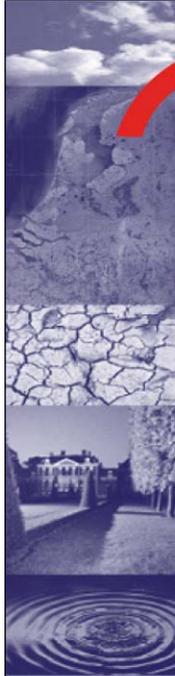


## *Deciding on soil-remediation*

# Approaches and trends

Arthur de Groof

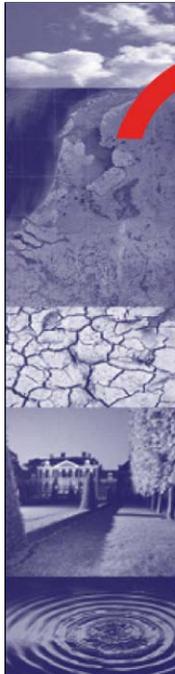
4 October 2005



## ***1980s: a strong case for multifunctionality***

USA, Austria, Denmark, Flanders r., Walloon r., Netherlands: major incidents of soil pollution

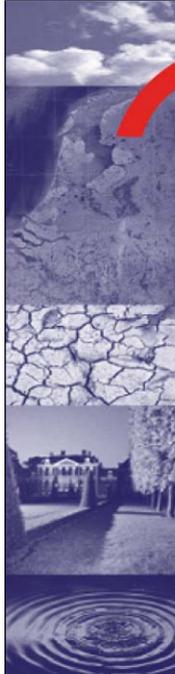
- ⇒ quick decisions with widespread impact needed
- ⇒ simple and clear decision-making models, ruling out as many risks as possible
- ⇒ a strong case for multifunctionality



## *1990s: revising strategies*

- multifunctionality noble, but costly
- high soil remediation cost deters developers
- perception that soil contamination was frustrating development plans

⇒ need to revise strategies



## *Starting points for decision-making approaches*

- generic criteria
  - + simple, clear and efficient
  - rigid
- site specific risk assessment
  - more complex
  - + more flexible

mix can combine efficiency and flexibility



## One-step approaches

generic criteria ...	Denmark Finland	Belgium (Flanders) Sweden	Germany Netherlands	Austria	Canadian regions USA UK France Switzerland
	only	by land-use type	for specific land-use types	for most sensitive land-use types only	in support of site-specific risk assessment

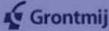
Grontmij

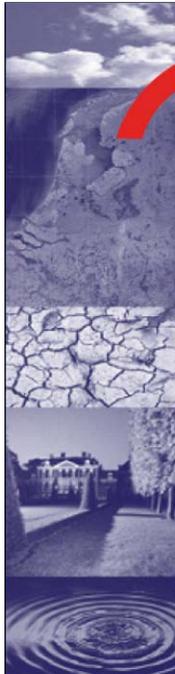
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## Two-step approaches

TWO-STEP APPROACHES: SITE-SPECIFIC RISK ASSESSMENT AFTER A FIRST TEST AGAINST ...					
Ireland Spain	Illinois	Italy	Norway		
ONE-STEP APPROACHES					
Denmark Finland	Belgium (Flanders) Sweden	Germany Netherlands	Austria	Canadian regions USA UK France Switzerland	
generic criteria ...	only	by land-use type	for specific land-use types	for most sensitive land-use types only	in support of site-specific risk assessment

 Grontmij
6



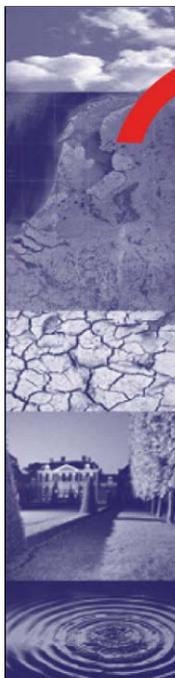
## *A two-step approach singled out*

State of Illinois (USA):

- 1<sup>st</sup> tier : generic criteria by land-use type
- 2<sup>nd</sup> tier : site-specific criteria

Developer has the choice:

- whether or not to use this tiered approach
- which of the tier(s) to apply



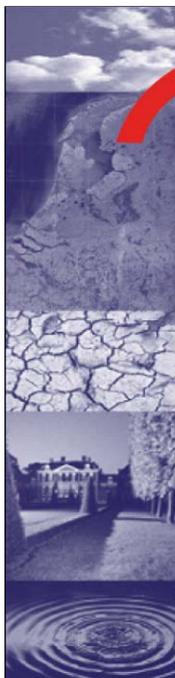
## *Issues for the future (1)*

More site-specific risk assessment leads to:

(1) a broader range of remediation options

⇒ more complex

⇒ more consultancy

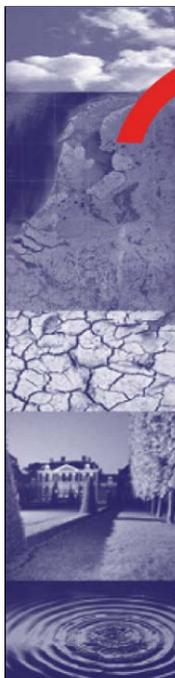


## *Issues for the future (2)*

More site-specific risk assessment leads to:

(2) more sites with contamination left behind

⇒ more sites to be monitored and  
more sites to be registered



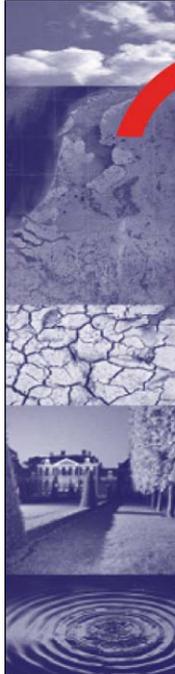
### *Issues for the future (3)*

More site-specific risk assessment leads to:

(3) lower expected remediation cost

⇒ lower direct financial risk, but  
higher liability risk

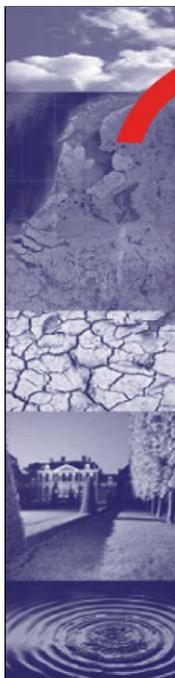
⇒ higher acceptance by the general public



## ***Meeting increasing pressure for Brownfield development***

- measures reducing costs and risks for developers
- public and private sector partnerships
- creative solutions:
  - technological
  - administrative
  - financial
  - judicial

⇒ always with site-specific elements



## *Tips and tricks*

Setting up or revising a decision-making process:

- think about ratio generic / site specific
  - always include site-specific elements
- think about one, two or more step approach
  - clear-cut or more flexible?
  - simple or complex?
  - cost- or risk based?
  - can contamination be left behind?
  - what does the public favour most?