WATER RECOVERY PROJECT: THE FIRST EXPERIENCE OF DEEP INJECTION IN CASTELLÓN. RESULTS OF THE FIRST PHASE AND NEXT STEPS

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PILOT AREA LOCATION

Selected Area

Hydrogeological parameters
- Thickness: 50-200 m
- Water level variability: 500-6000 m
- Specific yield: 1-25 l/s
- Permeability: 30-50 l/s

Reasons to choose this area:
- Area with sea water intrusion
- Availability of the WTP effluent around 1400 l/s
- The number of wells on the area is about 40
- The water level in the area has been abandoned due to high salinity of the water.

HYDROCHEMISTRY

Monitoring network
- 29 injection points
- 19 abandoned wells

Parameters in situ
- Piezometric level
- Electrical Conductivity (EC)
- pH
- Temperature (T)
- Eh

Water quality:
- Major ions
- Minor ions
- Emerging contaminants

Results

CONCLUSIONS AND NEXT STEPS

The chosen area is suitable for an experiment of artificial recharge due to the poor water quality of the groundwater (sea water intrusion) and the recharge system installed. The artificial recharge test has proved to be efficient (300,000 m³ has been injected) and has provoked intense hydrodynamical and hydrochemical processes. The result of the process has moved into a rise of the piezometric levels (maximum of 3 m) and a decrease in the groundwater salinity (EC decreases 2000 μS/cm), obtaining noticeable improvement in the water quality in this part of the aquifer.

The next step would be to recharge with regenerated water. Some technical, economical and administrative problems should be previously solved.

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