Novel tools for an integrated governance of pollution from Perfluorinated Compounds

Lessons from the LIFE PHOENIX Project

Scientific program		Chairman
24 February 2021	**Management of PFAS pollution in the framework of Water Safety Plans**	Stefano Polesello - Institute for Water Research (IRSA-CNR), Italy
3 March 2021	**Modelling and monitoring legacy and emerging PFAS pollution at a catchment scale**	Massimo Mazzola - Veneto Regional Agency for Environment Protection (ARPAV), Italy
10 March 2021	**Impact of PFAS on agricultural soil and plants**	Stefano Polesello - Institute for Water Research (IRSA-CNR), Italy

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Modelling and monitoring legacy and emerging PFAS pollution at a catchment scale

Scientific program		
10:00	**Brief introduction on the LIFE PHOENIX Project**	Vanessa Groppi
10:15	**3D modelling for assessing and forecasting PFAS distribution and evolution in a groundwater at a catchment scale**	Massimo Mazzola
10:45	**Environmental distribution and monitoring of new alternative PFAS in contaminated sites**	Sara Valsecchi
11:05	**Substituting harmful chemicals. The challenge of perfluorinated compounds**	Emilio Benfenati
11:35	**The paper industry as a source of precursors to Perfluorinated Alkyl Acids (PFAA) in a Norwegian lake**	Håkon Austad Langberg
11:55	**Final remarks and discussion**	

Webinar – 3rd March 2021

Modelling and monitoring legacy and emerging PFAS pollution at a catchment scale

Final Remarks

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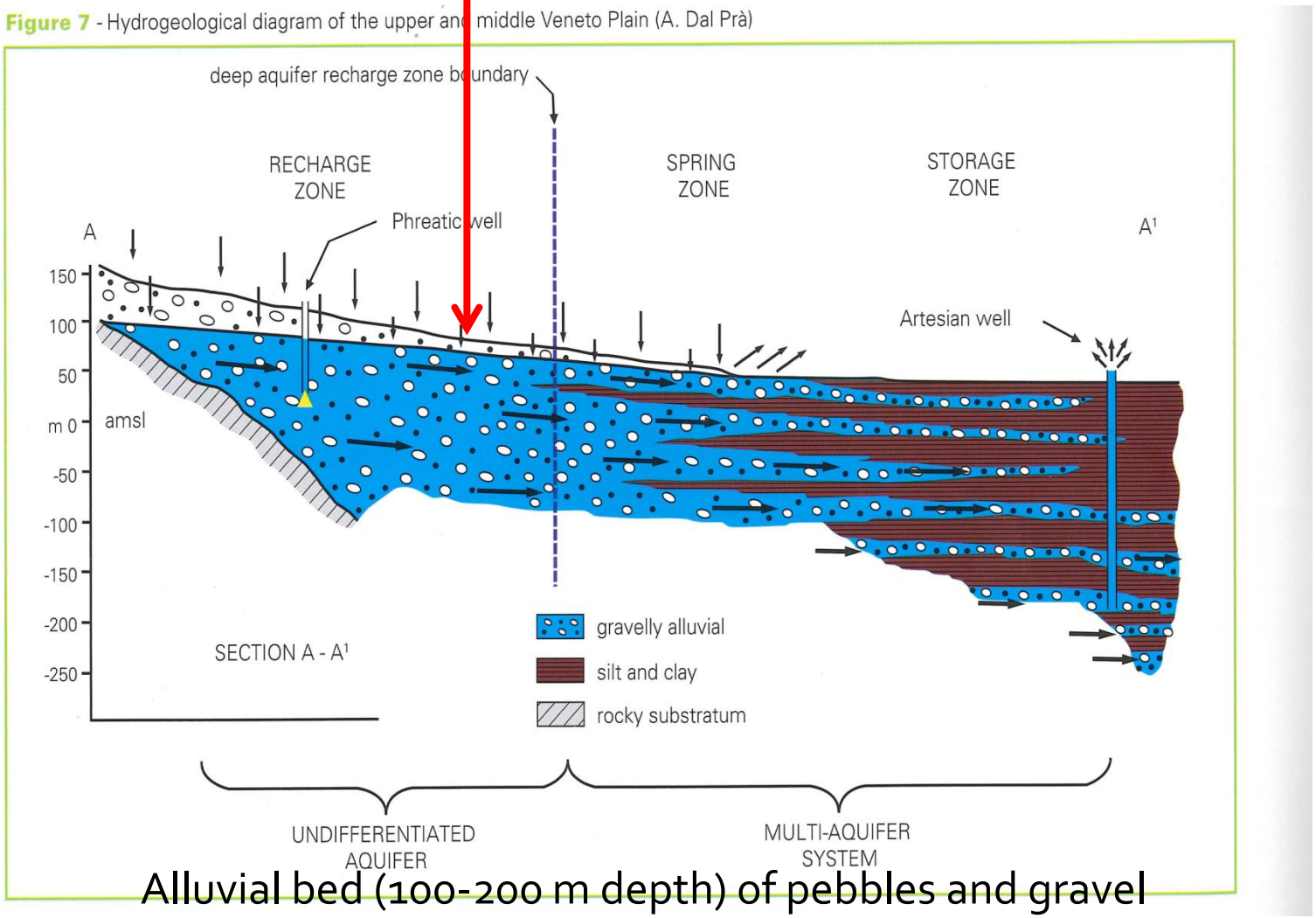
Fluorochemical factory



Alluvial bed (100-200 m depth) of pebbles and gravel with high permeability (coefficient of permeability k 10^{-3}-10^{-4} m/s)

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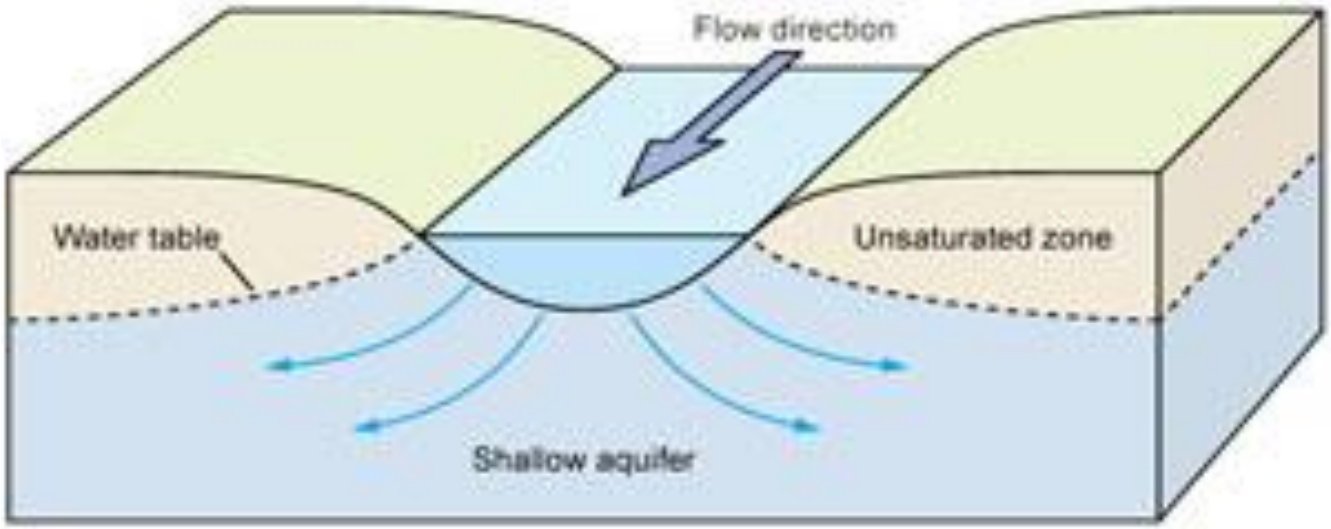
Hydrogeological characteristics

- Factory is sited in an area of high permeability close to the spring line
- In this area streams, receiving discharges, are losing toward groundwaters
- Riverbeds are often dry during summer season



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Lessons from the LIFE PHOENIX Project

1) It is fundamental the knowledge of hydrographic basin in terms of

- hydrogeological characteristics
- pressures and pollution sources
- uses of waters

2) Lack of water safety plans caused a failure in pollution prevention

3) Serious consequence of past lack of prevention: End of pipe treatments are very expensive, especially during emergency events (climate constraints, high water demand)

4) Water safety plan is effective in post-emergency management of DW chain

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Lessons about new substances

- Needs for industry collaboration and screening method so the right substances
- Needs for pure standards. Patent can not be used as an obstacle to assess the risk for new substances
- The fundamental role of in-silico models. Needs for harmonizing and assessing reliability and comparability of different predictive models
- Also experimental values have high uncertainty.

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Way forward (after project end)

- Integration of experimental and predicted toxicological and ecotox data. Need for validation of predicted ones with tests and field studies especially for ecosystem diffusion and bioaccumulation

- Assess the role of the waste cycle, landfills and past-industrial sites especially for very persistent PFAS

- PFAS are an hard Inheritance for the next generations

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Impact of PFAS on agricultural soil and plants

3° Webinar – 10 March 2021

Scientific program		
10:00	Brief introduction on the LIFE PHOENIX Project	Stefano Polesello
10:15	Lesson learnt from three-years monitoring of irrigation waters, agricultural soil and plants	Claudia Ferrario
10:45	Phytodepuration as a nature-based solution for PFAS mitigation	Marco Bonato
11:00	Greenhouse experiment of edible plant exposition to PFAS under a controlled environment	Marco Bonato, Carlo Nicoletto
11:15	Soil policy on PFAS in Flanders	Griet Van Gestel
11:45	Final remarks and discussion	

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Perfluorinated compounds
HOlistic ENvironmental
Interinstitutional eXperience
Life Phoenix

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