REMAR project

Groundwater, key to the Sustainable Development Goals

Paris, May 19, 2022

The LIFE REMAR project has received funding from the European Union.

LIFE REMAR

WATER RENATURALIZATION WITH MANAGED AQUIFER RECHARGE

What is **LIFE REMAR**?

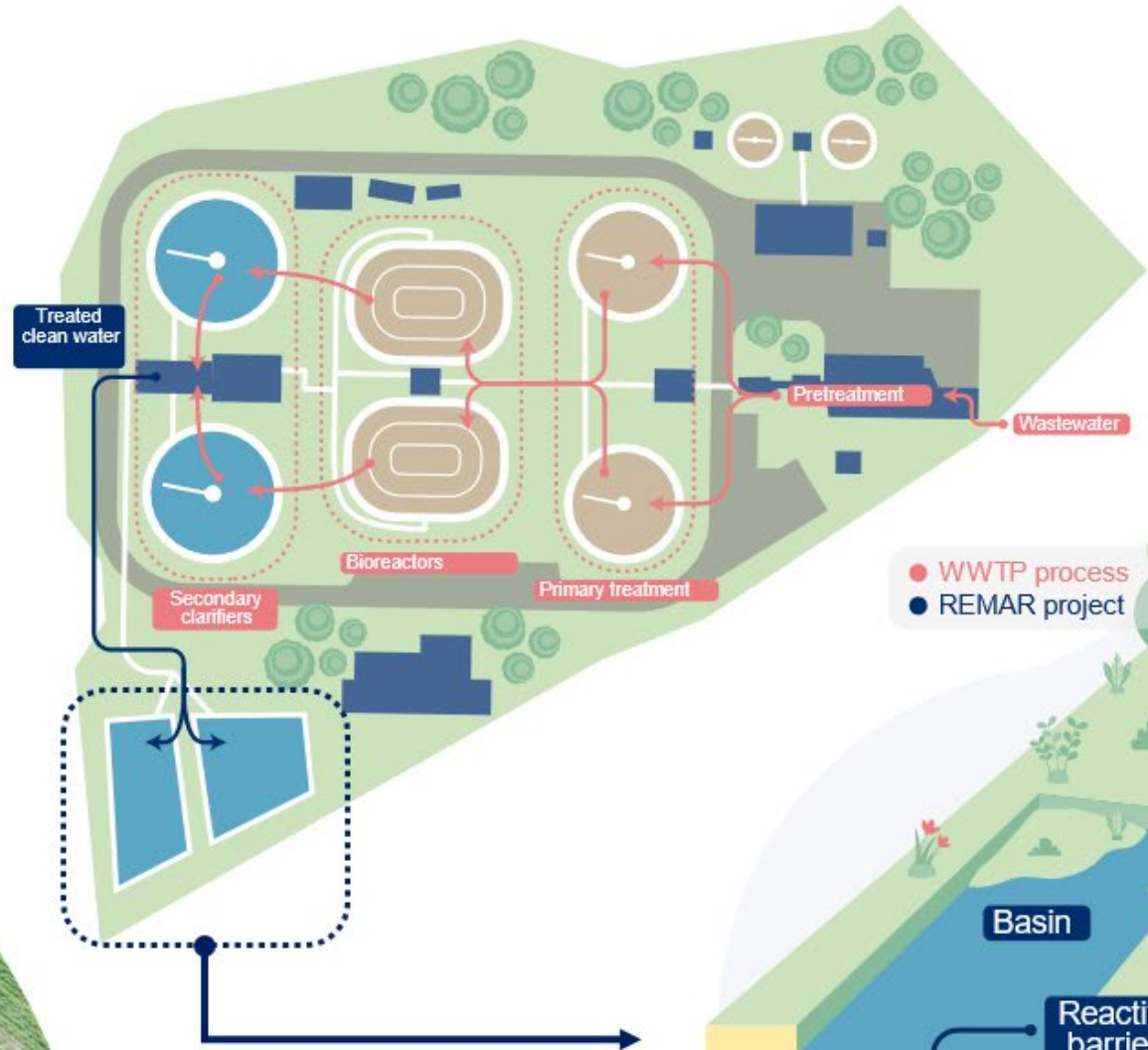
Cambrils,
Catalonia, Spain

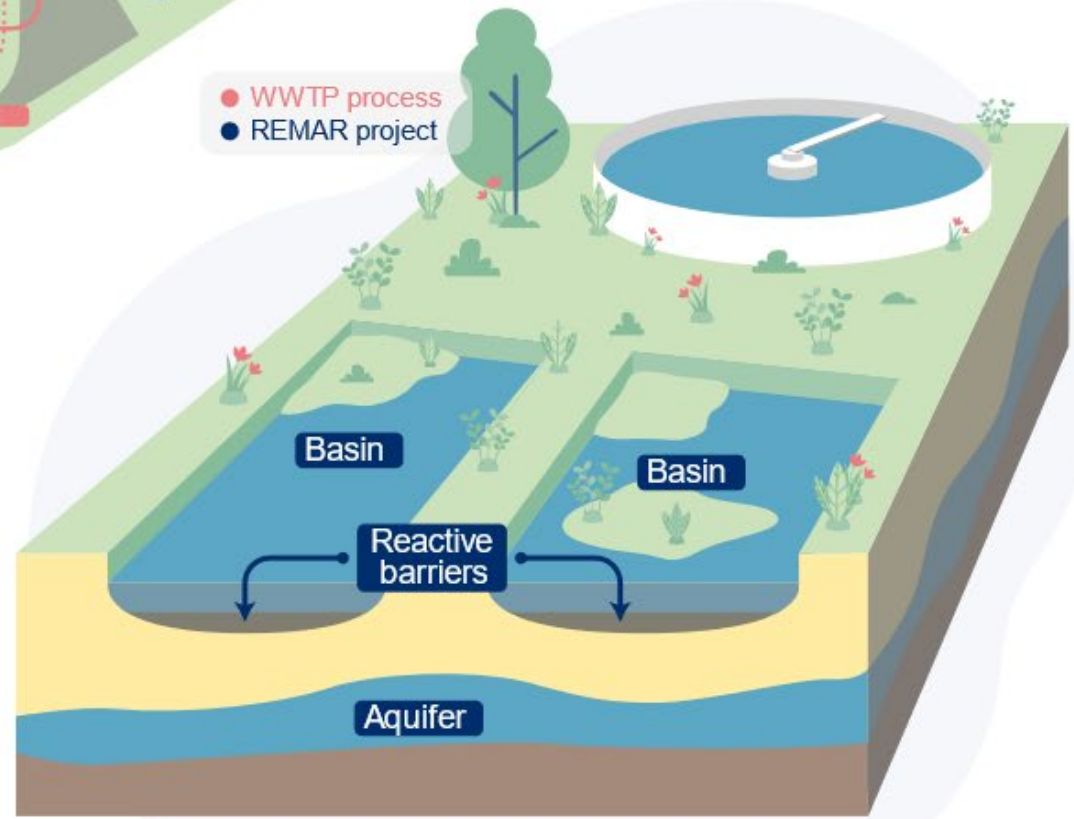
"Reactive barriers for water renaturalization during managed **aquifer recharge** in the Baix Camp region".

From 01/12/21 to 30/11/25

COMAIGUA · CSIC Consejo Superior de Investigaciones Científicas · UPC Universitat Politècnica de Catalunya BarcelonaTech · cnrs · Mejoras Energéticas

REMAR project process





Objective & Scope

Demonstrate at field scale the **feasibility** of a **nature-based MAR** technology to remove anthropogenic chemical contaminants (CEC), retain ARGs and deactivate pathogens from **treated wastewater** to **renaturalize** it.

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Actions REMAR project

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01. **Geo** and hydro-geo characterization

02. Waterproof three **pump stations**

03. Column **experiments**

04. Characterise initial water quality **CECs and MPs**

05. Characterise the **hydraulic properties** of the aquifer

06. **Basin's** construction

07. Start of the **infiltration basin** operation

08. Continuous measure of water **parameters**

09. CECs, MPs, pathogens and ARGs **monitoring in water**

10. Revise the system **design and operation**

11. Barrier material **breakthrough tests**

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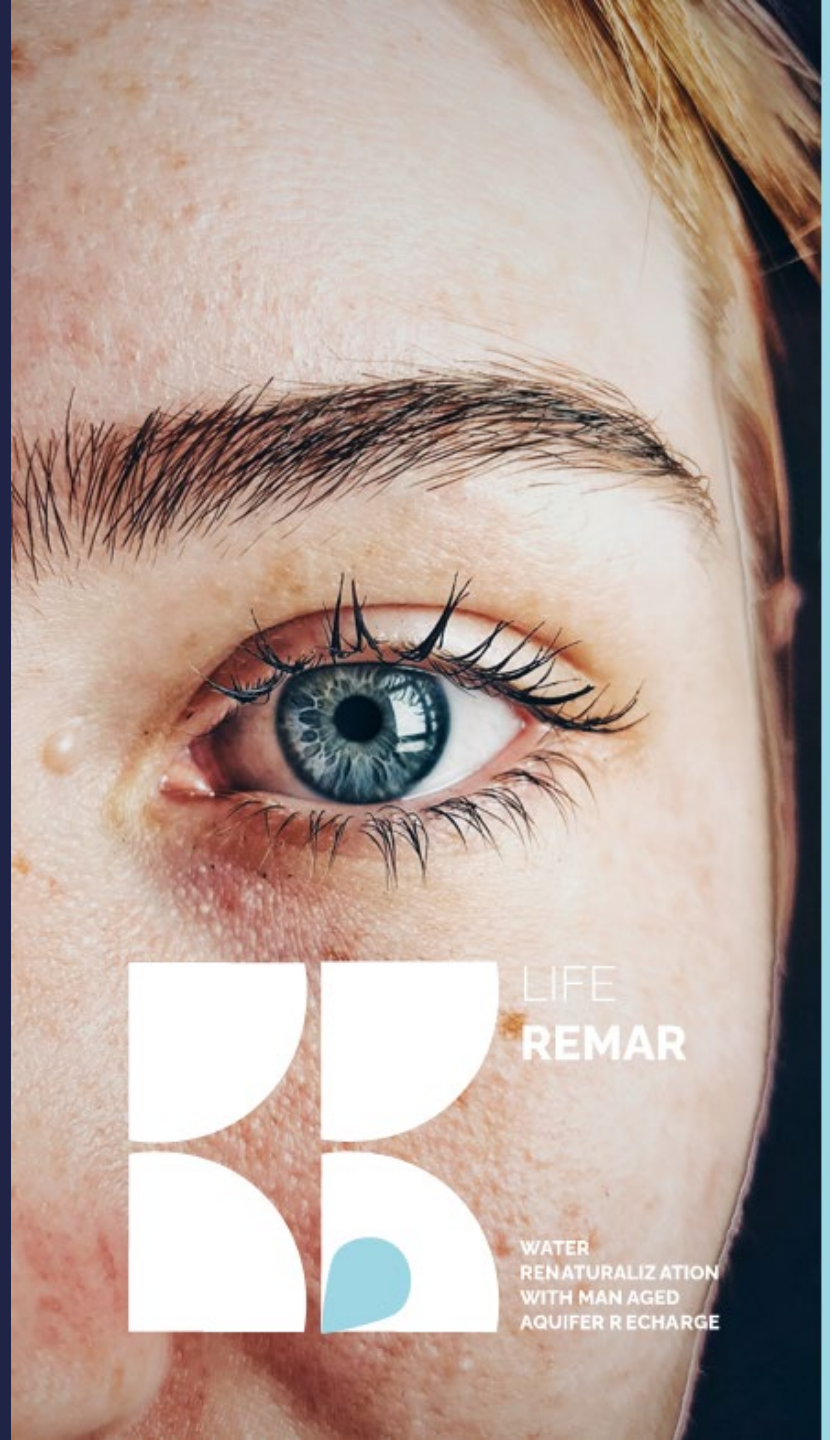
Action 1:
Geo and hydro-geo characterization

Boreholes

2 piezometers: subsoil composition.

Piezometers to control the reactive barrier process.

4 piezometers: 1 upstream & 3 downstream.



Regional scale geology

Local scale geology

Action 2:
Waterproof three pump stations

Cambrils town seawage system.

Waterproof points

Of seawater entrance into the sewage system.

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Expected results

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REMAR should demonstrate the feasibility of recharging the secondary effluent water from the Cambrils WWTP.

The MAR technology with reactive barriers will contribute to improving the environmental performance by reducing pollutants from the WWTP effluent.

Reduction of CEC (2,5 kg/yr), pathogens (3 log units), ARGs, N (2240 kg/yr), P (36 kg/yr) and SS (559 kg/yr)

Replication and scale-up.

REMAR ultimately aims to reinforce the capacity of Society to face freshwater scarcity and ensure its availability.

Thank you very much for your attention.

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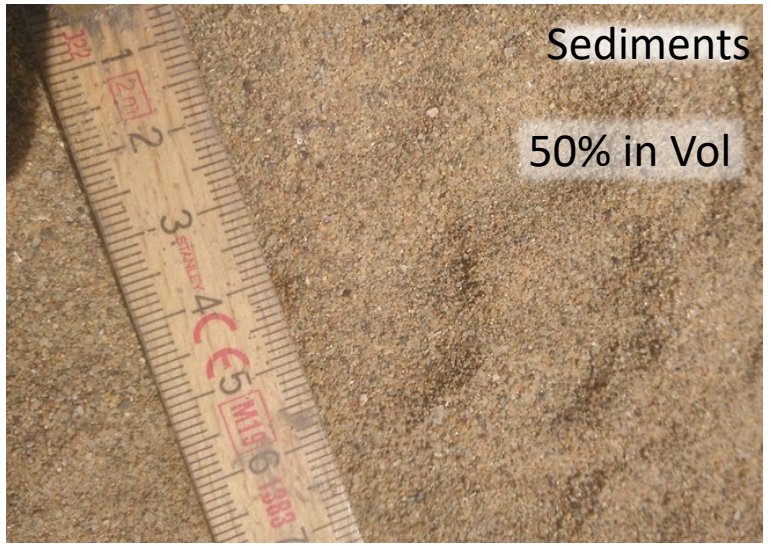
RB Materials

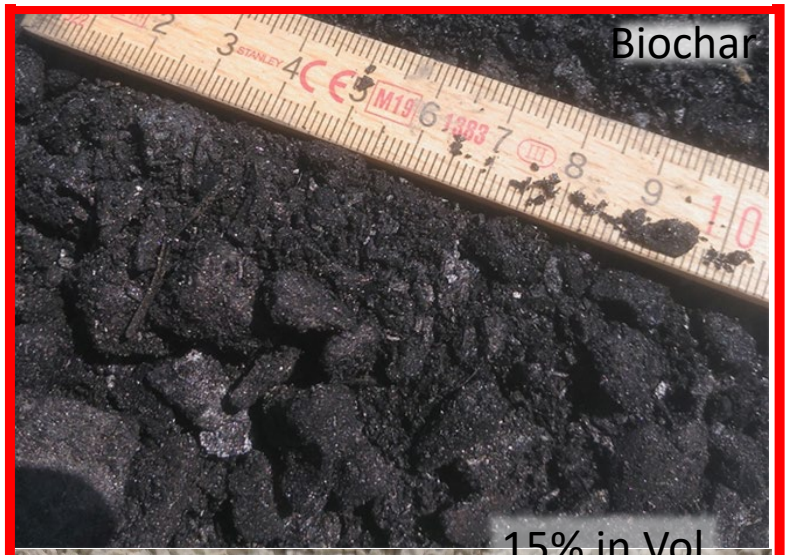
More retention time → increase the possibility of elimination

Wood in diferent degrees of maturation (chips of wood and vegetal compost):

- Provide sorption surfaces for neutral organic components
- O.M. easily degradable.



Aquifer Sediments: help maintain the structure of the barrier and not lose permeability



Increase the sorption Surface

2% in Vol

- Fe oxides: increase the anions sorption
- **clay**: increase the cations sorption