The Nordic countries hereby invite you to NORDROCS 2018, the 7th joint Nordic Meeting on Remediation of Contaminated Sites to be held in Helsingøer, a part of greater Copenhagen, Denmark on September 3-6, 2018.


OBJECTIVE
The objective of the NORDROCS conferences is to address issues on assessment and risk management of contaminated land and sediments in the context of Nordic conditions. The meeting intends to provide a forum for the exchange of information gathered through research and project experience. Target groups include scientists, regulators, consultants, contractors and other professionals working with contaminated sites and sediments in Nordic countries, countries in Northern Europe and around the Baltic Sea.

Photo: Thomas Rahbek
KEYNOTE AND INVITED SPEAKERS

Poul L. Bjerg  
Professor, DTU Environment, Technical University of Denmark

Katrine Borgå  
Professor, Section for Aquatic Biology and Toxicology, University of Oslo

Mette M. Broholm  
Associate Professor, DTU Environment, Technical University of Denmark

John Frederick Devlin  
Professor, Geology Dept., University of Kansas, USA

Upal Ghosh  
Professor, University of Maryland Baltimore County, USA

Bodil Liedberg Jönsson  
Ph.D., Strategic Development Director, Oskarshamn Municipality

Kristina Lindström  
Professor, University of Helsinki

Paul Nathanail  
Professor, University of Nottingham, UK

Martin Romantschuk  
Professor, University of Helsinki

Invited speakers from EPA in Sweden, Norway, Finland and Denmark.

REVIEW COMMITTEE

Paul S. Cappelen  
M.Sc., Norwegian Geotechnical Institute, Norway

Mette Christophersen  
Head of Dept., Ph.D., Ramboll, Denmark

Annika Fjordboege  
Ph.D., Researcher, DTU Environment, Denmark

Patrick van Hees  
Associate Professor (Örebro Univ.) Eurofins Sweden

Morten Jartun  
Ph.D., Norwegian Institute for Water Research, Norway

Anne Krüger  
Environmental Scientist, City of Vesterås

Marja Tuomela  
Ph.D., Co-op Bionautical and University of Helsinki

Kim Yrjälä  
Associate Professor, University of Helsinki

ORGANIZING COMMITTEE

Arne Rokkjær  
M.Sc., The Capital Region of Denmark, Denmark/ATV Soil and Groundwater – chairman

Paul S. Cappelen  
M.Sc, Norwegian Geotechnical Institute, Norway/ Miljøringen

Peter Harms-Ringdal  
M.Sc., Environmental Consultant, EnviFix, Sweden/Renare Mark

Jarno Laitinen  
M.Sc. (tech.), M.Sc.(econ), Project Manager, Pirkanmaa ELY-Centre, Finland/MUTKU

ASSISTING ORGANIZING COMMITTEE

Mette M. Broholm  
Associate Professor, DTU Environment (ATV Soil and Groundwater)

Morten Jartun  
Ph.D., Norwegian Institute for Water Research (Miljøringen)

Ulrika Larson  
Consultant, Empirikon (Renare Mark)

Lisbeth Verner  
Head of Secretariat, ATV Soil and Groundwater
SOCIAL PROGRAM
An informal get together in the evening on September 3 will be arranged. More information will follow on the conference webpage.

The conference dinner will take place in the evening on September 4. More information will follow on the conference webpage.

SHORT COURSES
On September 3 short courses are availabl. Please see individual program on the conference webpage.

EXCURSION
You are invited to join our excursions in the capital area on September 6. Please see individual program on the conference webpage.

REGISTRATION AND FEES
The “Early Bird” conference fee is DKK 5.600 (~ € 750) if you register before May 15 2018.

After May 15, 2018 the fee will be DKK 6.300 (~ € 850).

SPONSORSHIPS AND/OR EXHIBITION
Sponsorships are most welcome – min. DKK 10.000 (~ € 1.350). Sponsor logos will be presented on the web page, on the calls for abstracts, on the main screens during breaks and printed in the conference program/compendium.

For companies interested in presenting their activities at NORDROCS 2018 an exhibition area has been reserved. This area is also used for coffee breaks etc. and provides the exhibitors with an excellent opportunity to present their activities, products and/or other news to the delegates. An exhibition stand is available at DKK 6.000 (~ € 800) for two days and requires 1 registered and paying participant per stand.

Package deal, which include sponsorship, exhibition stand and participation fee (one person), will be available at DKK 19.000 (~ €2.550).

Please contact conference secretariat at Resia, conference@resia.se, att. Ulrica Edström

Alterations may occur
Monday, September 3

11.00 - 16.00  **Short Course 1 – PFAS – meeting room B-24**
Dynamic investigations with mobile lab at PFAS-impacted sites
please see separate program in the compendium

13.00 - 16.00  **Short Course 2 – Geostatistics – meeting room B-21**
An overview of Geostatistics for contaminated site characterization
please see separate program in the compendium

18.00 - 18.30  Transportation to Welcome Reception by bus or walk
18.30  Welcome reception at Kulturværftet, Helsingør incl. a light serving and drinks
Entertainment: Sct. Olai Vocal Ensemble

Tuesday, September 4

09.00 - 09.50  Registration and coffee/tea buffet

10.00 - 11.30  **Opening Session / Welcome**
Lecture hall Jorns

*Ida Holm Olesen, Chairman, ATV Soil and Groundwater*
*Arne Rokkjær, Coordinator of the NORDROCS 2018 Organizing Committee*

**Key note presentation**
Risk assessment of contaminated sites to water resources:
The role of the contaminant mass discharge approach?
*Professor Poul L. Bjerg, DTU Environment, Denmark*

**Key note presentation**
Sustainable remediation in practice
*Professor Paul Nathanail, University of Nottingham, UK*

11.50 - 12.50  **Session A – lecture hall Øresund**
**EPA from the 4 Nordic countries**
**Risk management - regulatory perspectives**
Risk assessment/risk management - leaning towards the more regulatory requirements with regard to Risk assessment and the regulatory challenges in risk - based decision making.

*Chair: Tom Heron, Senior Vice President, Environment, Energy, Water and Informatics, NIRAS Denmark*

**Senior Advisor Kine Martinsen, Norwegian Environment Agency**
**Technical Advisor Preben Bruun, Danish EPA**
**Senior Advisor Jussi Reinkainen, Finnish Environment Institute**
**Senior Scientific Officer Magdalena Gleisner, Swedish EPA**

**Session B – lecture hall Jorns**
**Remediation – of Soil and Groundwater Part I (B)**

*Chair: Marja Tuomela, Ph.D., Co-op Bionautical and University of Helsinki, Finland*

Environmental forensics. Searching for a major unknown PCE source in an industrial area using different tools, Birkerød, Denmark
*M.Sc., Ph.D. Thomas Hauerberg Larsen, Orbicon, Denmark*

Development of an iron-based soil mixing remediation method for energyefficient treatment of chlorinated solvents
*Ph.D. Per Lindh, Swedish Geotechnical Institut, Sweden*

Da Nang – an outstanding thermal remedy 5 years later
*Sales and Product Manager Niels Ploug, Krüger, Denmark*
12.50 – 13.40  Lunch, poster session and exhibition, matchmaking.
Matchmaking arranged by Danish Soil Partnership and Innovation Network for Environmental Technologies

13.40 – 14.10  Poster session, exhibition and matchmaking.
Matchmaking arranged by Danish Soil Partnership and Innovation Network for Environmental Technologies

14.10 – 15.30  **Session C – lecture hall Øresund**

**Sustainability and Reuse - Part I**

Chair: Jarno Laitinen, M.Sc., Project Manager, Pirkanmaa ELY-Centre, Finland

**Key note presentation:** A sustainability perspective on reuse and remediation
Professor Kristina Lindström, University of Helsinki, Finland

Reuse of concrete and risk assessments related to the expansion of Oslo Airport Gardermoen
Project Manager Ida Kristine Buraas, Golder, Norway

Efficient soil reuse – imperative for sustainable land management
Senior Advisor Jussi Reinikainen, Finnish Environment Institute, Finland

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15.30 – 16.20  Poster session and exhibition, matchmaking, coffee/tea break
Matchmaking arranged by Danish Soil Partnership and Innovation Network for Environmental Technologies

16.20 - 17.40  **Session E – lecture hall Øresund**

**Sustainability and Reuse - Part II**

Chair: Environmental expert Aura Nousiainen, Pöyry, Finland

Sustainable remediation assessment: How to include the societal cost in the equation?
Managing Director Jan Haemers, Haemers Technologies, Belgium

Strategic approach to climate protection and soil management to fulfill the Sustainable Development Goals (SDG 11, 12 and 13)
Joan Krogh, NIRAS, Denmark

Remediation of PCB-polluted soil using biochar: the uptake of PCBs in earthworms, plants and passive samplers – a pot experiment
Sigurbjörg Hjartardóttir, NGI, Norway

Sustainable and digital management in large infrastructure projects of acid producing rock and soil containing naturally high levels of heavy metals
M.Sc., Env.consultant Lars-André Erstad and Project Manager, Env.consultant Eva Aakre, Rambøll-Sweco ANS, Norway

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19.00 – 19.30  Welcome drink and Polka Tesch – entertainment/music

19.30 -  Conference dinner and dance. The Man – dance band
**Wednesday, September 5**

**8.30 – 09.50**

**Session G – lecture hall Øresund**

**Contaminated Sediments – Risk Assessment and Remediation - Part I**

*Chair: M.Sc. Paul Cappelen, Geotechnical Institute, Norway*

**Key note presentation:** In-situ remediation of contaminated sediments: Combining strong sorption with microbial dechlorination

*Professor Upal Ghosh, University of Maryland Baltimore County, USA*

The Norwegian Management System of Risk Assessment - Contaminated Sediments

*M.Sc., Senior Adviser Hilde B. Keilen, Norwegian Environmental Agency, Norway*

Dispersal pathways of contaminants from organic-rich sediments – a field study of fibrous sediments in northern Sweden

*Dr. Sarah Josefsson, SGU, Sweden*

**Session H – lecture hall Jorns**

**Investigation and monitoring of Soil and Groundwater - Part I**

*Chair: Associate Professor Mette Broholm, DTU Environment, Technical University of Denmark*

**Key note presentation:** How groundwater velocity measurements can strongly support aquifer characterisation studies

*Professor John Frederick Devlin, University of Kansas, USA*

**Session I – lecture hall Øresund**

**Contaminated Sediments – Risk Assessment and Remediation - Part II**

*Chair: M.Sc., Environmental Consultant Peter Harms-Ringdahl, EnviFix, Sweden*

TREASURE: Novel and innovative methods used to characterize two of Sweden’s contaminated fiberbank sediment sites

*Professor Ian Snowball, Uppsala University, Sweden*

Remediation of Oskarshamn hamn: challenges and lessons learned from contractor point of view

*Regional Manager Bart van Renterghem, Envisan, Belgium*

Quantification of microplastics in sediments from benthic and coastal environments

*M.Sc. Heidi Knutsen, NGI, Norway*

Nontarget analysis of sediment samples from Copenhagen, Denmark

*Ph.D.-student Josephine Lübeck, University of Copenhagen, Denmark*

**Session J – lecture hall Jorns**

**Investigation and monitoring of Soil and Groundwater - Part II**

*Chair: Associate Professor Patrick van Hees, Eurofins, Sweden*

High Resolution Site Characterization and 3D Geological Modelling – Tools for Interpretation of Plume Migration in a Complex Geology

*M.Sc. Bo Tegner Bay, COWI, Denmark*

Development of an innovative methodology for monitoring of in situ remediation of chlorinated solvents – the MIRACLH-project

*Ph.D. Haakan Rosqvist, Lund University and Tyréns, Sweden*

Use of geostatistical modelling in investigation of soil contamination - working toward a better definition of remedial mass and volume

*R&D Manager, Ph.D. Per Loll, DMR, Denmark*

Do we as practitioners have a general challenge with leaking wells causing cross-contamination to deeper aquifers? Swedish and Danish results and paths forward

*Project Manager Maria Heisterberg Hansen, NIRAS, Denmark, and Environmental Consultant Filip Nilsson, NIRAS, Sweden*

**9.50 – 10.20**

Coffee/tea break

**10.20 - 11.40**

**Session I – lecture hall Øresund**

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**11.40 - 12.40**

Lunch, poster session and exhibition

**12.40 – 13.10**

Poster session and exhibition
Session K – lecture hall Øresund

Management

Chair: Environmental Scientist Anna Kruger, City of Västerås, Sweden

Key note presentation: Strategic decisions, while planning and implementing the challenging remediation project in the heavily polluted harbor in Oskarshamn, Sweden – the municipal perspective

Bodil Liedberg Jönsson, Strategic Development Manager, Municipality of Oskarshamn, Sweden

Stakeholder engagement in strategic research agendas related to soil and land use management

Ph.D. Yvonne Ohlsson, Swedish Geotechnical Institute, Sweden

The Finnish Clean Soil Program. A national state-funded program to investigate and remediate sustainably the significant risks to human health and the environment due to land contamination

M.Sc., Project Manager Jarno Laitinen, Centre for Economic Development-, Transport and the Environment, Finland

Session L – lecture hall Jorns

Surface Water - Interaction from Soil, Sediment and Groundwater

Chair: Research Manager Marianne Olsen, Norwegian Institute for Water Research, Norway

Key note presentation: Contaminant response in a multistress environment

Professor Katrine Borgå, University of Oslo, Norway

Bodo Airport – The story of PFAS’ way from soil, through storm water to biota

Head of Section Marianne Kvinnås, NGI, Norway

Using temperature to assess interaction between contaminated groundwater and surface water

Ph.D., Hydrogeologist Gro Lilbaek, NIRAS, Denmark

Session M – lecture hall Øresund

Indoor Air

Chair: R&D Manager Per Loll, DMR, Denmark

A detection dog, man’s best friend during indoor air investigations

Mette Algreen, Projectleader, Ph.D., Orbicon, Denmark

Vapor Intrusion Gas Source Investigation by use of Stable Isotopes and Radiocarbon Dating

Environmental Engineer Katrine Moes Kristensen, NIRAS, Denmark

Revisiting dry-cleaning sites -30 years of improving environmental investigations from the perspective of a public authority

Environmental Engineer, Ph.D. Sanne Skov Nielsen, Region of Southern Denmark

Modelling of air flow in capillary break layers. A new approach to determine governing mechanisms in balanced ventilation systems preventing vapor intrusion of volatile pollutants

Project Manager Jakob Washington Skousgaard, Ramboll, Denmark

Session N – lecture hall Jorns

PFAS

Chair: Ph.D. Morten Jartun, Norwegian Institute for Water Research, Norway

Immobilization of PFAS contaminated sandy soil from a Norwegian firefighting training facility

Director of Landfill and Contaminated Soil Hilmar T. Sævarsson, Lindum

PFAS Handbook: What, how and where to look, what are the risks and can we be sure?

Senior Consultant Jacqueline Falkenberg, NIRAS, Denmark

Mobility of PFAS: Do lysimeter results reflect concentrations monitored in a groundwater plume?

Regional Manager, M.Sc. Mikael Takala, Vahanen Environment Oy, Finland

What is the total budget of PFAS in contaminated soil and how does total oxidizable precursor (TOP) assay help comprehend the picture?

Associate Professor Patrick van Hees, Eurofins, Sweden
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NORDROCS 2018 is arranged by:

**atv Jord og Grundvand**

**Miljøringen**

**Nätverket**

**Renare Mark**

See www.nordrocs.org

We look forward to exciting days in Helsingør