Live Demo 2023 - Day 2

Thursday 21 SEPTEMBER 2023 – Pavillion 6

FerraraEXPO, Via della Fiera 11, Ferrara (Italy)

07.50 – 10.20 EDT (Eastern Daylight Time)
08.50 – 11.20 BRT (Brazil Standard Time)
13.50 – 16.20 CEST (Central European Summer Time)
17.20 – 19.50 IST (Indian Standard Time)
19.50 – 22.20 CST (China Standard Time)

Opening

13:50 **Meeting at the entrance of Pavillion 6 with the Chairs**
Marco Falconi (ISPRA), Giovanni Savarese (ARPA Lazio), Paola Grenni (CNR)

14:00 **ReSoil® - sustainable extraction of heavy metals from soil**
Envit Ltd. & Matec Industries S.p.A.

14:20 **e-hyrec®/e-lorec® devices for selective recover of LNAPL and DNAPL**
Guido Bonfedi (ENI Rewind), Camilla Lanari (ENI Rewind)

14:40 **Groundwater Passive Sampling: Snap Sampler®**
Claudio Sandrone (BAW)

15:00 *Coffee break in field*

15:10 **EVO droplets, the difference in size between factory and in the field created emulsions**
Robert Wagenweld (QM Environmental)

15:30 **Whitelab Non Stationary Flux Chamber**
Marcello Tognacci (Whitelab)

15:50 **Gadgets and certificates**

16:20 **End of the session**

Register yourself in the Google form https://forms.gle/zQV1bYZnMTWFdbLj9

ENVIT ReSoil®

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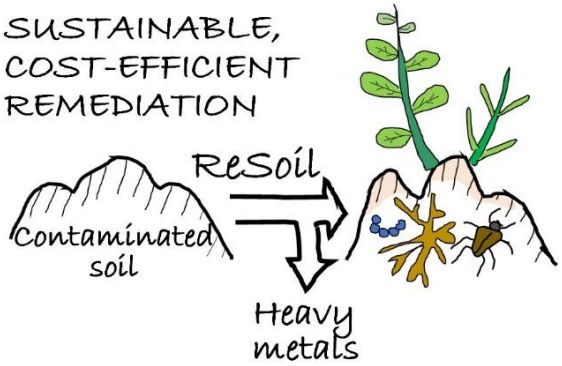

ReSoil® is a multi-patented, breakthrough remediation solution that provides efficient and sustainable removal of heavy metals (Pb, Cd, Cu, Zn, Ni, etc.) and metalloids (As, Sb) from contaminated soils.

- Based on the EDTA (ethylenediaminetetraacetate) soil extraction.
- Treats different types of soils.
- Closed loop: solutions are recycled, no wastewater is generated.
- Cost-effective: low-cost materials are used to recycle EDTA.
- Safe, no harmful emissions.
- Soil properties, microbes and mezzofauna, and soil functions and services are preserved.
- Compatible with organic contaminant removal treatments.
- With our engineering partner Matec Industries S.p.A., we offer mobile remediation plants with a capacity of 50 m^3 /day in shipping containers and larger stationary plants.

eni rewind

remediation & waste into development

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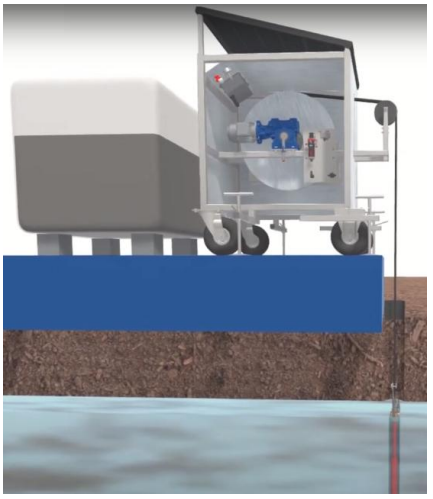

The e-hyrec® is an automated device that is placed inside wells for the selective removal of hydrocarbons (LNAPL - Light Non-Aqueous Phase Liquid or supernatant) from groundwater. The core of the technology consists of a hydrophobic filter (patented by Eni) capable of separating and extracting only the portion of the contaminant from the aquifer, with a strong reduction in the amount of water and waste sent for disposal. Compared to traditional systems, the application of the e-hyrec® device ensures faster, more effective and efficient remediation of the aquifer, making an important contribution to the protection and preservation of the water resource. Until December 2022, thanks to the 58 e-hyrec® devices installed at our sites in Gela, Priolo Gargallo and Porto Torres and at the reclamation sites of some service stations, we have recovered about 470,000 liters of supernatant oil in significantly less time than with traditional technologies, avoiding sending almost 2,000 tons of water for disposal. The device, following the opening of our environmental services outside the Eni captive market, is also available to third-party customers.

Claudio Sandrone, claudiosandrone@baw-env.it

The Snap Sampler® is is a dedicated sampling system that uses unique sample bottles with “snap” sealing caps that are open at both ends. The bottles are loaded into individual Snap Sampler modules that can be stacked in series to match sampling requirements. Water within the well screen zone moves through the bottles and equilibrates with formation water moving through the well. To collect samples, a manual trigger line or pneumatic actuator releases the spring-loaded caps and captures samples under in-situ conditions. The Snap Sampler modules are retrieved from the well and the bottles removed for shipment to the laboratory. Preservative can be added right through the snap cap without opening the bottles. Modules are then redeployed with a new set of bottles and left in place until the next sampling event.

Robert Wagenveld, R.Wagenveld@qmes.nl

QM Environmental International is a supplier of bioremediation products on the European market. Its products are used by consultants and contractors on various remediation projects such as remediation sites with chlorinated hydrocarbons, chromium 6, nitrates, petroleum hydrocarbons, heavy metals, explosive substances such as TNT and perchlorate as contaminants but also on acid mine drainage sites.
QM’s product range consists of electron donors in the form of emulsified vegetable oils (EVOs), pH buffers, electron acceptors in the form of sulphate salts, bioaugmentation formulas and organic bioactivators. Most of the products supplied by QM are produced in the Netherlands.
During this live demo, QM will show the difference between emulsified EVOs produced in the factory and EVO emulsions made in the field by demonstrating EOS Pro and EOS100, two of QM's most sold EVOs. These EVO’s will be prepared, during the demonstration, in the concentration in which they will be injected in the field and the difference in droplet size will be made clear with the aid of a microscope connected to an LCD screen.
Furthermore QM will demonstrate how bioaugmentation cultures supplied by QM will be supplied and what is necessary to inject these cultures in the field.

Marcello Tognacci, marcello.tognacci@lavrimini.com

This flux chamber is of the open-dynamic type. The chamber will be placed on the ground and sealed by placing a layer of wet sand or dry bentonite around the base. A "purge," amounting to at least 4 volumes of the chamber, is required to remove air and achieve conditions of perfect soil gas mixing inside the chamber. During the purging phase, various parameters are recorded at regular intervals such as: Temperature (°C), the concentrations of O2 (%), CO2 (%), CH4 (%), VOC (ppm), and the ΔP (Pa) between inside and outside the chamber and atmospheric pressure. Sampling will be done using a perforated rod extending along the full height of the flow chamber to sample the entire volume and connecting it through the outlet port to one or more sampling lines. The concentration of the substances sought in the soil gas can be measured either continuously by analytical field instrumentation (PID - FID - GC/MS) or by sampling with chemical desorption vials, thermal desorption vials, colorimetric vials, tedlar bags, canister.