



Water Quality Workshop Algarve Demonstration Site

24-26 June 2015, Auditório
Direção Regional de Agricultura e Pescas
Patação, Faro, Algarve, Portugal

APPLICATION FORM

Name:

Affiliation:

Address:

E-mail:

Free Registration. For administrative purposes please send this application form to tleitao@lnec.pt; lferreira@lnec.pt or by fax: (351) 21 844 30 16 until June 15th, 2015.

NB: Contact directly tleitao@lnec.pt if you want to participate in June 24th Algarve sites visit to check availability of places

INFORMATION / REGISTRATION



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Demonstrating Managed Aquifer Recharge as a Solution to Water Scarcity and Drought

www.marsol.eu



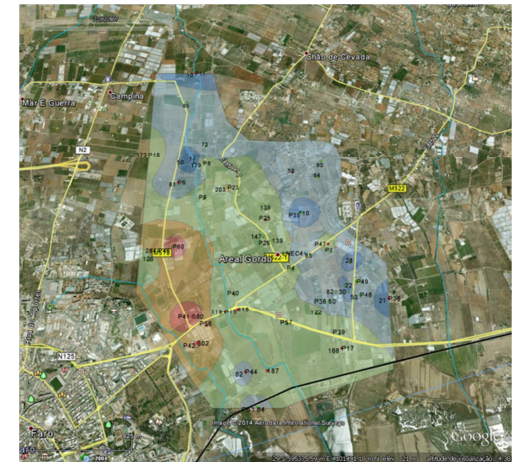
Workshop organized & sponsored by:

- Laboratório Nacional de Engenharia Civil (LNEC), PT
- Universidade do Algarve (UAlg), PT
- Terra, Ambiente e Recursos Hídricos (TARH), PT
- Technische Universität Darmstadt (TUDA), DE
- IWW Rheinisch-Westfälisches Institut für Wasserforschung gemeinnützige GmbH, DE
- Agência Portuguesa do Ambiente, PT
- Águas do Algarve, S.A., PT
- Direção Regional de Agricultura e Pescas do Algarve, PT
- MARtoMARKet EIP Water Action Group 128 - Managed Aquifer Recharge Strategies and Actions
- The International Association of Hydrogeologists (IAH/AIH)
- Associação Portuguesa dos Recursos Hídricos (APRH), PT



MARSOL

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The EU sponsored FP7 INNO-DEMO project MARSOL deals with some of the overriding questions concerning Managed Aquifer Recharge (MAR) such as risks, water quality, and technical feasibility. The project is examining – at eight demonstration sites in Greece, Portugal, Spain, Malta, Italy, and Israel – the different specific ways water of varying origins and qualities (such as precipitation, river water, treated wastewater, and desalinated seawater) can be stored in the ground with different techniques.

The overall objective of the MARSOL Water Quality Workshop, to be held in the Algarve, is to collect research results, practical experience, and innovative ideas related to water quality issues in MAR activities, and through this to contribute to the training of project participants' staff and researchers as well as other stakeholders in the water sector such as industry/SMEs, authorities, and end users. The workshop topic of "Water Quality" addresses changes and associated risks in the chemical status and hydraulic properties of water bodies due to infiltration of various water sources in MAR installations.

The workshop addresses MAR techniques such as Soil-Aquifer Treatment (SAT), which is applied for instance at the local Campina de Faro aquifer with the aim of regaining in a near future the good water quality status envisaged by the Water Framework Directive and the Portuguese Water Law. In South Portugal, aquifers in the Algarve and Alentejo regions are studied in the frame of the MARSOL project, in order to demonstrate how MAR can contribute as an alternative source of water, in the context of an integrated and inter-annual water resources management, as well as in solving groundwater quality problems caused by previous agricultural practices and wastewater discharges.

The Workshop is sponsored by actors Agência Portuguesa do Ambiente, Águas do Algarve and Direção Regional de Agricultura e Pescas and by the EU EIP Action Group 128 on Strategies and actions to bring Managed Aquifer Recharge scientific based solutions and techniques to the industry - MAR(solutions) to MAR-ket.



Workshop Program

		14h30 - 14h45	Water Quality Changes Observed in Column Experiments with Treated Wastewater and a Test Soil from Athens. Matthew Silver (TUDa @ Demo site Greece)
June 24: Sites Visits	Travel from MARSOL Mid-term Meeting in Lisbon to the Algarve followed by a visit to the Algarve aquifers demonstration sites.	14h45 - 15h00	Modeling emergent contaminant degradation under different redox conditions. Xavier Sanchez-Vila (Demo site Llobregat, Spain, UPC)
June 25: Introductory Session		15h00 - 15h15	Water quality evolution along a "triplet" MAR scheme: WWTP, canal green biofilter, artificial wetland. Enrique F. Escalante (Demo site Arenales, Spain, Tragsa)
9h00 - 9h20	Welcome addresses LNEC, DRAP, APA-ARH Algarve, Águas do Algarve, UAlg	15h15 - 15h30	Dissolution and ion exchange of Ca Mg and bi-carbonate due to MAR of desalinated seawater at Menashe site, Israel. Daniel Kurtzman (Menashe Demo site, Israel)
9h20 - 9h40	MARSOL coordination sum-up. Christoph Schüth (TUDa)	15h30 - 15:45	Characterisation of recharge (highly polished treated effluent) and receiving (groundwater) water in the Malta case study área. Manuel Sapiano (Demo site Malta, MEH-SEWCU)
Background Session		15h45 - 16h00	Discussion
9h40 - 10h00	Water quality issues during MAR – impact on native groundwater, risk assessment and legal framework. Christoph Sprenger (Kompetenzzentrum Wasser Berlin GmbH)	16h00 - 16h30	Coffee Break
10h00 - 10h20	Water quality issues relevant to managed aquifer recharge. Christine Kübeck (IWW)	16h30 - 16h45	The conceptual and mathematical modeling of the hydrogeology of the Algarve. José Paulo Monteiro (UALG)
10h20 - 10h40	Portugal's river basin management plans: Groundwater innovative methodologies, diagnosis, and objectives. JP Lobo Ferreira (LNEC)	16h45 - 17h00	Results from infiltration and tracer experiments in the MARSOL MAR infrastructures in the Algarve. Tiago Carvalho (TARH)
10h40 - 11h00	Water supply and sanitation in the Algarve. Helena Lucas, Joaquim Freire (Águas do Algarve)	17h00 - 17h30	Discussion and wrap-up day 1
11h00 - 11h20	Algarve surface and groundwater quantity and quality data assessment. Edite Reis, Maria Conceição Gago (APA-ARH Algarve)	June 26: 3rd Water Quality Session (Open scientific thematics)	
11h20 - 11h40	Coffee Break	9h00 - 9h15	Pharmaceuticals fate and removal in MAR systems under different conditions: international literature review and evaluation on DEMEAU and DEMOWARE project. Ester Vilanova (Amphos 21, Spain)
1st Water Quality MARSOL Session (Demo Sites in Portugal)		9h15 - 9h30	Simulation of an innovative enhanced system of MAR in Barcelona: Results of column experiments & Guidelines developed in DEMEAU project. Marta Hernández (Cetaqua, Spain)
11h40 - 11h50	Introduction to Algarve demonstration site. Teresa E. Leitão (LNEC)	9h30 - 9h45	Relation between clogging processes distribution in Santiuste MAR system and its groundwater quality variations, Arenales aquifer, Spain. A current approach, Enrique F. Escalante (Tragsa, Spain)
11h50 - 12h00	Removal of some nutrients, toxic metals, metalloids and pharmaceutical from wastewater prior to MAR: soil-column experiments results in Portugal. Teresa E. Leitão, Tiago Martins, Ana Estela Barbosa, Maria José Henriques (LNEC)	9h45 - 10h00	Formation of disinfection by-products due to artificial recharge of chlorinated desalinated seawater at Menashe site, Israel. Yara Dahdal (Ben Gurion University of the Negev, Israel)
12h00 - 12h10	Sustainable scenarios for groundwater quality in new irrigation agriculture sites in Portugal and Algarve scenarios for groundwater rehabilitation. JP Lobo Ferreira (LNEC)	10h00 - 10h15	Artificial recharge through wells that Mekorot design to recharge surplus desalinated water. Yossi Guttman (Mekorot, Israel)
12h10 - 12h20	Use of electrical resistivity tomography for MAR: case-studies in Algarve. Rogério Mota (LNEC)	10h15 - 10h30	Nitrate leaching to groundwater under agricultural land uses. Daniel Kurtzman (Volcani Center, ARO, Israel)
12h20 - 12h30	Interrelation of surface water and groundwater, including groundwater recharge assessment. The achievements of PROWATERMAN project. Manuel Oliveira, JP Lobo Ferreira (LNEC)	10h30 - 10h45	Coffee Break
12h30 - 12h45	Discussion	10h45 - 11h15	Water quality issues at several MAR sites in Korea. Yongcheol Kim (KIGAM, Rep. of Korea)
12h45 - 14h00	Lunch Break	11h15 - 12h30	Slot for extra talks / Discussion & wrap-up day 2
2nd Water Quality MARSOL Session (GR, PT, SP, IT, IS, MT Demo Sites)		12h30 - 14h00	Lunch Break
14h00 - 14h15	Water quality issues at the Sant'Alessio Induced River Bank Filtration MAR scheme including micro pollutants issues. R. Rossetto, A. Barbagli, C. Kuebek (Demo site Italy, SSSUP)	14h00 - 17h30	MARSOL WPs bilateral meetings / Departure from Faro airport and/or return to Lisbon
14h15 - 14h30	Water quality issues at Demo site Greece. Andreas Kallioras (NTUA)		