Practical considerations associated with expected regulatory frameworks, property re-use, potential remedies, performance metrics, applicable or relevant and appropriate requirements (ARARs), and other critical factors will be discussed in the context of developing exit strategies and achieving a consensus site vision.

Participants will be exposed to a "briefcase" containing templates, examples, resources, and process assistance gear that accompanies many successful team leaders to systematic planning meetings. The tools and mechanics showcased should provide sufficient flexibility to incorporate many of these planning best management practices into your environmental programs. Discussions of the impact of available contacting mechanisms, decision criteria development, contingencies, dynamic work strategies, and activity sequencing are provided in an effort to streamline field activities and compress project timeframes to achieve time and cost savings. The importance of data management, field decision authority, remote stakeholder participation, and quality assurance/quality control will also be highlighted to provide a cross walk between critical project elements and available tools or strategies.

Conducting a Demonstration of Method Applicability and Designing Quality Control Programs for Field Portable X-ray Fluorescence (XRF) Applications

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Aries

Field portable X-ray fluorescence (XRF) instrumentation is now commonly used for many applications within the environmental industry. Although years of experience indicates that XRF provides fast, accurate, high quality, defensible information many environmental professionals still consider XRF data as "field screening". In an effort to move beyond conventional XRF expectations, the US EPA's Technology Innovation and Field Services Division has developed a 90 minute presentation exploring the benefits of conducting a demonstration of method applicability (DMA) and incorporating the results into a comprehensive quality control (QC) program.

The session will discuss strategies for designing DMAs and using collaborative data sets to develop and refine QC programs for field applications of XRF. Particular emphasis will be placed on the "real-time" value of XRF information and how appropriately structured QC programs can provide high quality defensible data similar to information expected from many of today's common laboratory analyses. Presenters will provide examples of DMA outputs, types of QC samples and activities, as well as the development and use of collaborative relationships between XRF and inductively coupled plasma (ICP) analyses. The session is expected to touch on potential pitfalls and limitations as well as previously employed successful strategies for using XRF effectively in decision making.

Green Remediation

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Aries

Friday, 6 June, 11.00 – 12.30 hrs, Hall Aries

Business sectors around the world are "going green" in order to become better environmental stewards and the business of cleaning up and revitalizing contaminated sites is no different. In recent years EPA has sought to increase the sustainability of redevelopment at previously contaminated sites. More recently there has been increasing interest in EPA's Office of Solid Waste and Emergency Response (OSWER) in identifying best practices that will help reduce the environmental footprint of the actual site cleanup activities. The concept is being termed "green remediation".

"Green remediation" is the practice of considering all environmental effects of remedy implementation, and incorporating options to maximize net environmental benefit of contaminated site cleanup projects. Sustainable cleanup practices place greater emphasis on considering a project's energy requirements, air emissions, water consumption, impacts on land and ecosystems, material consumption and waste generation, and impacts on long-term stewardship of a site. The concept of green remediation builds on environmentally conscious practices already used across business and public sectors, but seeks ways to adapt and adopt state-of-the-art practices and products to reduce the environmental footprints at cleanup projects, regardless of the regulatory framework. The session will focus on exactly how a site cleanup can go greener, examining our usual ways of doing business to find more opportunities to conserve natural resources and energy.

The Critical Role of Data Management

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Aries

Using conceptual site modeling as a foundation, participants in this technical session will learn how to best manage the many types and large quantities of data that often flow from real-time data collection tools and other data sources during site investigation and cleanup activities. These data management approaches will be coupled with the use of decision support tools and advanced visualization software to better understand and communicate site information. Collaborative work environments created virtually to reach team members also will be explored. Participants will gain an appreciation of an expanded site data and information life cycle, from collection, transfer, and storage to processing, analysis, decision-making, visualization, and communication to support effective decision making and site management.

Best Management Practices: Part I
Conceptual Site Model Case Studies

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Ariel

Robust conceptual site models (CSM) are essential to project success throughout any site cleanup. Initial or preliminary conceptual site models serve as planning tools for the technical project team to conceptualize and visualize what is known or unknown about a site in terms of contaminants of concern, contaminant distribution, geology, hydrogeology, receptor pathway networks, historical activities, and a host of other critical information. By capturing this information in a holistic CSM that incorporates text, tables, figures, and 3D visualizations, project technical teams can efficiently prioritize and address potential data gaps, uncertainties, or stakeholder concerns. Particularly with contentious sites, the CSM serves as a facilitation tool where competing site visions are verified or disproved and resources can be applied in the most cost effective manner to meet project decision criteria.

As the project matures, the CSM serves as a living representation of site realities as they unfold. Continuous updates provide the framework for public presentations and technical planning for remediation evaluations, cleanup implementation, or monitoring remedy effectiveness. This session will explore in depth several case studies where sound CSMs were the linchpin for sampling design, project communication, stakeholder consensus, and ultimate project success.

Best Management Practices: Part II
Dynamic Work Strategy Case Studies

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Ariel

Dynamic work strategies (DWS) allow effective use of real-time measurements to drive field activities. Efficient DWS are critical to increasing data density expeditiously to target site uncertainties while controlling project costs and maximizing resources. A carefully planned DWS includes contingencies for when technologies or strategies don't work as planned and help to streamline the data collection process by providing a flexible decision framework driven by field decisions. Stakeholders and technical team members not on site during field activities still provide critical input through web based collaboration tools and visualization packages.

This session will provide an in depth look at several case studies where DWS were not only successfully employed but critical in data collection efforts necessary to make project decisions. The case studies will highlight how decision logic developed during systematic planning was used to drive sampling design and target areas of concern in real time.

Sample Design Part I and II

Thursday, 5 June, 09.00 – 12.30 hrs, Hall Aries

The sampling design sessions focus on contaminated soils and provide a look at designs that extend beyond simple random or “gridded” grab-sample formats. More advanced designs can reduce sampling and analytical costs while simultaneously improving data quality and usability. This session is presented using common sense concepts (not statistical equations) such that project managers can provide confident and critical reviews of proposed sampling designs and communicate data needs to their contractors. More technical audiences will be exposed to advanced sampling designs that target many of the real world uncertainties related to sampling while providing context to analytical uncertainties that have been the focus of most historical quality control activities.

Difficulties posed by generating data from heterogeneous environmental media such as soils, sediments, and groundwater aquifers are evaluated. Strategies that apply to newer technologies and best practices that often outperform older strategies are described while data sets from actual sites illustrate the pitfalls of some older practices. Particular attention is paid to the concept of defining decisions and decisions units such that representative samples can be collected. Sample designs for searching vs. parameter estimation are provided to illustrate the effectiveness of designs that utilize non-traditional methods such as multi-incremental sampling and adaptive compositing.

Joint European-US Panel Discussion

Friday, 6 June, 14.00 – 15.30 hrs, Hall Aries

Environmental professionals from both sides of the Atlantic are increasingly collaborating and sharing their experiences in improving approaches to contaminated site cleanups. In this spirit, experts from the United States and Europe will discuss the state of the practice in environmental clean-up projects, focusing on how lessons learned can be readily adopted by regulators, practitioners, and clients of environmental services companies. The panelists will draw from their experiences in achieving increased cost-effectiveness and success rates at projects by employing systematic planning and other components of the Triad (see EPA Technical Seminar Series), and from green remediation practices that are reducing the environmental footprint of contaminated site cleanups. Considerations may include technical difficulties, regulatory and policy obstacles, and business practices that foster or impede such practices.

ITALIAN SATELLITE CONFERENCE

Wednesday, June 4th 2008, 9.00–13.30 h

Organised by Provincia di Milano and Sapienza University of Rome

Environmental and economic requalification of contaminated sites in Italy: experiences and perspectives in the frame of recent environmental laws

Riqualificazione ambientale ed economica di siti contaminati in Italia: esperienze e prospettive alla luce della recente normativa

Seminar language is Italian.

In the afternoon, each participant will be set free to attend any ConSoil sessions.

Aims

The experience on remediation of contaminated sites in Italy as governed since 1997 by the first national rule, the recent changes of this regulatory framework giving a stronger orientation toward site-specific remediation, the need for coordinating the site remediation with the European Directive on environmental liability, and the increasing need to combine remediation and economic requalification of contaminated sites, also to protect undisturbed area, give a regulatory, technical and economic framework where new approaches have to be defined towards more sustainable remediation. ConSoil conference will offer a platform where these topics will be discussed by comparing views and needs of public and private parties at the national level, while also offering the possibility for a more general view on regulatory and technical trends at international level.

Preliminary Programme

8.30– 9.30	Participant registration (separate counter)
9.30– 9.50	Welcome and introduction
9.50–11.30	Session 1: Principles, experiences and perspectives (five invited lectures)
11.30–11.50	Discussion
11.50–13.10	Session 2: Technical and scientific issues (five invited lectures)
13.10–13.30	Discussion
13.30–17.30	Free attendance to ConSoil sessions

Please note:

Registration for this Satellite Conference is separate and valid for Wednesday only. Delegates of the Satellite conference will have access to ConSoil on Wednesday too and will receive all ConSoil conference material.

If Italian delegates wish to attend ConSoil also on other days, please contact the conference desk.

POSTER DISPLAY & AWARDS

Poster session (Wednesday, 4 June, 16.00 – 17.30 hrs)

The posters will be displayed during the four conference days.

The ConSoil organization provides notes that can be stuck to the poster panels by:

- a delegate to inform the poster presenter at what time (s)he would like to meet the poster author near the poster,
- a poster presenter to announce at what time (s)he will be near the poster (additionally to the Poster Session; see below).

During the Poster Session, poster authors are expected to be near their posters. The Poster Session will be a Poster Social with drinks and snacks.

Poster awards: Three best posters of PhD students will be awarded. The awards will be presented during the Closing Session.

COMMERCIAL EXHIBITION

Parallel to the conference, a commercial exhibition is open to all delegates. Companies and RTD institutions will present their products and capabilities in managing soil contaminations. The exhibition is closely linked with the poster presentation. To ensure the highest possible interaction between the exhibitors and the participants, all coffee breaks are offered in this central area. The exhibition is situated on the ground floor of the conference venue.

Booth No.	Exhibitors	Country
1	A.S.T.C SAS/MEC^{X} LLC	Italy/USA
2	ECOTERA Ltd.	Kazakhstan
4	Fugro Consult GmbH	Germany/NL
5	FMC Corporation	USA
6	ENSR Italia S.r.l.	Italy
7	REGENESIS	UK
8	TerraTherm Inc.	USA
10	Cornelson Umwelt Technol. GmbH	Germany
11	Geovariances	France
19	US EPA – OSRTI/TIFSD	USA
20	Environ	Italy
24	SPINOFF S.r.l.	Italy
32	Solutions-IES	USA
33	ADVENTUS EUROPE	Austria
40	CH2M HILL	Italy
42	TESECO SpA	Italy
43	UFZ	Germany
44	Deltares	NL
45	Tauw	NL/Italy

A.S.T.C. SAS / MEC^{x} LLC — Booth no. 1

A.S.T.C. sas
Via Lazzaro Papi 22
20135 Milano
Italy
www.astc.it

MECX LLC
3203 Audley street
Houston, TX 77098
USA
www.mecx.net

In-Situ Chemical Oxidation – ISCO

In-Situ Chemical Oxidation (ISCO) processes are recognized as some of the most rapid and cost-effective family of innovative treatment technologies to remediate organic contaminants in groundwater and saturated soils.

Our ISCO process use innovative injection procedures and proprietary formulations of reagents, directly applied into the area of concern, using a controlled low-temperature and low-pressure approach. The reagents oxidize contaminated groundwater and saturated soil, producing no waste streams that require permitting, treatment, disposal or long-term operation and maintenance.

The principal advantage of the Chemical Oxidation Process over other in-situ treatments is the very rapid and complete destruction of organic contamination in groundwater and saturated soil.

Due to the generation of free radicals and superoxides that react with contaminants, our process is directed toward remediation of dissolved-phase and free-phase product. Laboratory analysis of post-treatment groundwater samples has not indicated the generation of harmful degradation by-products from the ISCO.

A customized, site-specific treatment design and dosage application is developed for each field-scale remediation project.

Our ISCO process has been determined to be applicable for the treatment of petroleum-based fuels, chlorinated and non-chlorinated solvents, organic pesticides, and other organic contaminants in groundwater and saturated soil.

Contact persons:

Dr. Ing. Alberto Piepoli
A.S.T.C. sas
Phone: +39 0254121213
Fax: +39 025512365
albertopiepoli@astc.it

P. E. Douglas D. Carvel
MECX LLC
Phone: +1 713 5857000
Fax: +1 713 5857049
doug.carvel@mecx.net

ECOTERA Ltd. — Booth no. 2

115 Jheltorksan st. Of 304
050000 Almaty
Kazakhstan

Fugro Consult GmbH — Booth no. 4

Hauptstr. 103
04416 Markkleeberg
Germany
www.fugro.de

Fugro Consult GmbH provides high quality environmental and geotechnical services to national and international clients. Main activities are focused on environmental consultancy, environmental and geotechnical data collection, geological and hydrological data management, in-situ-testing (MIP/ROST), environmental impact assessment, regional planning and infrastructure projects, design advice, civil engineering, groundwater investigation, groundwater modeling, raw material exploration and assessment of deposits, coastal engineering and protection. The company employs geologists, geographers, geophysicists, biologists, landscape architects, chemists and civil engineers.

FUGRO collects, processes, interprets and visualizes data for the comprehensive evaluation of soil, water, raw materials and engineering projects. These studies are the basis for providing reporting and consulting services to industrial & mining corporations as well as public & official organizations.

Fugro Consult GmbH is a member of the Fugro Group of Companies with approximately 10,600 staff in over 58 countries worldwide. Fugro Headquarters are in Leidschendam, the Netherlands.

Fugro Consult GmbH, located in Berlin and maintaining 6 regional offices throughout Germany, was established in 1997 as a merger of separate Fugro consulting firms and is looking back to over 40 years experience in geological, hydrological and natural resources engineering. The company employs 150 qualified staff.

Fugro Consult GmbH is certified according to ISO 9001 and ISO 14001 international quality and environmental management standards. The laboratory is accredited according to ISO 17025.

Fugro Consult GmbH is strongly committed to Fugro's international HSE policy. Key personnel of Fugro Consult GmbH is educated according to SCC.

Contact persons:

Dr. Michael Neuhaus, Director
FUGRO CONSULT GMBH, In-Situ Technologies
Ehlbeek 15A, 30938 Burgwedel, Germany
m.neuhaus@fugro.de

Dipl.-Geogr. Rainer Heitmann, Project manager
FUGRO CONSULT GMBH
In-Situ Technologies
Hauptstraße 103
04416 Markkleeberg
Germany
r.heitmann@fugro.de

Dipl.-Ing.Robert-Jan Stuut, Project manager
Fugro Ingenieursbureau BV
Kermisland 110, Postbus 5251
6802 EG Arnhem, The Netherlands
rj.stuut@fugro.nl

FMC Corporation — Booth no. 5

Menket
019103 St. Philadelphia
USA

www.klozur.com

ENSR Italia S.r.l. — Booth no. 6

Via F. Ferrucci, 17/a
20145 Milan
Italy

www.ensr.aecom.com

REGENESIS — Booth no. 7

Dr. Jeremy Birnstingl, Managing Director
REGENESIS Ltd.
jbirnstingl@regenesis.com

www.regenesis.com

Since incorporation in 1994, Regenesis has become an established world leader in the development and sale of innovative products to promote the cost-effective remediation of contaminated soil and groundwater.

Regenesis's patented controlled-release product lines – Oxygen Release Compounds (ORC®), Hydrogen Release Compounds (HRC®) and Metals Remediation Compound (MRC®), have revolutionized in-situ groundwater restoration by providing low-cost and effective alternatives to more expensive, traditional remediation technologies. This group of products can treat a wide range of aerobically and anaerobically degradable contaminants ranging from BTEX and MtBE to chlorinated ethenes and dissolved metals, and has pioneered an entirely new in-situ remediation product category. With the recent introduction of RegenOx™, Regenesis has made available a powerful, safe to handle and easy to apply chemical oxidation product for the effective treatment of both chlorinated solvents and non-chlorinated contaminants such as BTEX and petroleum hydrocarbons in both soils and groundwater. RegenOx provides the remedial power of Fenton's chemistry with the ease and safety of handling of other Regenesis products, and being alkaline, may be used in limestones, chalks and calcareous formations as effectively as in sands, gravels and other soils. The importance of this revolutionary product was recently recognized by its receiving the coveted Innovation Award at the 2006 International Clean-Up conference and trade fair in Birmingham, UK.

Regenesis products have been now used at more than 14,000 sites in over 24 countries worldwide, and have maintained their credibility as efficient, economical, and effective treatments for the removal of problematic groundwater contaminants.

Contact persons:

Dr. Jeremy Birnstingl
jbirnstingl@regenesis.com

Dr. Olivia Crowley
ocrowley@regenesis.com

Ir. Kris Maerten
kmaerten@regenesis.com

TerraTherm, Inc. — Booth no. 8

10 Stevens Road
Fitchburg, MA 01420
USA

www.terratherm.com

TerraTherm provides a range of thermal remediation technologies and services and is the exclusive, worldwide provider of the In Situ Thermal Desorption (ISTD) family of technologies. Our technologies and processes have been proven capable of remediating essentially all hazardous organic compounds in soil and groundwater to levels at or below regulatory cleanup standards. We do so without excavation, and typically in a year or less.

Contacts persons:

Gorm Heron
TerraTherm, Inc., 28900 Indian Point, Keene, CA 93531 USA
gheron@terratherm.com

Ralph Baker
TerraTherm, Inc., 10 Stevens Road, Fitchburg, MA 01420 USA
rbaker@terratherm.com

Cornelson Umwelt Technologie GmbH — Booth no. 10

Graf-Beust-Allee 33
45141 Essen
Germany

www.cornelsen-umwelt.de

Geovariances — Booth no. 11

49b Au Franklin Roosevelt
BP 91
77210 Avon cedex
France

www.geovariances.com

US EPA – OSRTI/TIFSD — Booth no. 19

1200 Pennsylvania Ave.
(5203P), Washington, DC 20460
USA
www.epa.gov

Contact persons:
office site: Cheryl Johnson, johnson.cheryl@epa.gov.
on site (attending conference): Carlos Pachon

ENVIRON — Booth no. 20

ENVIRON Italy S.r.l.
Via Larga, 6
20122 Milano
Italy
www.environcorp.com

As international consultancy, ENVIRON works with clients to assess and manage potential environmental, sustainability and health issues associated with their activities and products, both locally and globally. Whether responding to existing challenges, implementing measures to prevent future liabilities, or seeking sustainability strategies, clients around the world benefit from our blend of universally high technical engineering and scientific skills and knowledge of local requirements and practices. Throughout our expanding global network, we maintain a tradition of direct involvement of senior-level engineers and scientists in both client relationships and project leadership. Our ever-present goal is to ensure that the best available science, technology and analysis are used to guide business decisions related to protection of human health and the environment.

The entrepreneurial spark that defined ENVIRON's beginnings remains evident in each innovative, forward-thinking solution we deliver. Advances in science and technology and evolving regulatory, legal and social pressures create increasingly complex challenges for businesses. We evolve to keep pace with these changes – by adding new services, contributing to scientific advances, or expanding geographically – all with an eye to supporting our clients' changing needs. Today, clients rely on us for a variety of services ranging from site investigation and remediation associated with land and water pollution to emerging issues as diverse as:

- enhancement of the environment's natural processes to mitigate pollution
- application of sustainable thinking to site remediation
- developing and deploying low and clean energy technologies
- designing innovative waste and wastewater management systems
- applying eco-design techniques to reduce recycling costs.

Contact persons:
Dott.ssa Giorgia Apollo
gapollo@environcorp.com
Ing. Antonino Rapisardi
arapisardi@environcorp.com

SPINOFF S.r.l. — Booth no. 24

Via Beato Pellegrino
35137 Padova
Italy
www.spinoffsrl.com

SOLUTIONS-IES — Booth no. 32

1101 Nowell Road
27607 Raleigh, NC
USA
www.eosremediation.com

Solutions-IES is a woman-owned, 8(a)-certified, North Carolina licensed environmental engineering (NC Reg. No. C-1849) and geology (Reg. No. C-287) company, with extensive experience in environmental consulting and engineering services, as well as research and patenting of microemulsions for bioremediation. Solutions-IES is headquartered in Raleigh, North Carolina, but provides technical expertise internationally. Our staff consists of experts with backgrounds in private industry, consulting and environmental regulation, which provides us with an extensive knowledge base to offer diverse engineering and consulting support.

Solutions-IES focuses on traditional environmental services and innovative, cost-effective remediation technology research, development and implementation. Our manufacturing, government and consulting firm clients benefit from our responsiveness, attention to detail and knowledge of cost-effective, innovative remedial technologies. Our research and development efforts are aided by our knowledge of what is truly applicable and feasible given regulatory, economic and environmental constraints.

ADVENTUS EUROPE — Booth no. 33

Franz-Plattner Str. 28F
6170 Zirl, Tirol, Austria
Info@AdventusGroup.com
www.ADVENTUS.eu

Our expertise is in solving your business challenges surrounding impacted soil, sediment, and groundwater environments. Adventus Group provides a portfolio of field-proven, patented and cost-efficient remediation technologies. We support environmental consultants, engineers, site owners, research bodies, and regulators.

Our service oriented professionals are committed to saving you time and money managing complex, challenging environmental liabilities. Technically superior remedial solutions proven on a range of contaminants by accelerating their natural attenuation.

Compounds treated at field-scale around the world include: Chlorinated Solvents, Chlorinated Pesticides & Herbicides, Organic Explosives, Heavy Metals, and Petroleum Hydrocarbons.

Soils:

1. DARAMEND® for in-situ and ex-situ treatment of recalcitrant organic compounds. Offering the industry's only genuine "performance guarantee", having successfully treated over 3,500,000 tons of hazardous soil (beyond simple BTEX compounds).
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2. EHC-O™ oxygen releasing compound for in-situ hydrocarbon treatment, providing a long-term source of dissolved oxygen, nutrients and pH buffers.
3. Circulation Well systems for in-situ treatment of VOCs.
4. PRB technology using ZVI for remediation of chlorinated solvents. Inventors of the "iron wall" patents.

Sediments:

1. AquaBlok® for in-situ sub-aqueous capping and treatment of impacted sediments. Used in ponds, lagoons, ports, and rivers impacted by chlorinated hydrocarbons, pesticides, PCBs and heavy metals.

Since 2003, ADVENTUS has successfully deployed field installations on 5 continents.

Contact person:

Michael Mueller
VP Business Development / Marketing

CH2M HILL — Booth no. 40

Via XXV Aprile 2
20097 San Donato M.Se.(MI)
Italy

www.ch2m.com

TESECO SpA — Booth no. 42

Via C.L. Ragghianti 12
56121 Pisa
Italy

www.teseco.it

Helmholtz Centre for Environmental Research – UFZ — Booth no. 43

Permoserstr. 15
04318 Leipzig
Germany
info@ufz.de

www.ufz.de

Research for the Environment

At the Helmholtz Centre for Environmental Research – UFZ scientists research the causes and consequences of far-reaching environmental changes. Their task is to deliver knowledge, instruments and policies concerning the complex systems and relationships in the environment within a limited timeframe for use by politicians, industry and society, in order to help them to make decisions and solve specific environmental problems. Apart from the practical needs, environmental research must also meet general scientific needs. This is a two-fold challenge with the requirement that today's environmental research dominated by natural sciences is increasingly interlinked with human and social sciences as well as environmental law. It must be directed by environmental problems and must learn to deal with complexity and uncertainty and with their practical implications. This requires the sharing of knowledge, understanding and agreement, the pooling of different skills and specialisations, the involvement of decision-makers and stakeholders from industry, politics and the public – in short, integration at the highest possible level.

This is a challenge met by the approximately 900 staff of the Helmholtz Centre for Environmental Research – UFZ, which is financed by the Federal Republic of Germany and the states of Saxony and Saxony Anhalt. Their aim is to identify sustainable ways of using environmental resources to safeguard the basic requirements of life for future generations.

Contact persons:

Dr. Detlef Lazik, Dr. Ulf Roland, Dr. Hermann Rügner, Martin Bittens, Andreas Staak, Susan Walter

Deltares — Booth no. 44

Princetonlaan 6
P.O. Box 85467
3508 AL Utrecht
The Netherlands
info@deltares.nl

www.deltares.nl

As from 1st January, 2008, the Subsurface and Groundwater Unit of TNO, Delft Hydraulics, GeoDelft and parts of Rijkswaterstaat join forces in a new independent institute for delta technology, Deltares. Core research and consultancy activities of the Unit Subsurface and Groundwater systems are:

- Land management and soil remediation
- Soil stability and land subsidence

- Sedimentation and erosion studies
- Development and application of in situ soil (bio)remediation technologies
- Conducting soil remediaton from start to finish such as: molecular detection, batch tests, column tests, tracer experiments etc.
- Performing site- and region specific risk assessments
- Development and implementation of molecular methods for detecting microorganisms for soil remediaton
- Aquifer thermal energy storage
- Contaminated groundwater from urban and industrial areas and remediation
- Large scale management of contaminated sites.

Contact person:

Koos J.L. Clavel

TAUW Booth no. 45

Tauw Italia Srl
Piazza Leonardo da Vinci 7
20133 Milan
Italy
info@ecoappraisal.it
www.ecoappraisal.it, www.tauw.com
Tauw bv
Handelskade 11, Postbus 133
7400 AC Deventer
The Netherlands
www.tauw.nl

Tauw: creating sustainable solutions for a better environment

Tauw is an independent consulting and engineering company with 80 years of specialized experience in the design, improvement and management of the natural environment, built-up environment and infrastructure. Tauw is a leading company in the field of environmental consultancy, spatial development, civil engineering and the monitoring of environmental quality.

Dedication

Dedicated consultants and engineers represent the core of Tauw. Being independent, open and innovative they work in multidisciplinary teams on projects for a broad range of clients: public authorities, private companies and non-governmental organizations. All projects have in common that they contribute to a more attractive, cleaner and sustainable environment. Tauw commits to solutions that contribute to this end.

Good understanding

Tauw focuses all its attention on the client's needs. This requires a good understanding of the client's expectations. State-of-the-art expertise on content and understanding of the local context are the pillars of Tauw's consultancy. In order to achieve this Tauw works in a European network of twenty-six regional offices in six European countries.

Soil remediation

Tauw keeps a long track record in soil investigation, risk assessment, remediation planning, design and soil quality management. Tauw's scope of soil related services is wide: from a first soil investigation to policy studies for the EU. Based on risk assessments, environmental merit and cost Tauw advises clients on the optimum combination of soil quality management and remediation technologies. Tauw has extensive experience in site specific risk assessment and (in-situ) remediation technologies.

Contact persons:

Mr. Andrea Panero and Mr. Laurent Bakker

TECHNICAL TOURS

Thursday afternoon:

Five interesting technical tours to projects/sites in the Milano region are planned. You will get back in time to join the conference dinner (latest 6 pm, conference dinner starts at 8 pm; we will drop you nearby a metro station).

- 5 x half day tours, 12.30 – approx. 17.00 h
- in conference fee included (also for accompanying persons)
- limited number of participants (50 / tour; minimum number of participants for one tour to take place: 25)
- registration at conference desk if capacities available
- lunch served for technical tours' participants only
- departure at Fiera.

Excursion 1
THE FORMER AREA FALCK

V.le Italia 348 - SESTO SAN GIOVANNI – MI

Sito interesse Nazionale Sesto San Giovanni

These areas, consisting of several units, are located mainly along viale Italia in Sesto San Giovanni, and cover a total surface of 1,500,000 sq meters.

These areas were occupied by the former Falck steelworks

The contaminants, Arsenic, Lead, Cadmium, Chromo, Chromo VI, Copper, Zinc, Nichel, Hydrcarbons, IPA, Benzene, Toluene, Xileni, PCB, are present in a large amount mainly in slag and also as a mixture of soil and slag.

The remediation procedure consists in on-site treatment by excavation, separation and soil flushing.

The urban planning, commissioned to Renzo Piano, led to the creation of an ambitious plan.

Excursion 2
NEW FAIR COMPLEX – Rho Pero

New Fair complex develops on 2 million sq m. area, mostly occupied by a large oil refinery. The site was one of the most polluted areas of the Milan northwest. The soil and ground water were contaminated by hydrocarbons (from light to heavy fractions), COCs (Benzene, toluene, IsoPropilBenzene).

Site remediation was started on February 2001 and was completed in June 2003, while the first pavilions were being erected.

The remediation technologies used in the Rho – Pero area were tested to check their suitability to the site and to measure their effectiveness in treating the contamination substances.

The results of on-site laboratory tests demonstrated that the biological technologies were the most effective.

To allow the construction works of the New Milan Fair complex, the remediation project had to be accelerated.

It was required the planning and the execution of additional activities to the original ones, i.e. the digging of large trenches and use of non biological thermal desorption technologies to allow faster treatment of the terrain.

The remediation technologies:

Biological techniques: Soil Vapor Extraction, Bioventing, Biosparging, Draining trenches

Non-Biological techniques: Thermal desorption.

The remediation facts:

- 4.5 million cubic metres of subsoil treated
- 30 km of piping to connect the remediation systems
- 1,000 sampling wells drilled
- 50,000 chemical analysis made of the terrain
- 3,500 soil samples taken and analysed
- 30 million cubic metres of water treated
- 300,000 cubic metres of inert material demolished.

Excursion 3
TECHNICAL TOUR TO A CHLORINATED-SOLVENT CONTAMINATED SITE

The site is located in a industrial area within the Province of Milan. A former chemical facility, mainly involved in the production of synthetic dyes, was the most likely cause of a chlorinated solvent (1,1,2,2-tetrachloroethane and trichloroethene) plume which extends over a very large area. The plume possibly originated from the leakage of a "storage basin" where exhausted chlorinated solvents were discharged during at least 50 years of industrial activity.

During the visit, the remedial activities currently in progress at the site and managed in cooperation between local administration (Comune di Rho, Provincia di Milano, Regione Lombardia) and accademic institutions (University of Rome "La Sapienza", University of Milano) will be illustrated to the participants. These include an in-situ bioremediation research pilot plant designed for the treatment of the source zone containing residual chlorinated solvent DNAPL pools, and a downgradient full-scale hydraulic barrier coupled to a P&T system. Advanced groundwater monitoring facilities, already installed at the site (e.g., multilevel sampling systems for determination of vertical stratification of groundwater contamination) will also be illustrated. In the last two years the site has been already used as reference site in the framework of the bilateral Trans-IT project (Germany and Italy) for field demonstrations of advanced characterization technologies and will be one of the reference sites in the forthcoming ModelPROBE project (FP7).

Location: very close to the Stella Polare Conference Center (around 20 min by bus).

Excursion 4

RODANO AND PIOLTELLO CHEMICAL POLE SITE OF NATIONAL INTEREST – SISAS AREA

1. Site identification

The Pioltello and Rodano chemical pole is located in the western suburbs of Milan (8 km far), very close to Milan Linate airport, near to the Milan-Venice railway.

The site – area of national interest – includes several production plants, some of which still operating, besides SISAS area (under bankruptcy), by the time disused.

2. Brief industrial history

SISAS – Società Italiana Serie Acetica Sintetica – was established in Milan on February 28, 1947; at the beginning, 15 workers were employed in the plants, situated on a 300,000 m^2 area in Pioltello-Rodano countryside. The first plant was devoted to acetylene chemicals, production of which was carried out through methane cracking.

SISAS reached the national leadership in acetylene production and subsequently started distribution of solvents, alcohols and acids.

From the eighties acetylene production was abandoned, whilst synthesis of other chemical products continued.

In 2001, the Company went bankrupt; still today, SISAS S.p.A. under bankruptcy is under receivership.

3. Landfills A, B and C

Acetylene synthesis, carried out in SISAS until the eighties, brought with it the unavoidable production of carbon black; due to the poor ecological awareness at that time, it was deposited on site, without particular care to environment.

Within SISAS area two uncontrolled landfills have grown (landfill A and landfill B), made by carbon black subsequent deposits, practically out of the soil.

Landfill C – the third one – collects other waste, also hazardous, coming from actual productions, but without containing carbon black.

At present the landfill bodies are covered by vegetation (meadow, shrub, trees).

4. Reclamation: criteria and quantities

The approved reclamation project foresees the removal of the landfills actually on site (landfills A, B and C), in order to eliminate the primary pollution source of the site environmental matrixes. The total estimated volume of the three landfills is about 330,000 m^3.

Prior to site operations, it is foreseen a characterization campaign of the waste matrixes, to be carried out punctually and in a widespread way on all the landfills; on the basis of the characterization results, some of the materials could be placed on site, into a landfill body built to this purpose (non hazardous fractions), also after a pre-treatment. On the other hand, part could be conveyed to external disposal/recovery, in authorized plants.

On site it will be possible to carry out pre-treatments and/or conditionings, necessary to appropriate waste shipment and/or preparation, besides the possible improvement of the carbon black specific characteristics, in compliance with the identified final destination needs.

Collateral – but not secondary – aspect of all the intervention is demolition of the industrial plant engineering and of the buildings (subject to asbestos reclamation); soil remediation and area total reclamation for the urban requalification will follow.

It's a long-term intervention, which foresees the involvement of many professionals, operating in different fields but coordinated in order to reach the specific target: area recovery and requalification.

Excursion 5

VISIT TO PIRELLI

Pirelli Group invests the maximum possible care in environmental issues when making choices, even in the adoption of specific technologies and manufacturing methods, where is technically feasible and economically viable, that allow for the reduction of environmental impact of their operations.

Through the implementation of measures to apply the principles mentioned above, Pirelli Group is achieving and reporting appreciable results in the following fields:

- Mitigation of the environmental impact resulting from the company's own activities, product and services,
- Rational use of natural resources and energy
- Promotion of a "culture of prevention" with regard to pollution,
- Conservation, development and appreciation of the territory.

All this has been achieved despite the extremely wide and varied range of business areas that the Group's companies operate in (manufacture of tyres, activities in photonic sector, the real estate sector, environmental decontamination, waste to energy generation, development of alternative eco-compatible technologies), in the sector in which it operates, each invests the maximum possible care in responsible management of environmental aspects of activities, products and services, and of the environmental impacts associated with them.

In the redevelopment of the Pirelli Group's historical industrial site in the Bicocca area (approximately 650,000 square meters) we can find all the environmental aspects in the real estate sector. In this area, located in the border zone of Milano and Sesto S.Giovanni, were located from early 1900s the Pirelli industrial production plant of tyre, cables and other products.

In the 1980s the redevelopment process start with the industrial plants dismissions, in 1985 an inter-

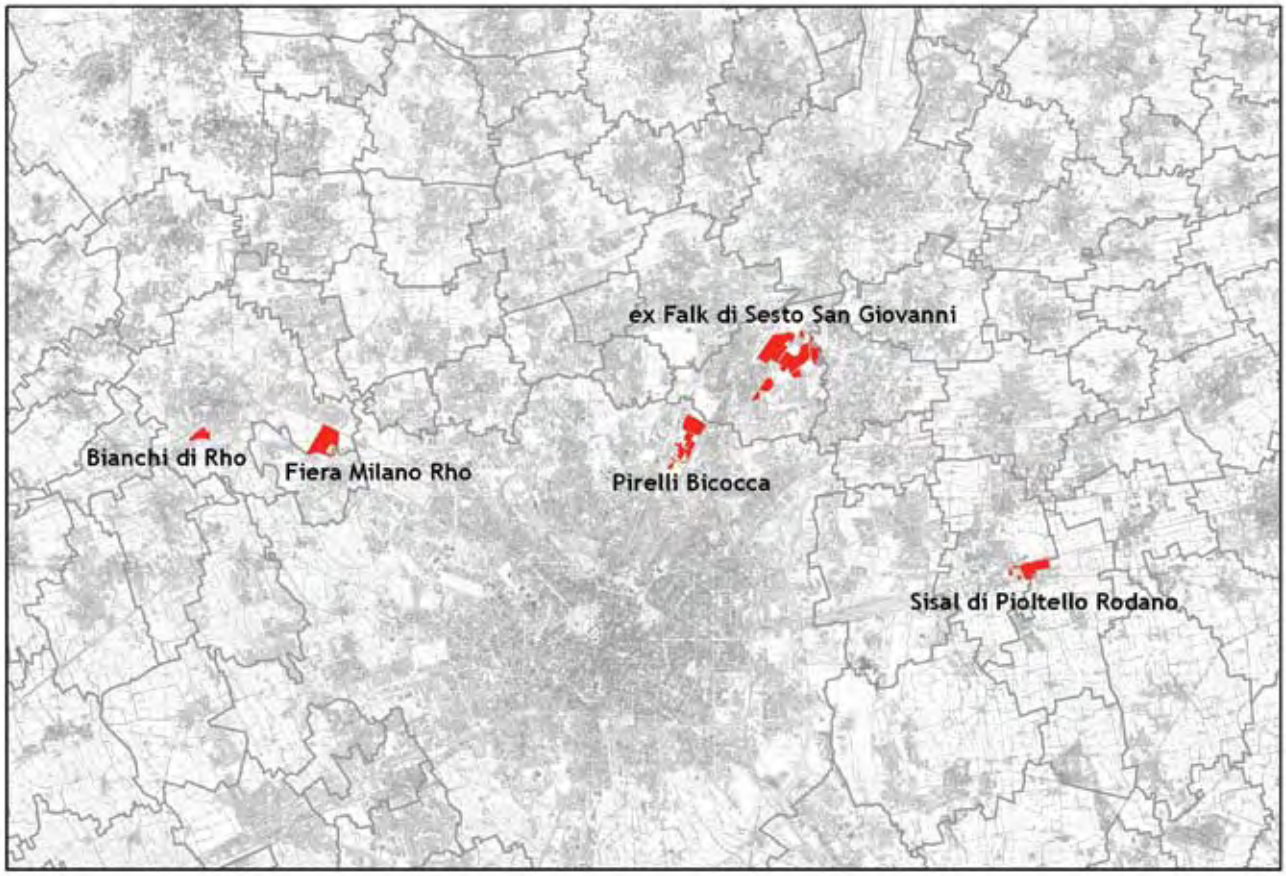
national project competition was launched for the re-use of this area, Arch. Gregotti won this competition.

It is one of the larger organic interventions of urban reconstruction ever carried out in Europe in the last thirty years and the most strategic in Italy.

The industrial area was subject to a complete redevelopment process with new functional areas beginning with the special functions of public and private Research Centre and of university education.

With the aim to allow the complete functional re-use of the area, Pirelli carried out all the engineering and field activities included the environmental remediation of all the area.

The visit consists of a guided tour in Bicocca area and a meeting in the Pirelli Head Quarter Auditorium illustrative of all the environmental aspects.

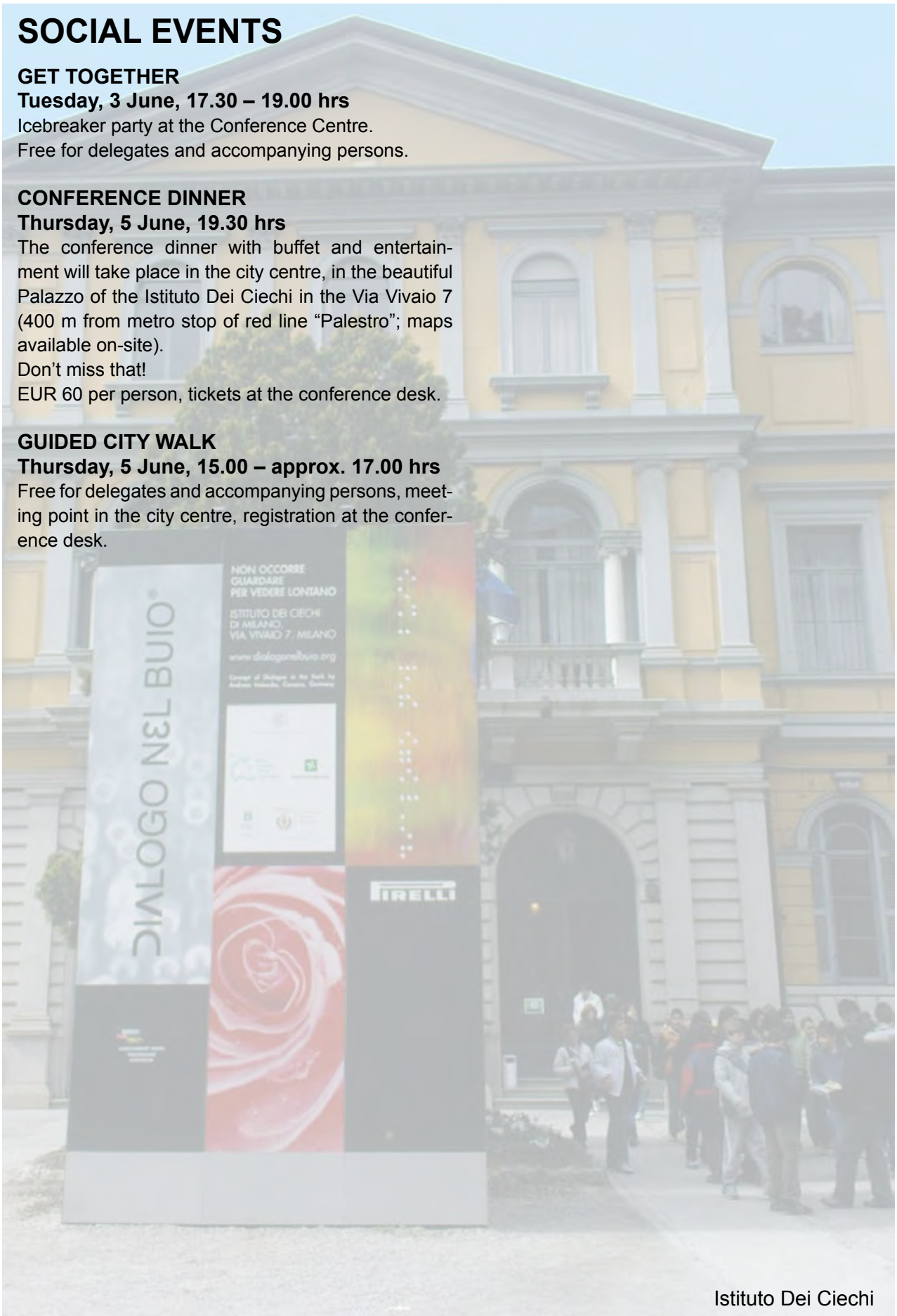


SOCIAL EVENTS

GET TOGETHER
Tuesday, 3 June, 17.30 – 19.00 hrs
Icebreaker party at the Conference Centre.
Free for delegates and accompanying persons.

CONFERENCE DINNER
Thursday, 5 June, 19.30 hrs
The conference dinner with buffet and entertainment will take place in the city centre, in the beautiful Palazzo of the Istituto Dei Ciechi in the Via Vivaio 7 (400 m from metro stop of red line “Palestro”; maps available on-site).
Don’t miss that!
EUR 60 per person, tickets at the conference desk.

GUIDED CITY WALK
Thursday, 5 June, 15.00 – approx. 17.00 hrs
Free for delegates and accompanying persons, meeting point in the city centre, registration at the conference desk.



Istituto Dei Ciechi

GENERAL INFORMATION

Registration and conference desk

The desks are located at the groundfloor of the conference site.

Opening hours:

Tuesday,	3 June:	8.00 – 18.00 hrs.
Wednesday,	4 June:	8.00 – 18.00 hrs.
Thursday,	5 June:	8.00 – 13.00 hrs.
Friday,	6 June:	8.00 – 17.30 hrs.

Language

English is the official conference language.

Name badges

Delegates are asked to wear the name badges at all time while at the conference site. If you lose your badge, a new one can be purchased against proof of your original registration at the conference desk (cost EUR 4).

Cloakroom

A cloakroom will be open throughout the conference. It will be possible to store luggage in this area.

Lost and found

For lost and found personal belongings, please contact the conference desk.

Breaks and meals

Coffee/tea is served during the morning and afternoon breaks at catering points located in the groundfloor in the poster and exhibition area. Lunch is also served on Tuesday, Wednesday and Friday in the poster and exhibition area.

During sessions, a bar is open where you may buy refreshments.

Transportation in Milan

Please take the underground red line (metro, number 1) to get from the city to Rho-Fiera Milano and back. It takes approx. 30 min from the city centre to get to the Fiera.

Please note: A 4 day ticket for public transport is inclusive, you get it together with your name badge at the conference desk upon your registration.

Time Zone

The time zone in Milan is GMT.

Opening hours

The regular opening hours in Milan (without guarantee):

On Mondays 5:00 p.m. to 7:30 p.m., Monday morning many shops may be closed.
Tuesday to Saturday: 09:00 a.m. to 7:30 p.m. Some shops make a lunch time from 1:00 to 3:30 p.m.
On Sundays the shops are normally closed.

Some shops in the Milan city centre are longer open and partly also on Sundays.

Tourist information

The central tourist office IAT (Informazioni e Assistenza Turistica) is at Piazza Duomo 19/A, close to the Carlo Erba Pharmacy. It's currently open Mon-Sat 8:45 am–1 pm and 2–6 pm, Sun and on holidays 9 am–1 pm and 2–5 pm.

Tel. +39 02 77404343,
subway: Duomo (line 1 red and 3 yellow).

At the Central Railway Station the tourist office (first floor, near the 'Gran Bar') is open Mon-Sat 9 am–6 pm, Sun and on holidays 9 am–5 pm.

Tel. +39 02 72524360,
subway: Centrale FS (line 2 green and 3 yellow).