A Unit-Concentration Method to Quantify Source Contribution

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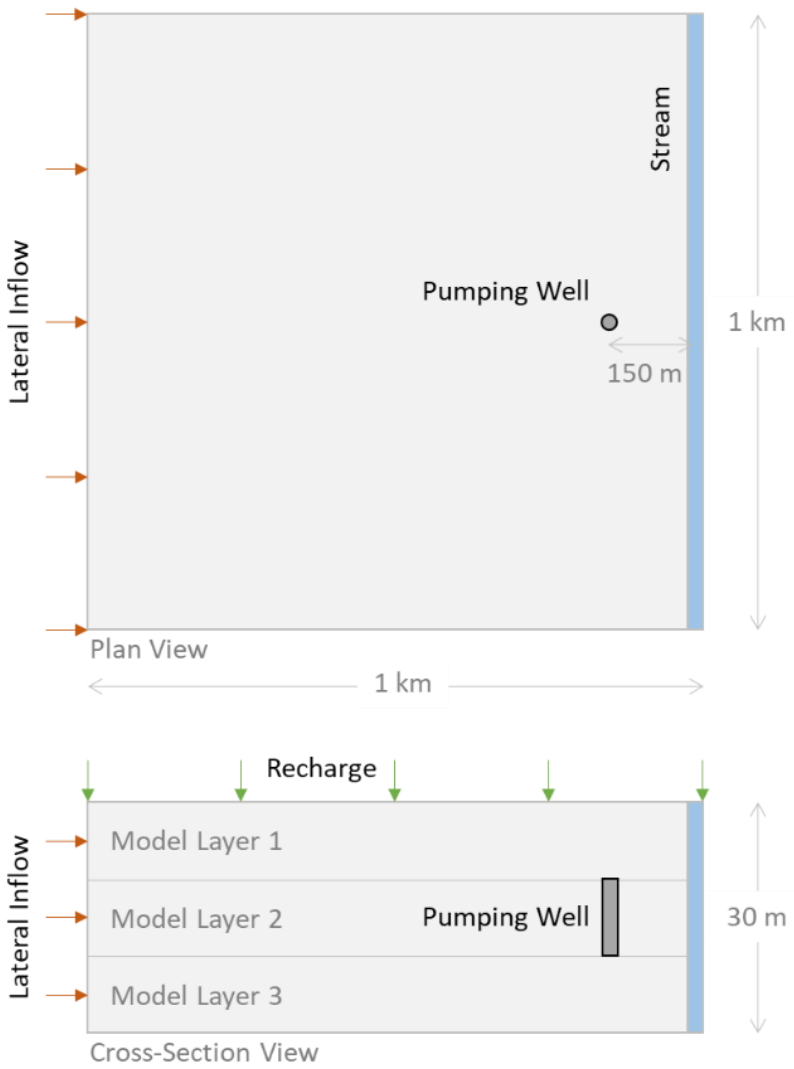

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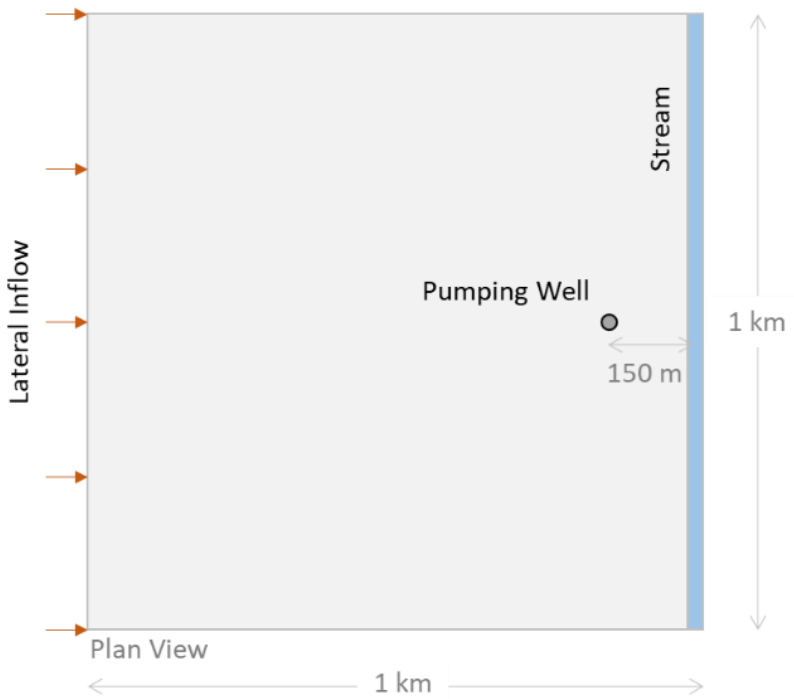
- Set unit concentration (C = 1) for the source to be assessed
- Simulate solute transport
- Monitor the “concentration” at the sink of interest (pumping well)
- “Concentration” at the sink represents the fraction of water emanating from the source

Example

- How much of the pumped water emanates from:
  - Lateral inflow?
  - Recharge?
  - Storage?
  - Stream?



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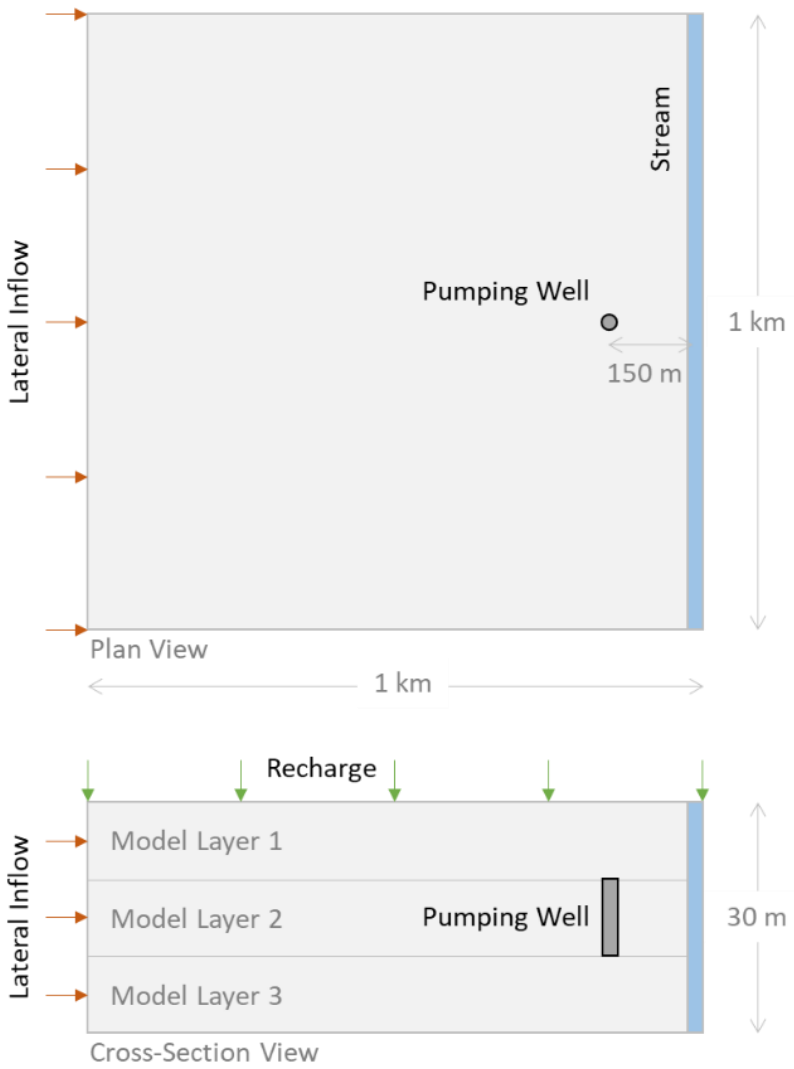

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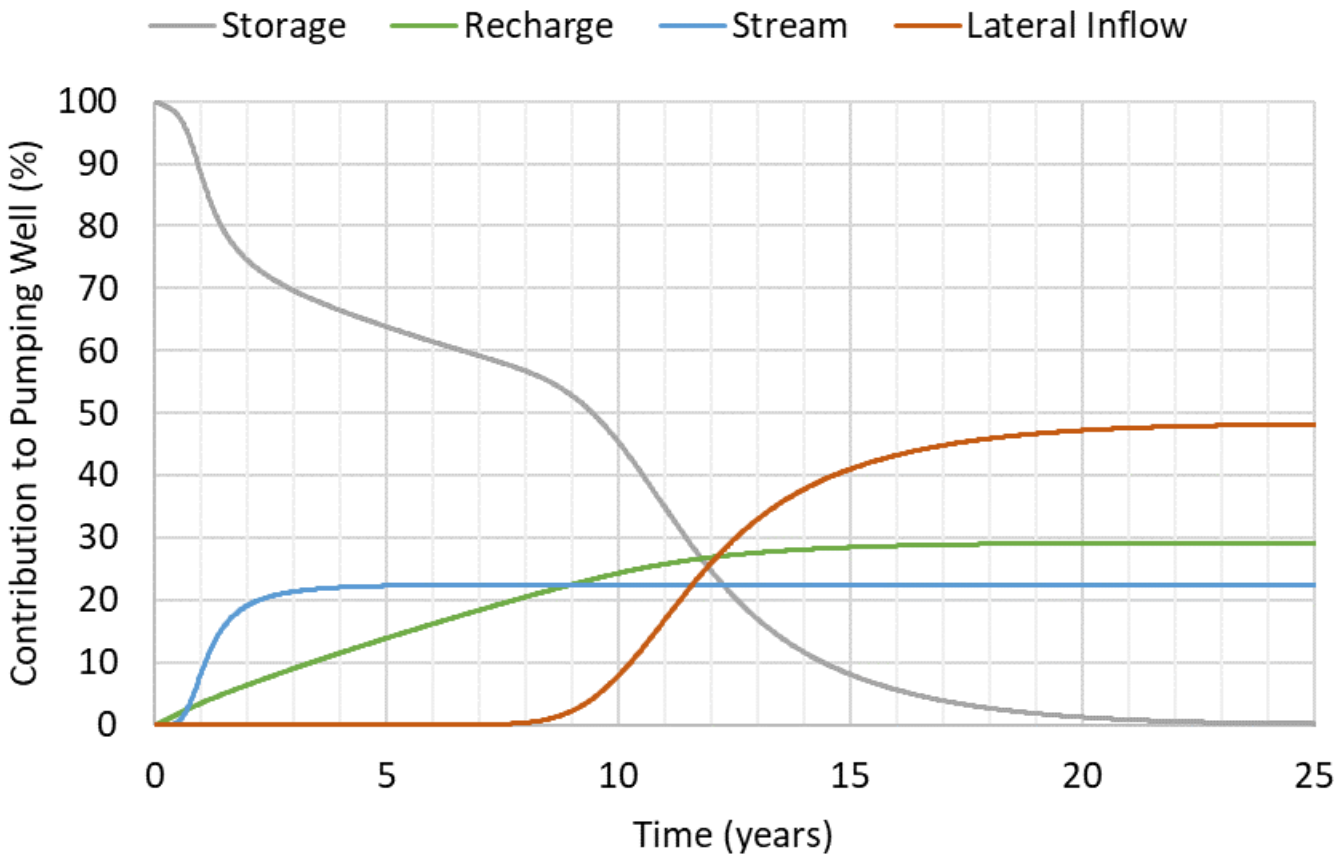
- Four solute transport simulations were run
- Concentration at the well represents various source contributions



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- Unit concentration method enables measuring the contribution of one or more sources to one or more sinks
- The distribution of concentration, unlike particle tracking methods, provides a more intuitive and direct quantification of the contribution of sources

Thank you for your time!

Questions?

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