The issue of VOC pollution: Groundwater protection in Stuttgart

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Groundwater protection in Stuttgart

Overview

1. Importance of Groundwater
2. Polluted sites
3. Polluted sites management
4. Urban development and groundwater pollution
5. Innovative approaches required

Groundwater protection in Stuttgart

1. Importance of Groundwater

Use for recreation of the Mineral Water Ressources has a long history since the Romans and a high relevance in Stuttgart.

- 3 public baths in Bad Cannstatt and Berg
- Mineral water discharge 500 liters per second
- Second largest resource in Europe

Groundwater Management

City limits of Stuttgart

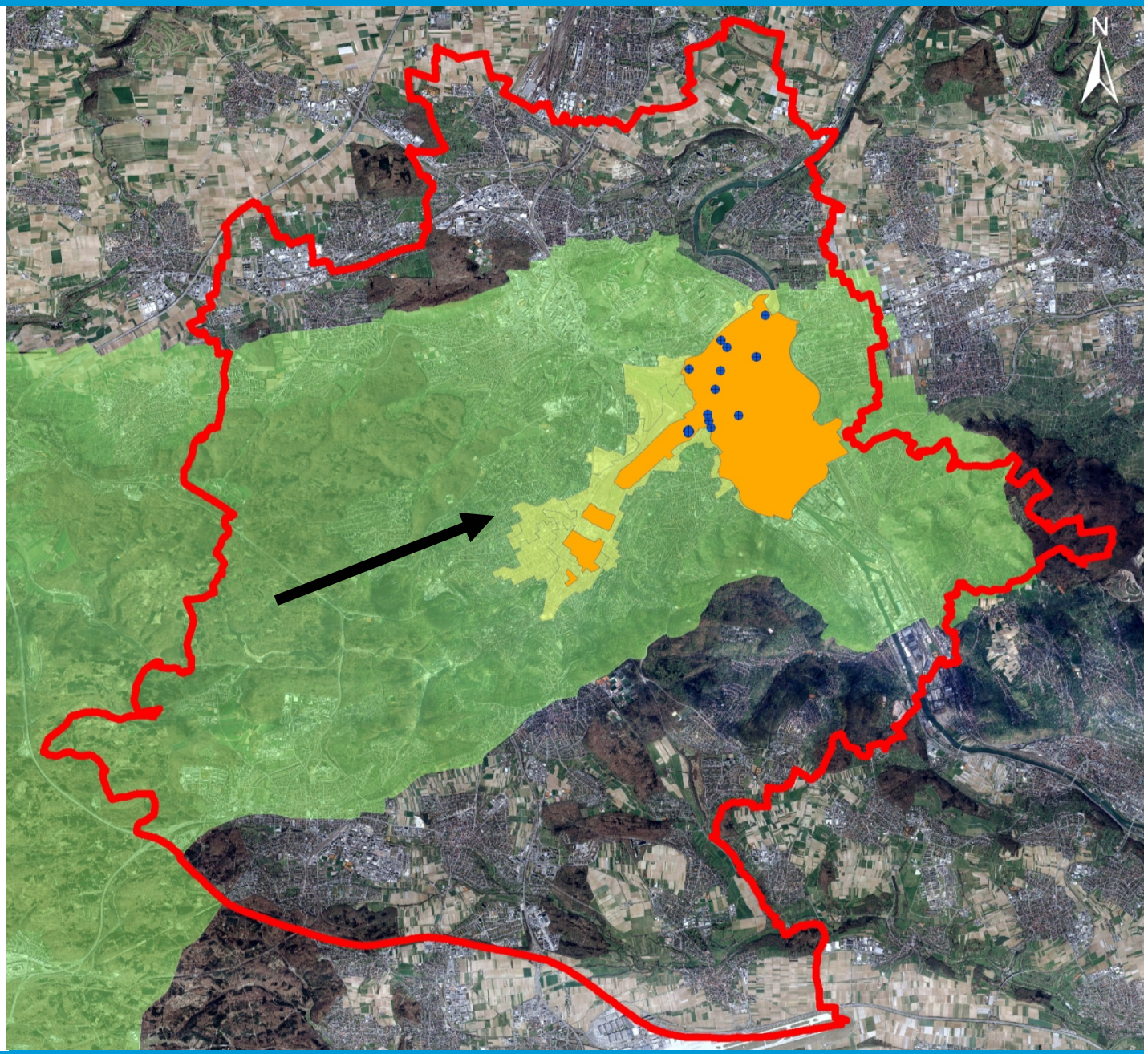
Mineral-wells

Water Prot-ection Area:

Peripheral zone

Inner zone

Core zome



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1. Importance of Groundwater

Drinking water supply from Lake Constance and Danube marsh

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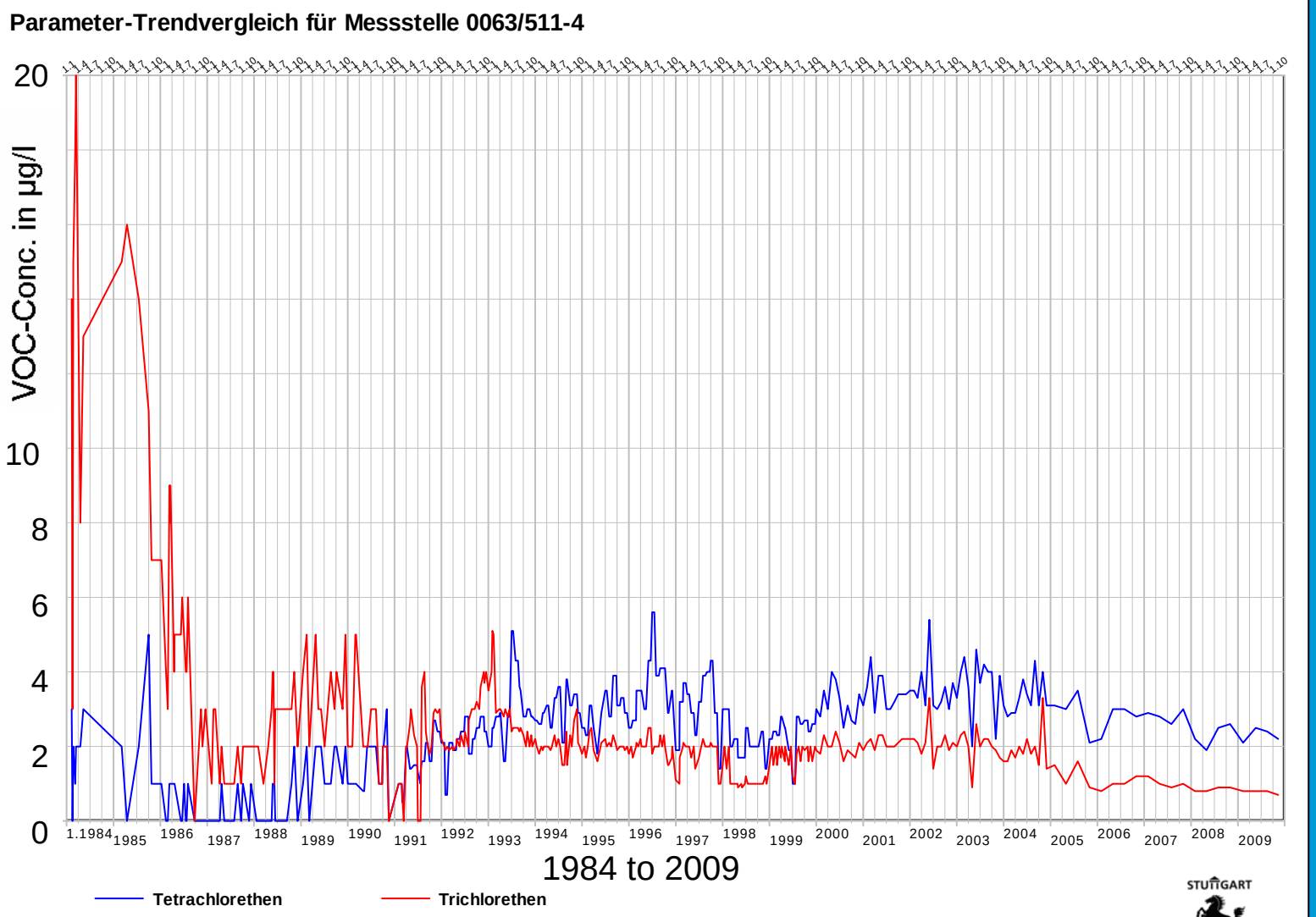
2. Contaminated Sites



Since 1983 Chlorinated Hydro-carbons (VOC) detected in the mineral springs

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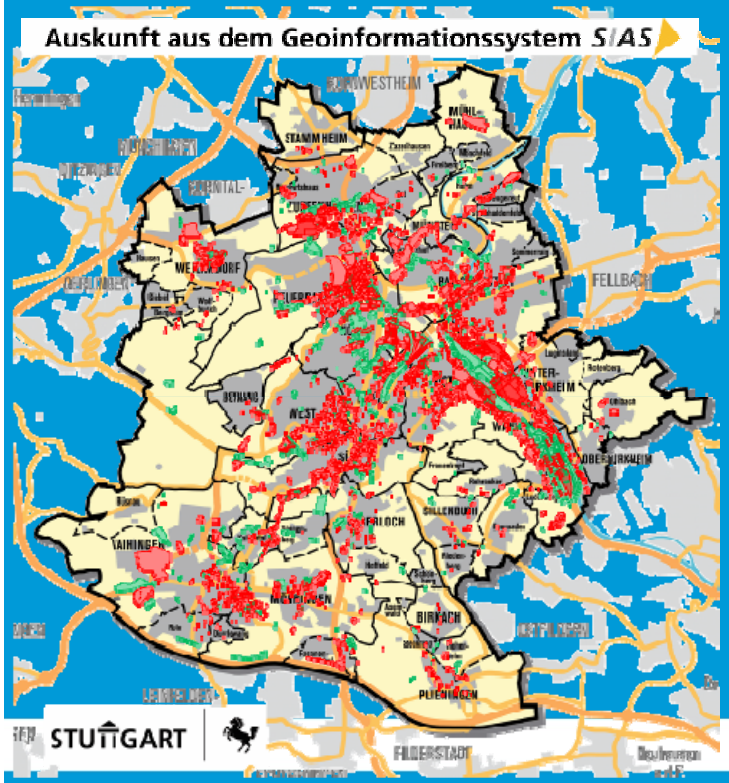
2. Contaminated Sites

Since the 19th century many small sized factories and companies established in the city.
Investigation and remediation activities started in 1985.



- 2 000 former factories with hazardous substances identified
- About 40% dealt with Chlorinated Hydrocarbons (VOC)
- About 150 sites remediated
- About 50 sites under remediation
- About 1 100 sites to be investigated

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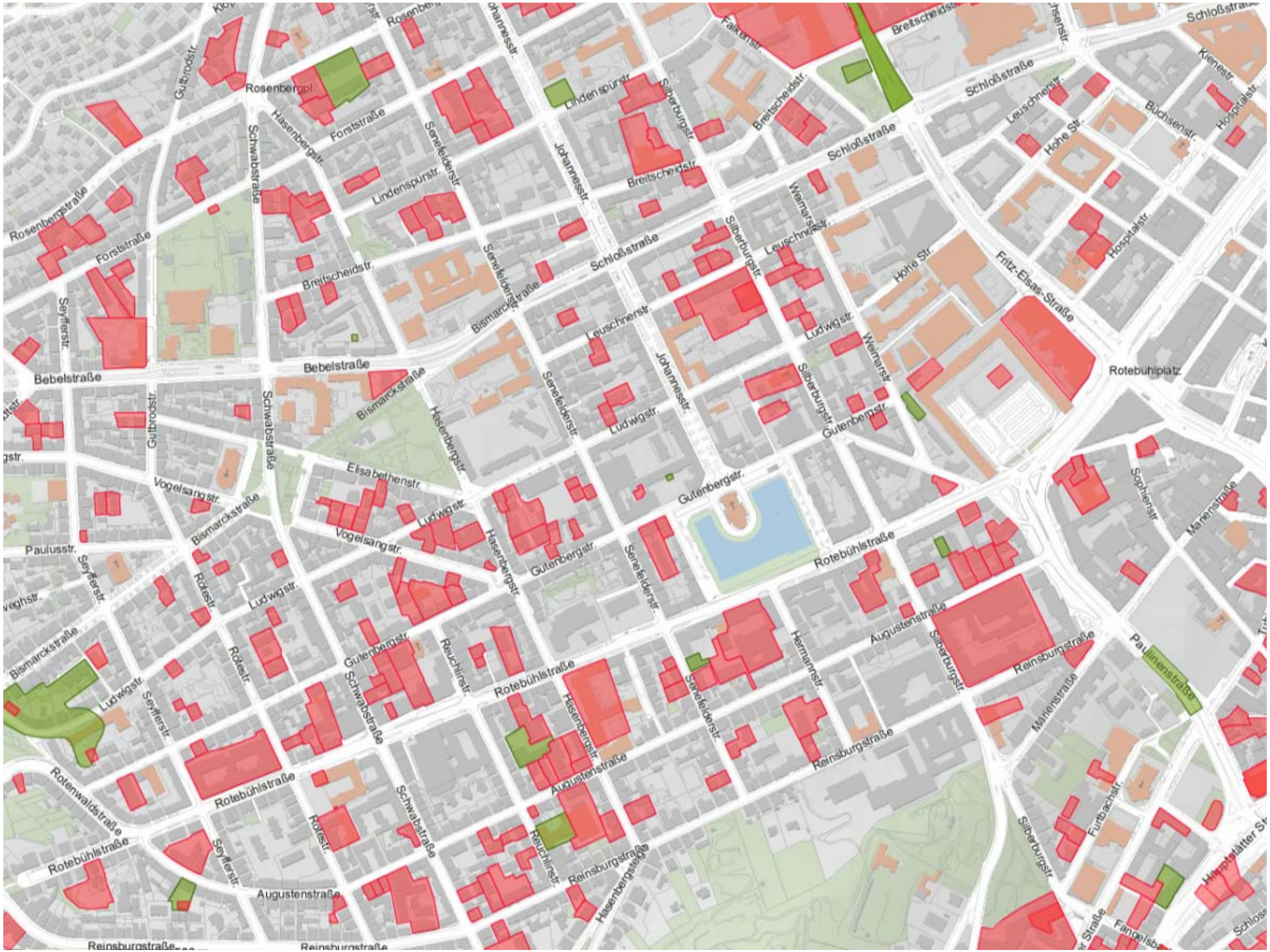
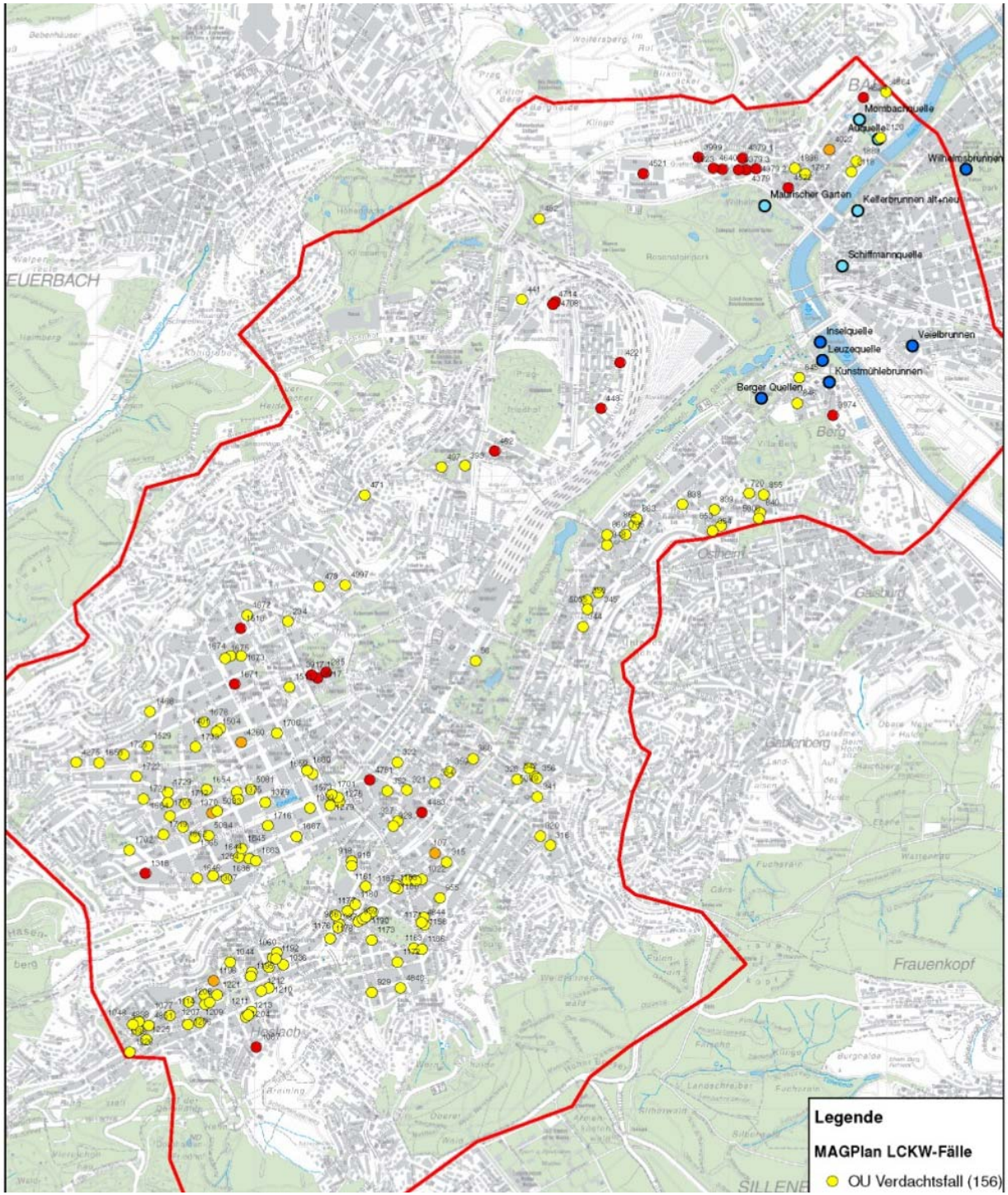

Rosenbergpl.
Gutbrodstr.
Rosenbergstraße
Forststraße
Hasenbergstr.
Schwabstraße
Lindenspürstr.
Senefelderstr.
Johannesstr.
Silberburgstr.
Falkenstr.
Bretscheidstr.
Schloßstraße
Leuschnerstr.
Hohe Str.
Buchsenstr.
Krenestr.
Hospitalstr.
Weimarstr.
Fritz-Elsas-Straße
Rotebühlplatz
Bebelstraße
Bismarckstraße
Seyfferstr.
Elisabethenstr.
Vogelsangstr.
Ludwigstr.
Gutenbergstr.
Paulusstr.
Rotestr.
Rotebühlstraße
Augustenstraße
Reinsburgstraße
Sophienstr.
Marienstraße
Paulinenstraße
Hermannstr.
Reuchlinstr.
Rotenwaldstraße
Furtbachstr.
Hasenbergsteige
Hauptstätter Str.

Contaminated Sites in the Stuttgart City Centre

- Mineral wells
- **400** areas of suspected VOC contamination
- **25** suspected to cause significant pollutant impacts



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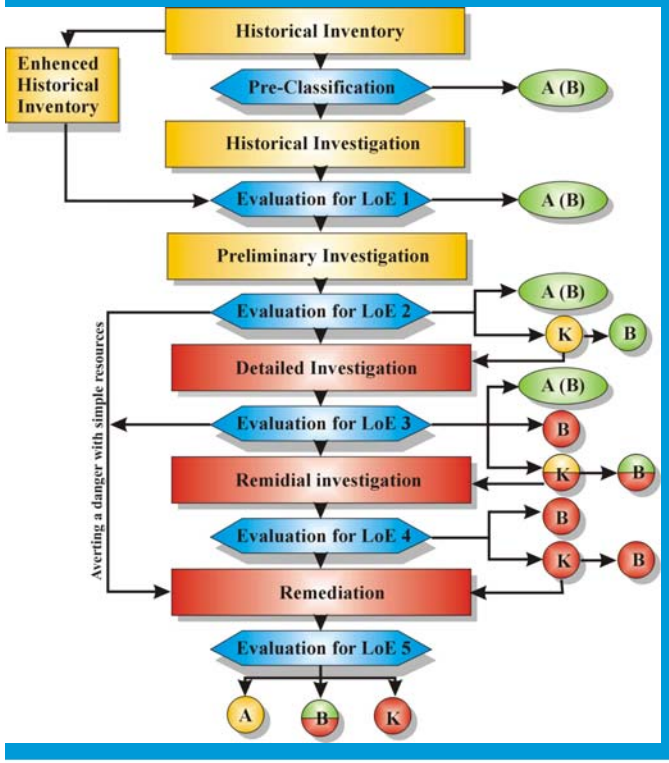
3. Contaminated Sites Management

Investigation and remediation are site by site and step by step approaches according to the law and the polluter pays principle.



- Each site is investigated and remediated separately
- Experiences: Most polluters not existing any more, open relevance of the single cases
- Spatial distribution of pollutants important, but difficult to detect

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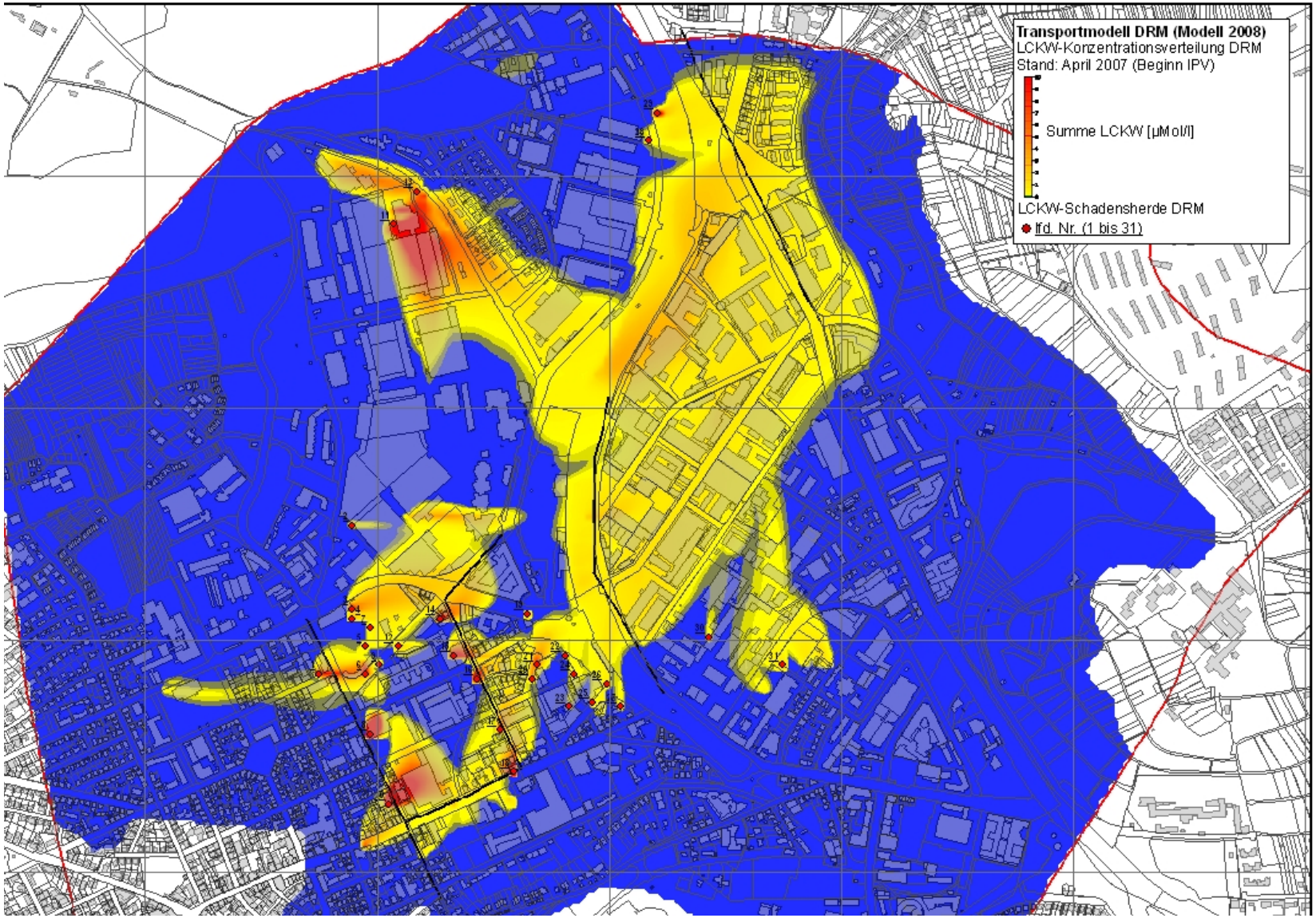
3. Contaminated Sites Management



VOC in GW

Yellow: >100 µg/l

Red: >1000 µg/l

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Remediation in course of urban revitalisation processes
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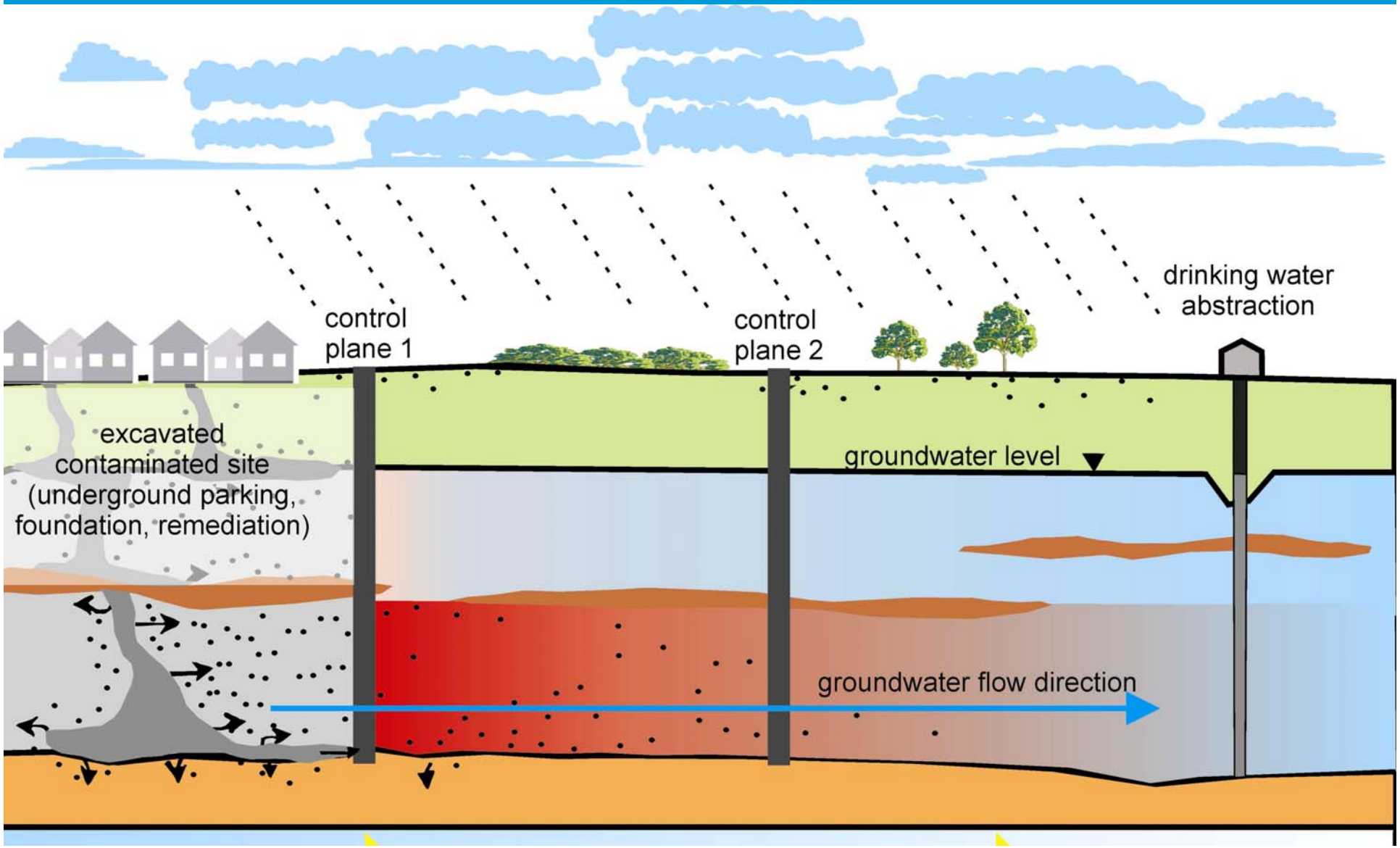
4. Urban development and groundwater pollution



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5. Innovative approaches required

Innovative approaches and tools required for investigation, remediation, financing, integration into other processes like urban development, real estate management and dealings

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Investing in Opportunities

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