

NICOLE WORKSHOP

MAY 11-12 2006 CARCASSONNE

CONCEPTUAL SITE MODEL VALIDATED BY
real time flow measurements and
passive diffusion samplers?

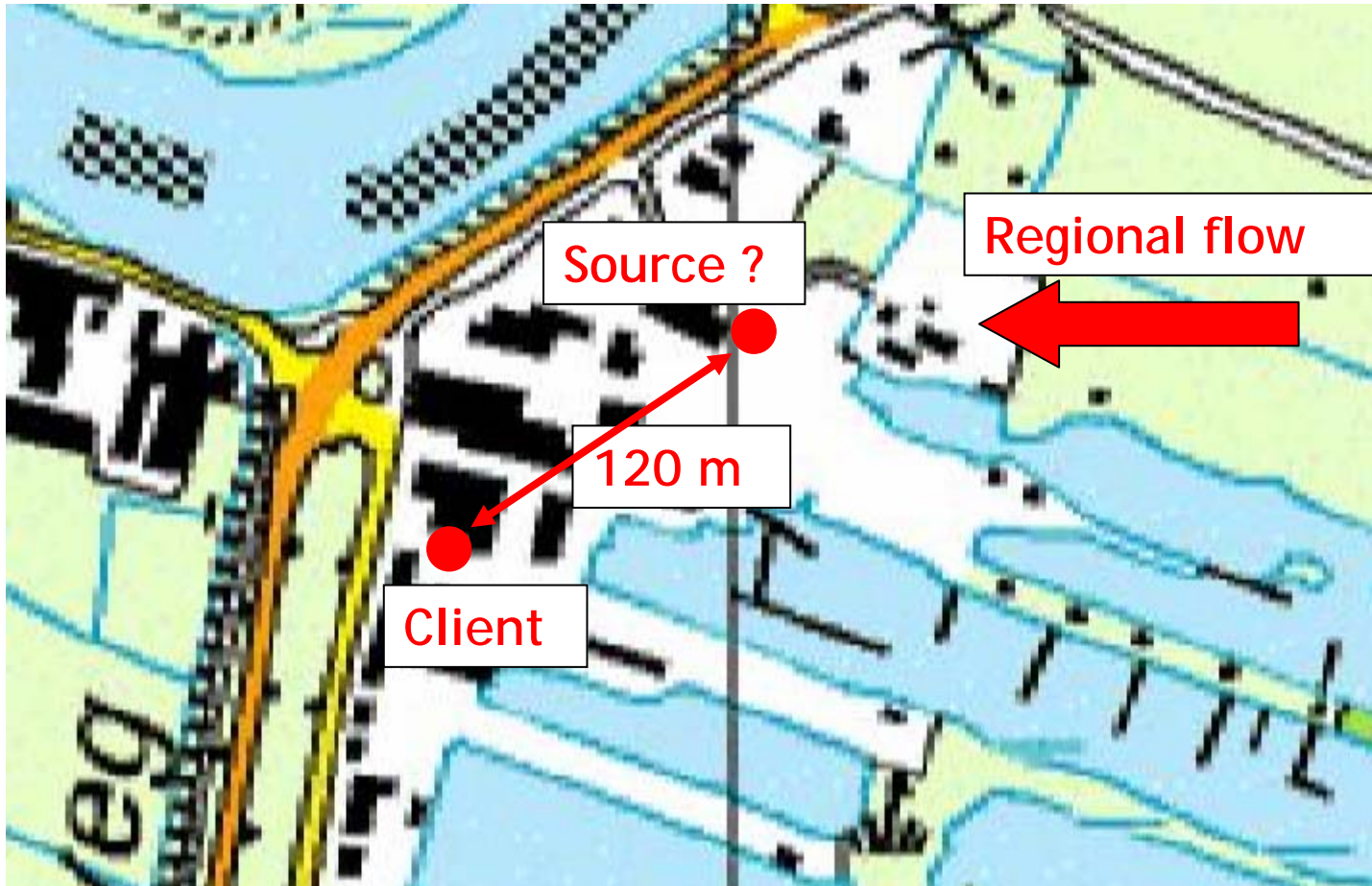
What You will see

- Practical case
- Traditional approach phase 2 survey
- Measuring groundwater flow
- Vertical delineation plume
- Your daily business

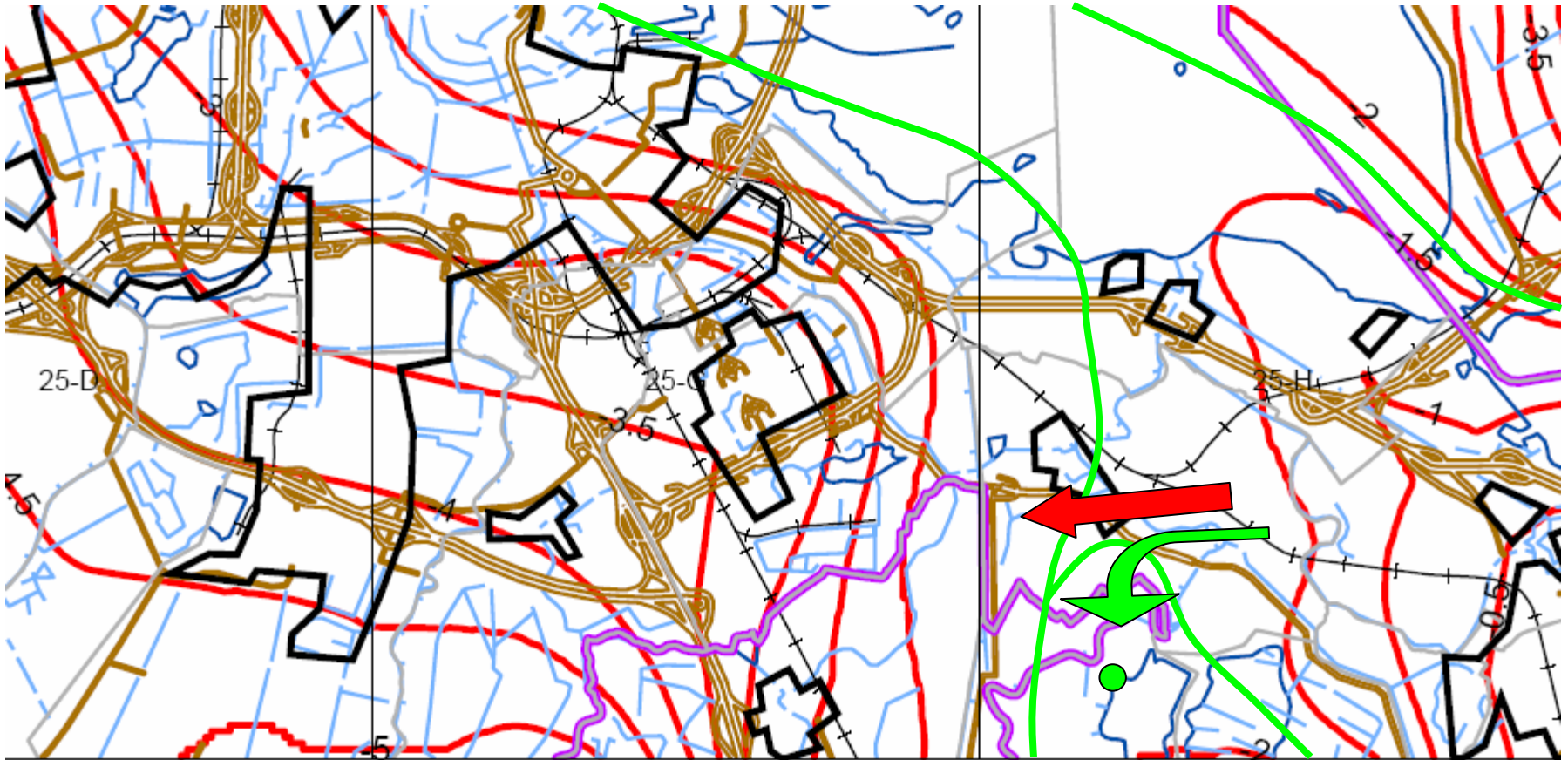
Case study



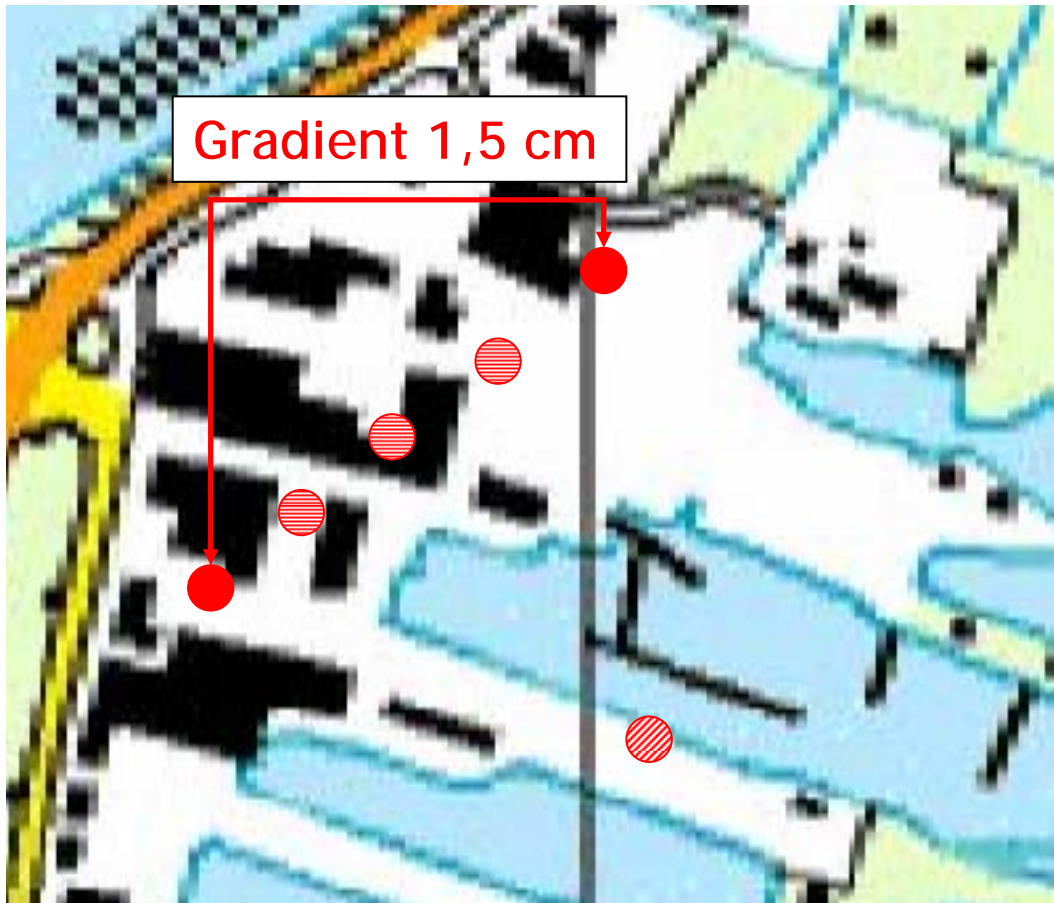
Case study



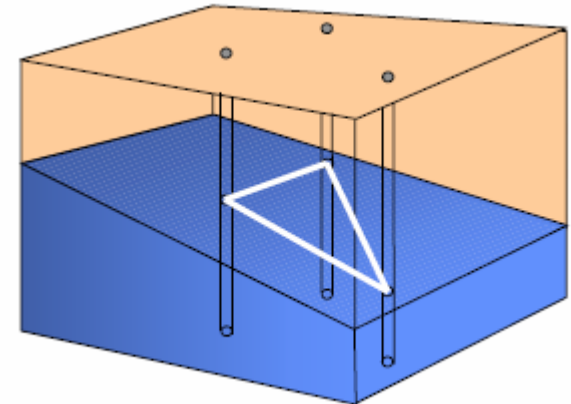
Case study



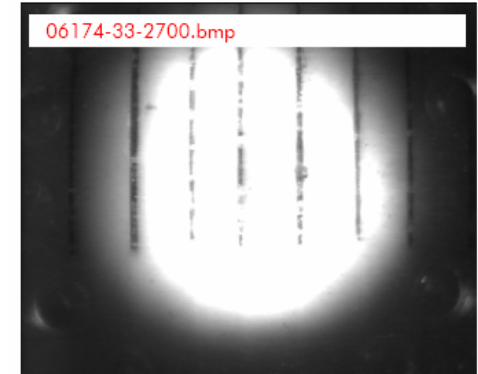
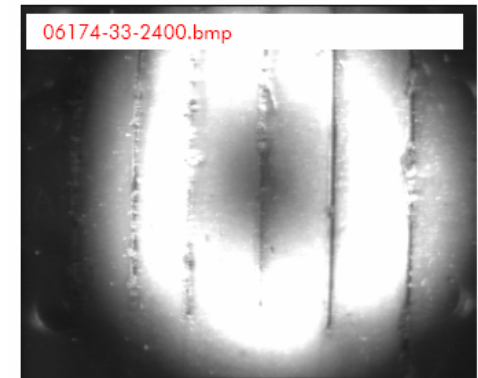
Traditional Survey



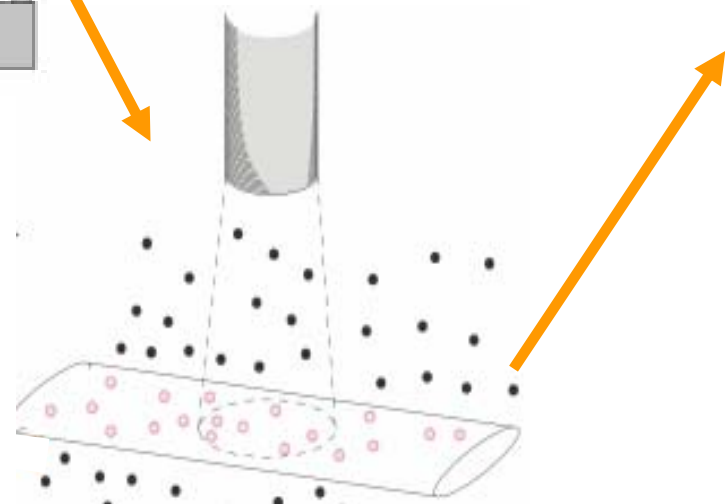
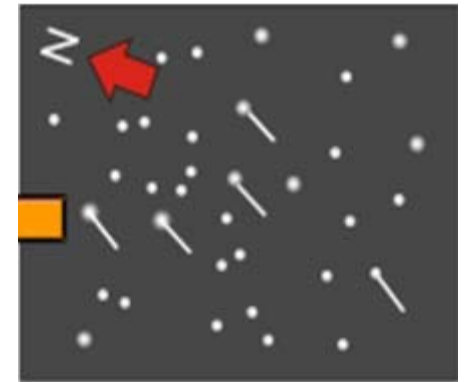
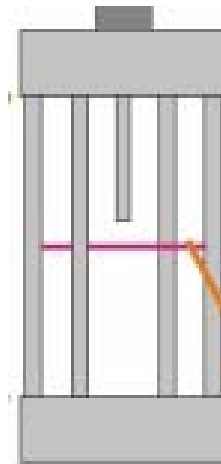
- Flow
- Chemical



Single well flow measurement

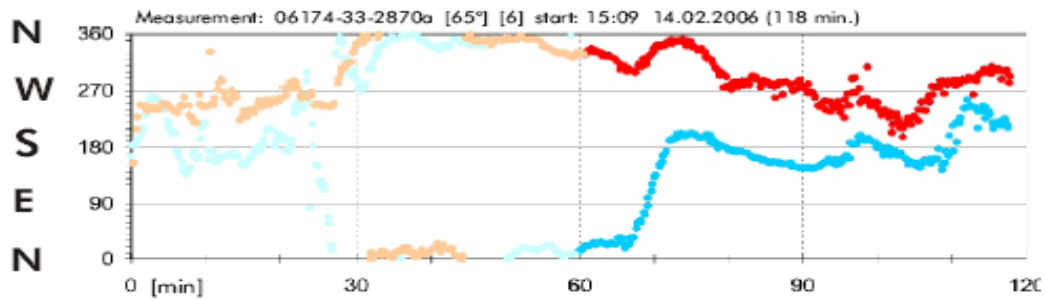


Single well flow measurement

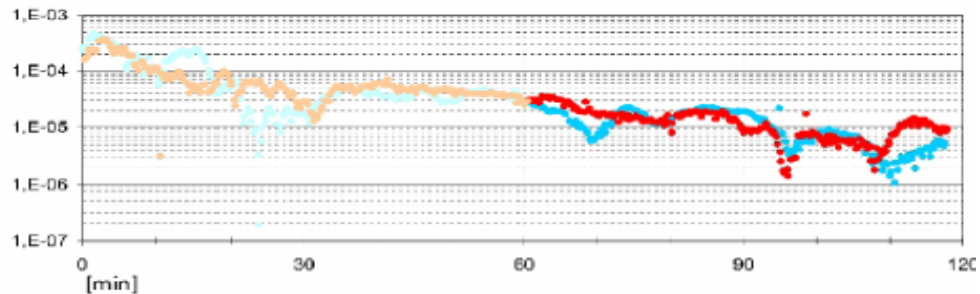


Single well flow measurement

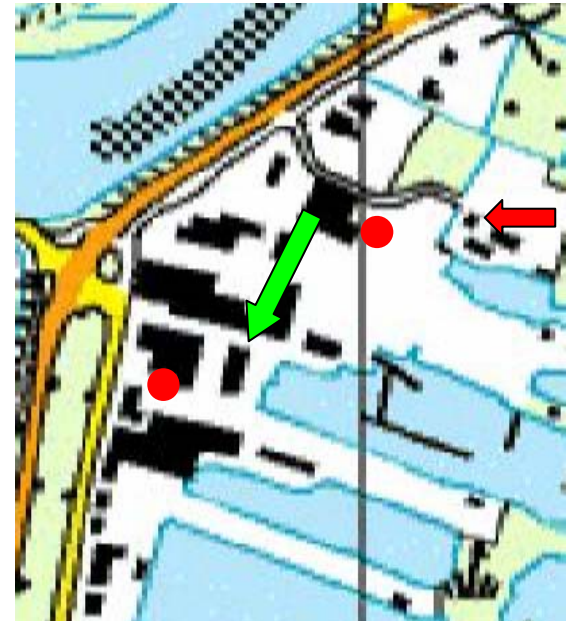
Flow Direction [°] Depth of measu



In-hole Flow Velocity v^H [m/s]



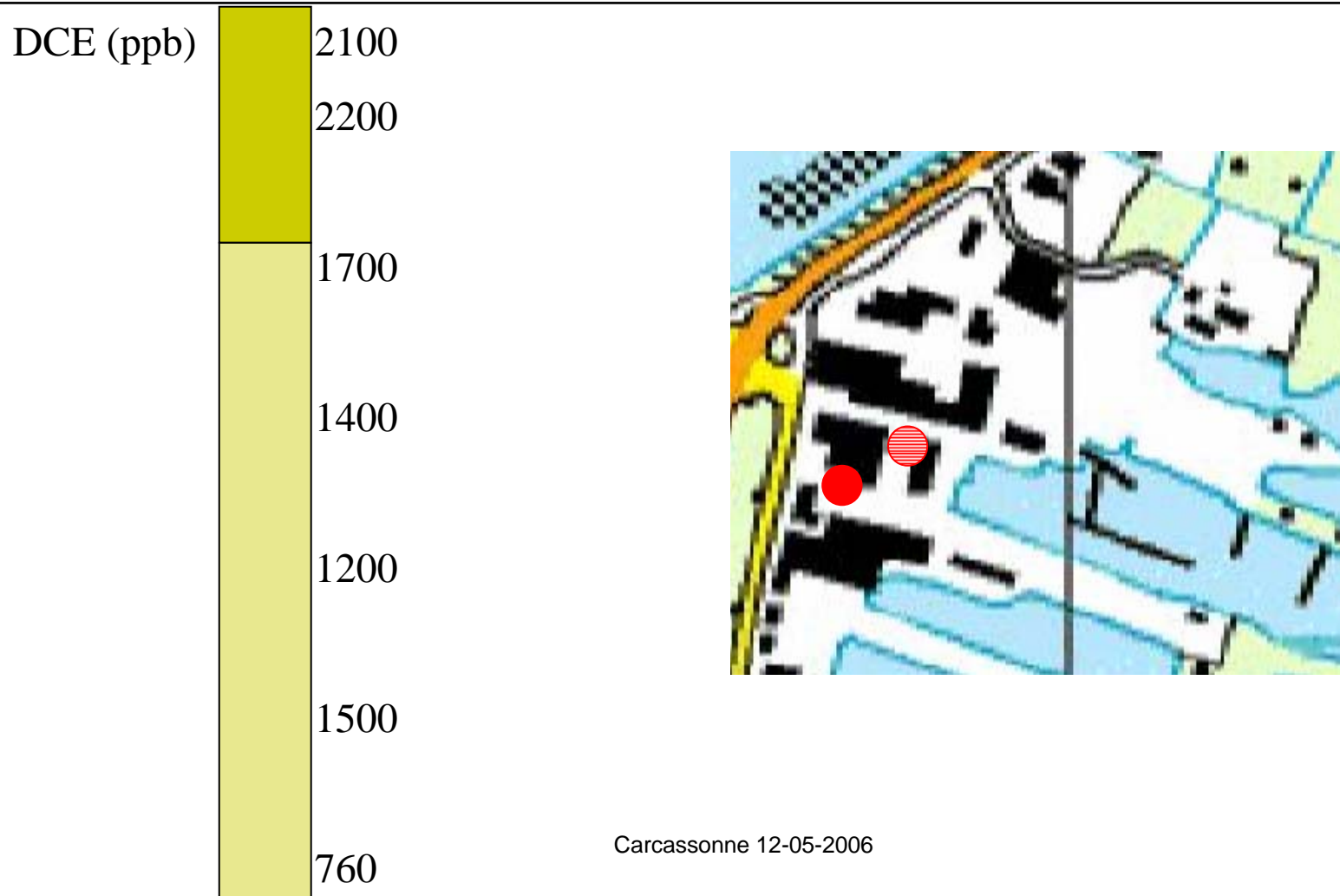
- ● valid data points
- ● calming phase/ default data points



Diffusion Samplers



Diffusion Samplers



Conclusions

- Flow direction $270^\circ \rightarrow 190^\circ$
- Flow velocity 3x faster
- External source
- Building permit
- No remedial costs
- Costs survey € 20.000 \rightarrow € 5.000
- Time savings

Application flow

- Calibrate models
- Check MNA
- Check hydraulic containment
- Check barriers
- Risk assessment migration
- Due diligence

Application samplers

- Vertical delineation (single well)
- Quality data deep sampling
- Lab conditions
- No waste water
- Deep water table

Statement

Rather doubt something new, then doubtful tradition

Many thanks

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