The governance and management of the 42 areas of the Italian National Priority List
Siti di Interesse Nazionale (SIN) = Sites of National Interest

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25 maggio 2023 | Taranto

Contaminated megasites: the governance and management of complex areas. experiences from Europe and other continents

How the sites are identified (art.252 d.lgs.152/06)

The sites of national interest can be identified in relation to:

- the **characteristics** of the site,
- the **quantity** and **hazardousness** of the **pollutants**,
- the extent of the **impact** on the **surrounding environment** in terms of **health and ecological risk**, as well as detriment to **cultural and environmental heritage**.

The **identification** of sites of national interest is **provided** by decree of the **Minister of the Environment**, in agreement with the regions concerned.

Sites of National Interest

How many

Identified since 1998 are currently 42. Marine areas are included in the perimeter of 17 of them. The problem affects, except for Molise, all Italian regions. Correspond to the more significant and historical industrial areas of Italy.

Surface

The total area perimeter on the ground is 171,198 hectares and represents the 0.6% of the surface of the Italian territory. The total area perimeter to the sea is equal to 77,733 hectares.

Law and Procedures

The SIN regulamentation is the same as regional sites; but the responsibility for the procedure rests with the Ministry of the Environment

Criteria to identify (defined by law)

a) the remediation must concern **areas** and **territories**, including bodies of water, of **environmental** value;

b) the remediation must concern **protected areas** and territories;

c) the **health and environmental risk** deriving from the detected exceeding of the risk threshold concentrations must be **particularly high** due to the density of the **population** or the **extension** of the area concerned;

d) the **socio-economic impact** caused by the pollution of the area must be **significant**;

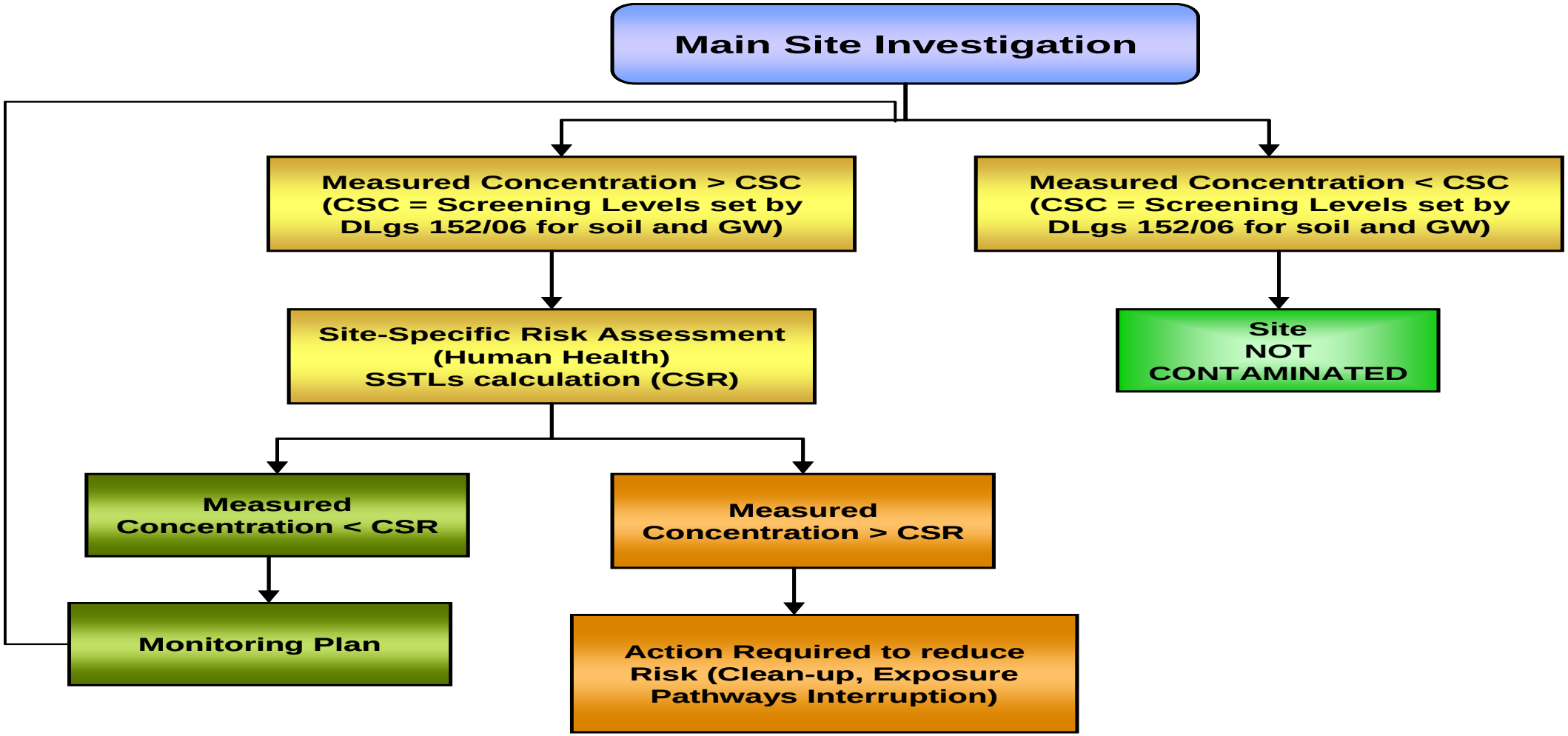
e) the **contamination** must create a risk for the **heritage of historical and cultural** interest of national importance;

f) the interventions to be implemented must concern sites included in the territory of several regions;

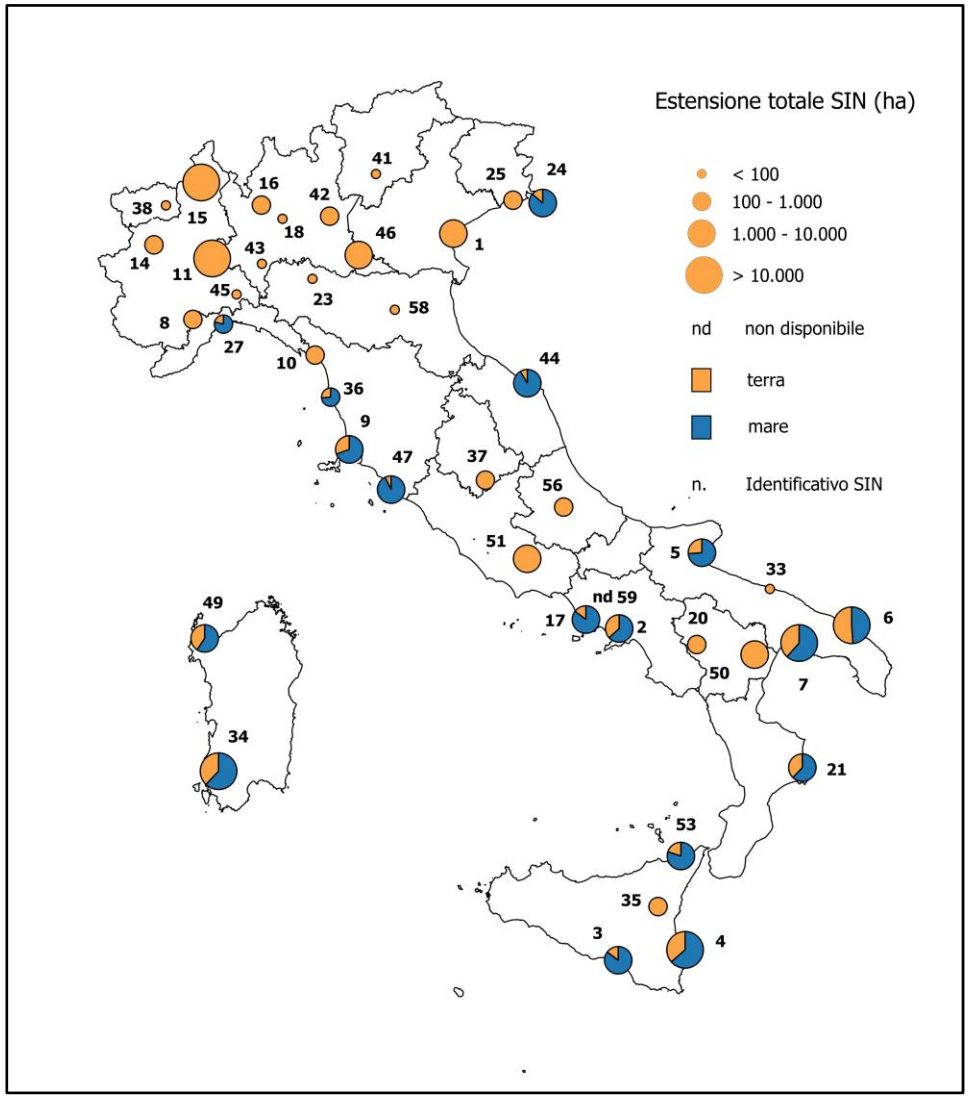
g) the persistence, currently or in the past, of refinery activities, integrated chemical plants or steelworks

h) sites affected by **asbestos** production and extraction

Procedure for contaminated sites



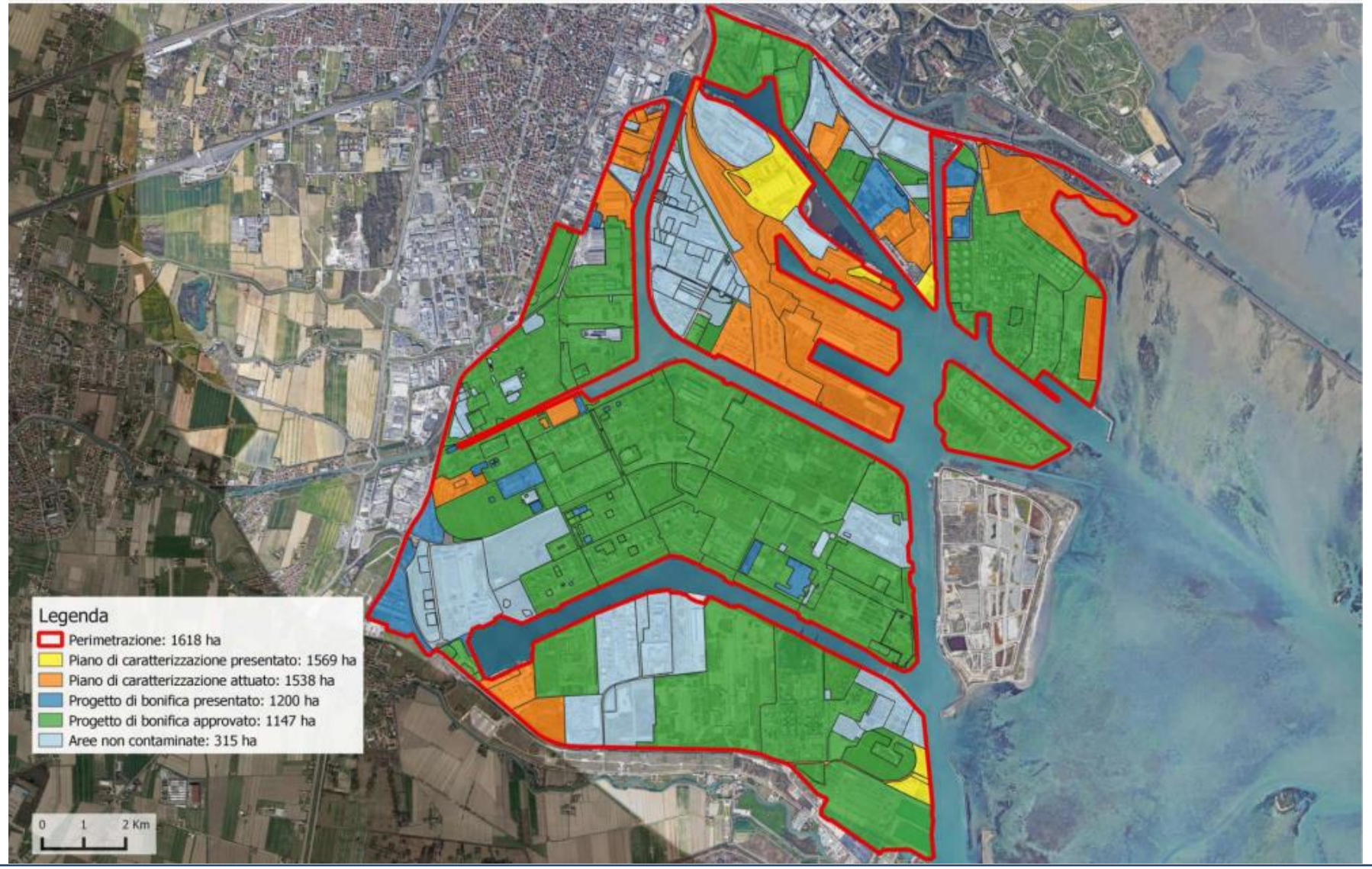
Why is ISPRA talking about the Sites of National Interest?



Ispra with regional agencies

- prepares jointly with regional agencies technical reports on project documents presented to the Ministry by the owners
- participate in technical meeting and service conferences
- carry out inspections

Venezia-Porto Marghera, progress of soil remediation



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Napoli, progress of soil remediation

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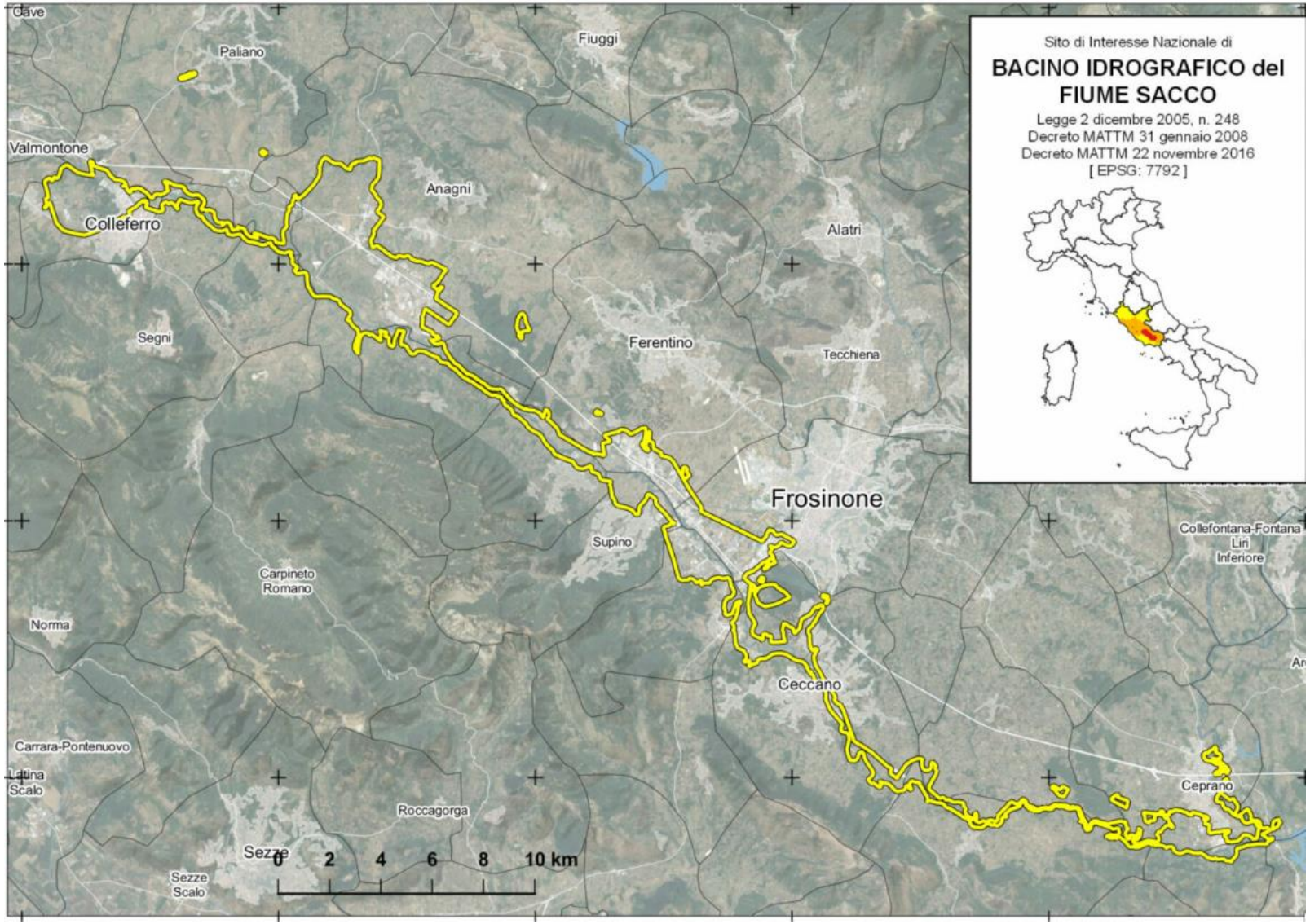
Valle del sacco



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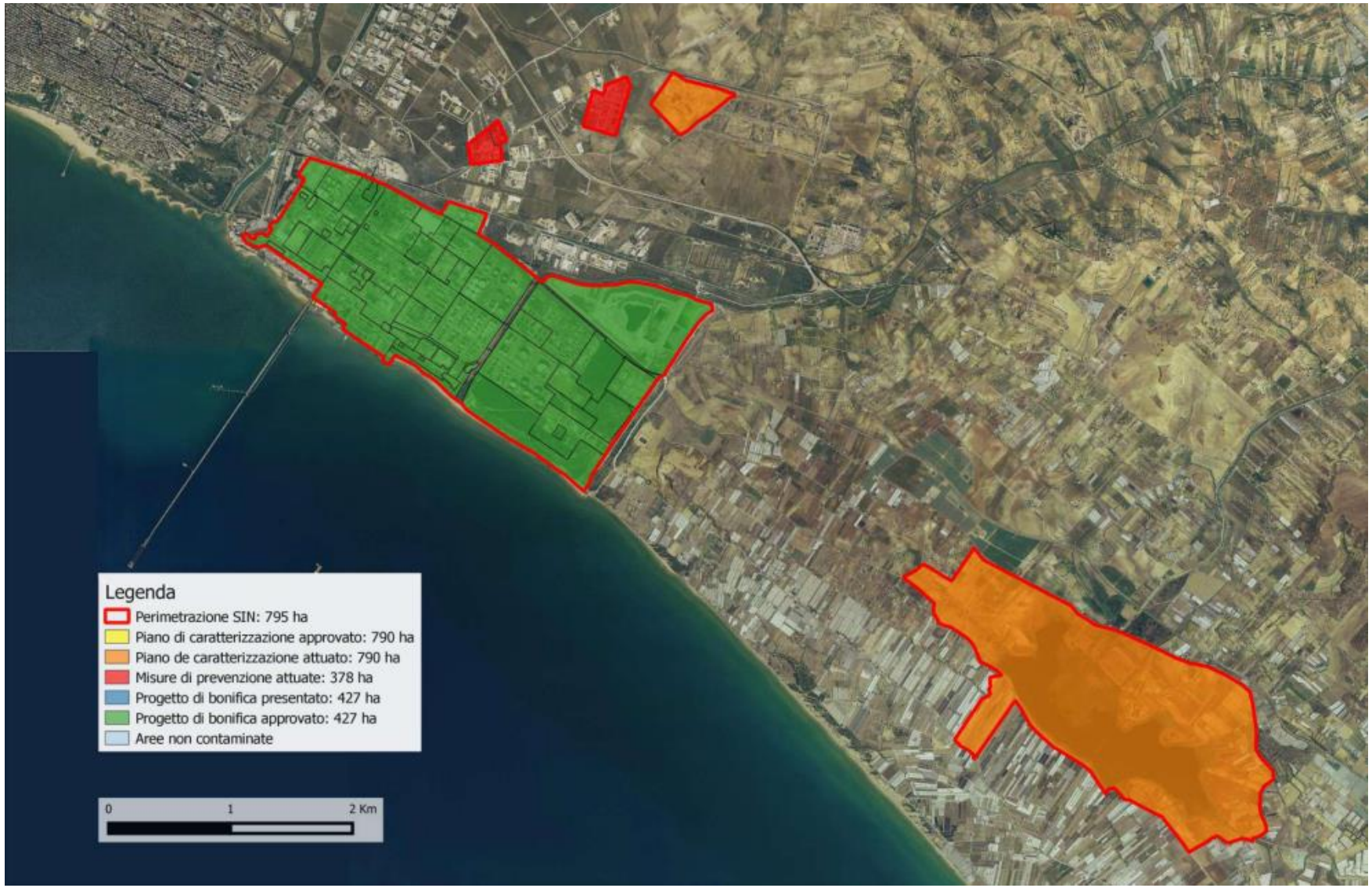
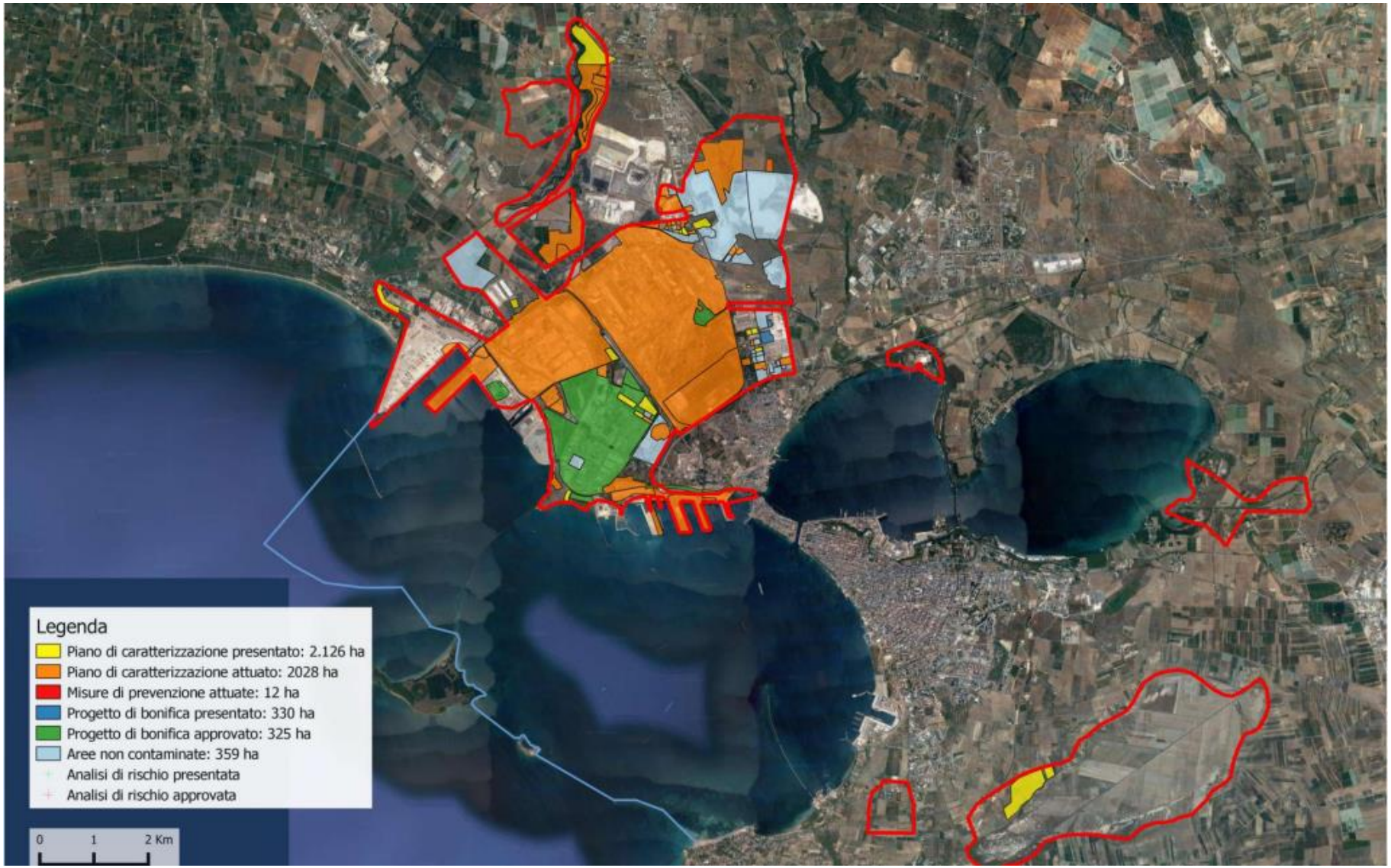
Gela (Sicily), progress of groundwater remediation



Taranto. Progress of remediation work on soil



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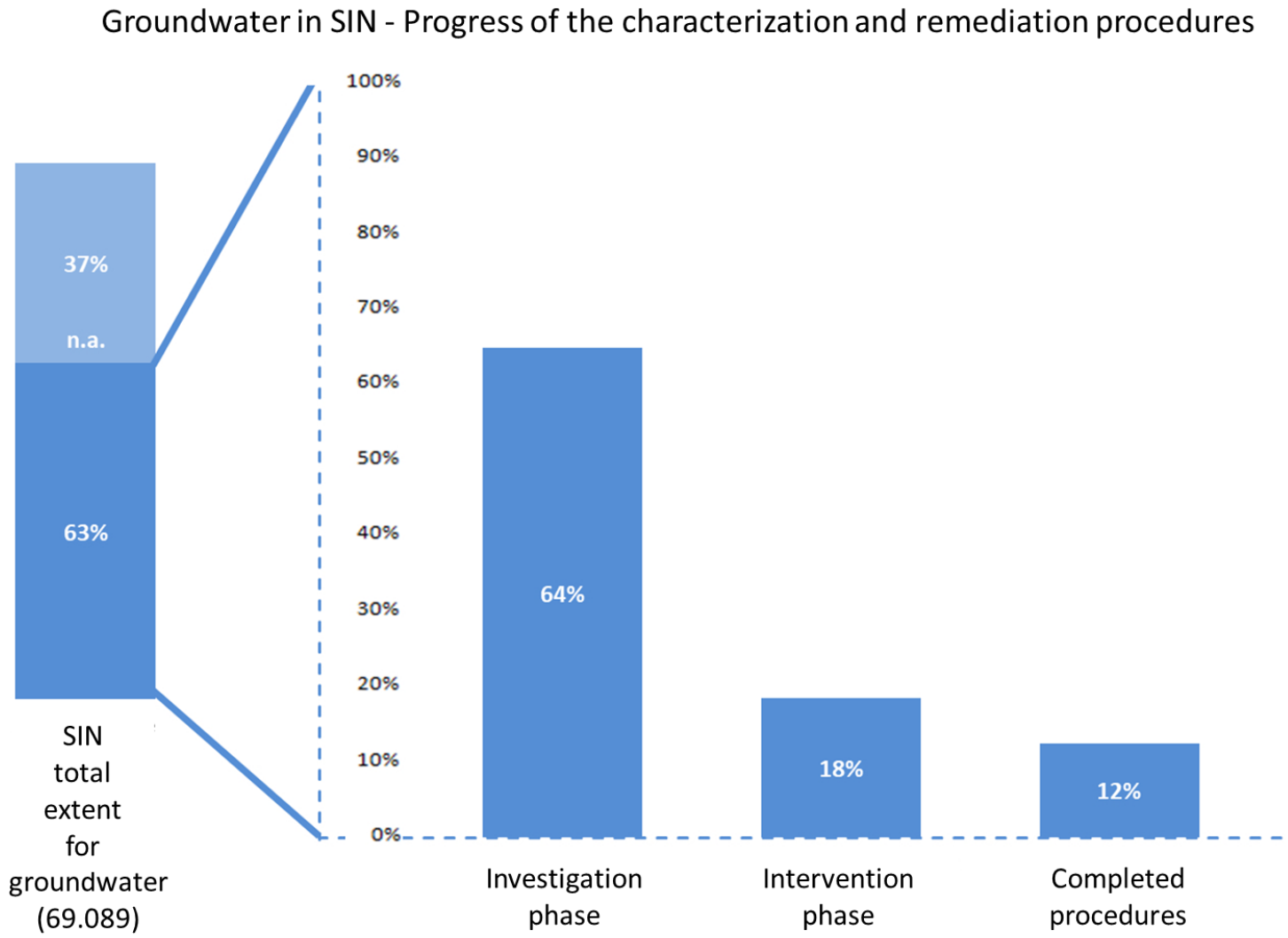
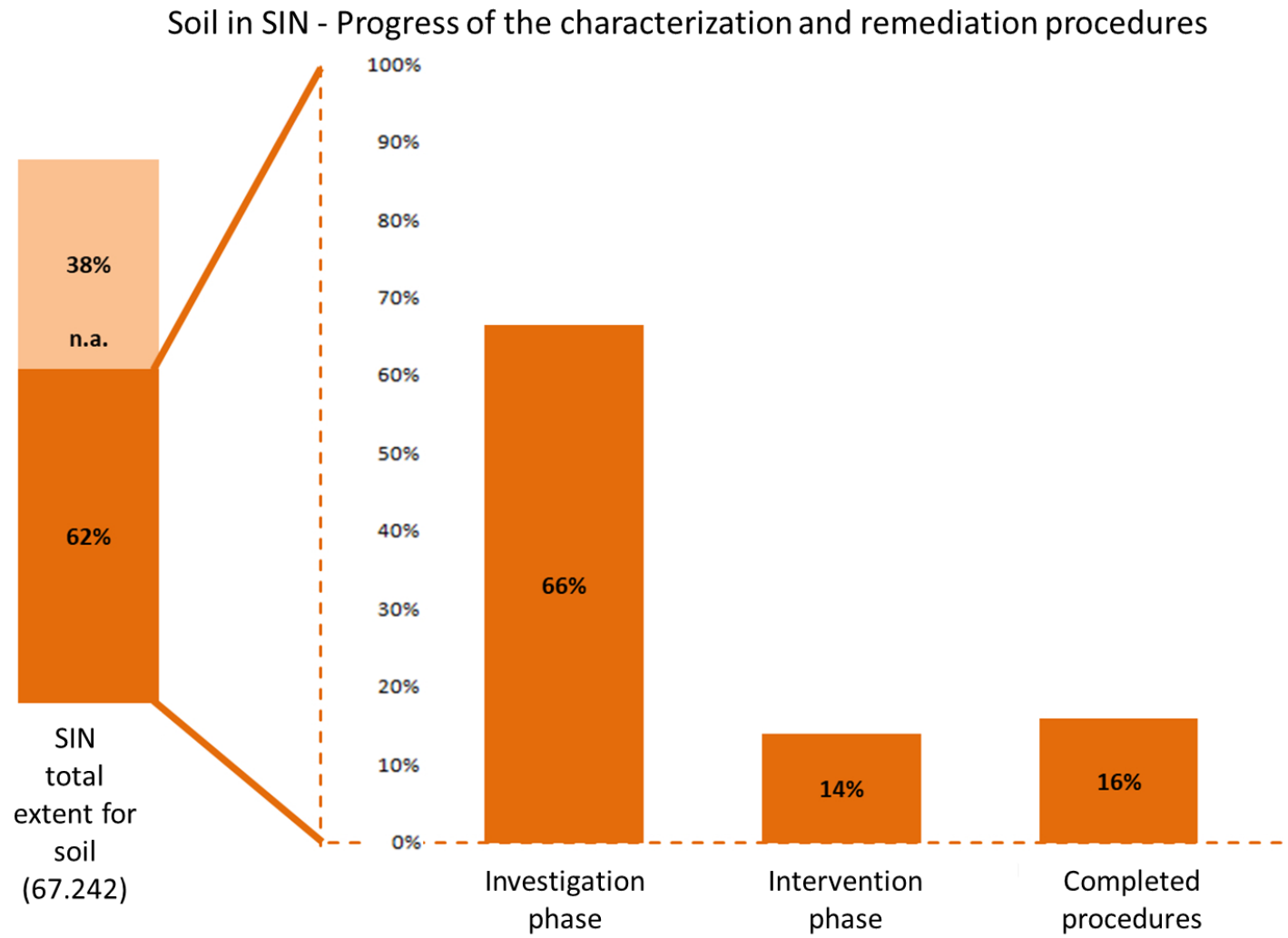
Progress of soil characterization and remediation

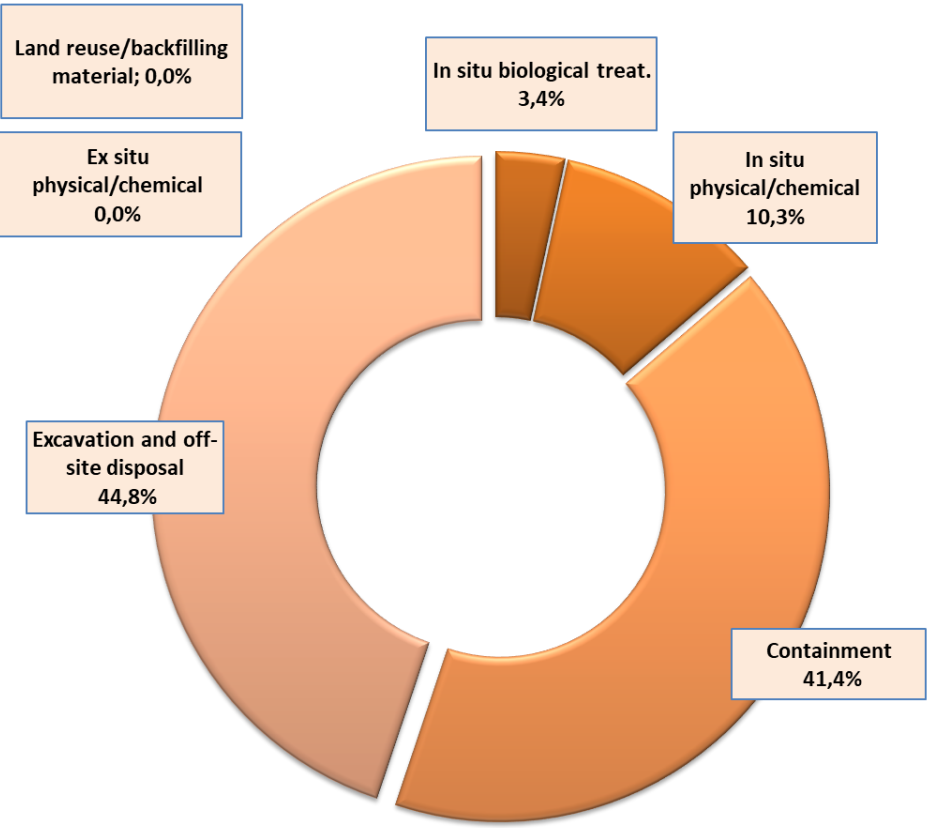


Progress of soil characterization and remediation

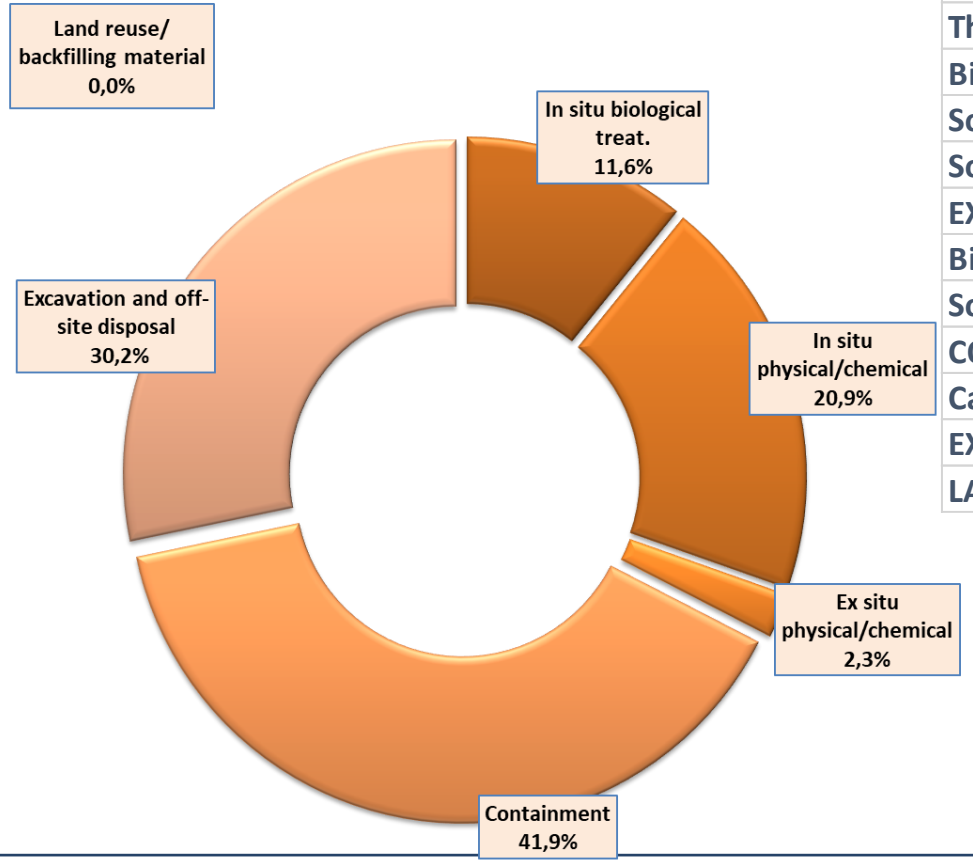


Soil remediation technologies in project documents

Soil remediation technologies
2014

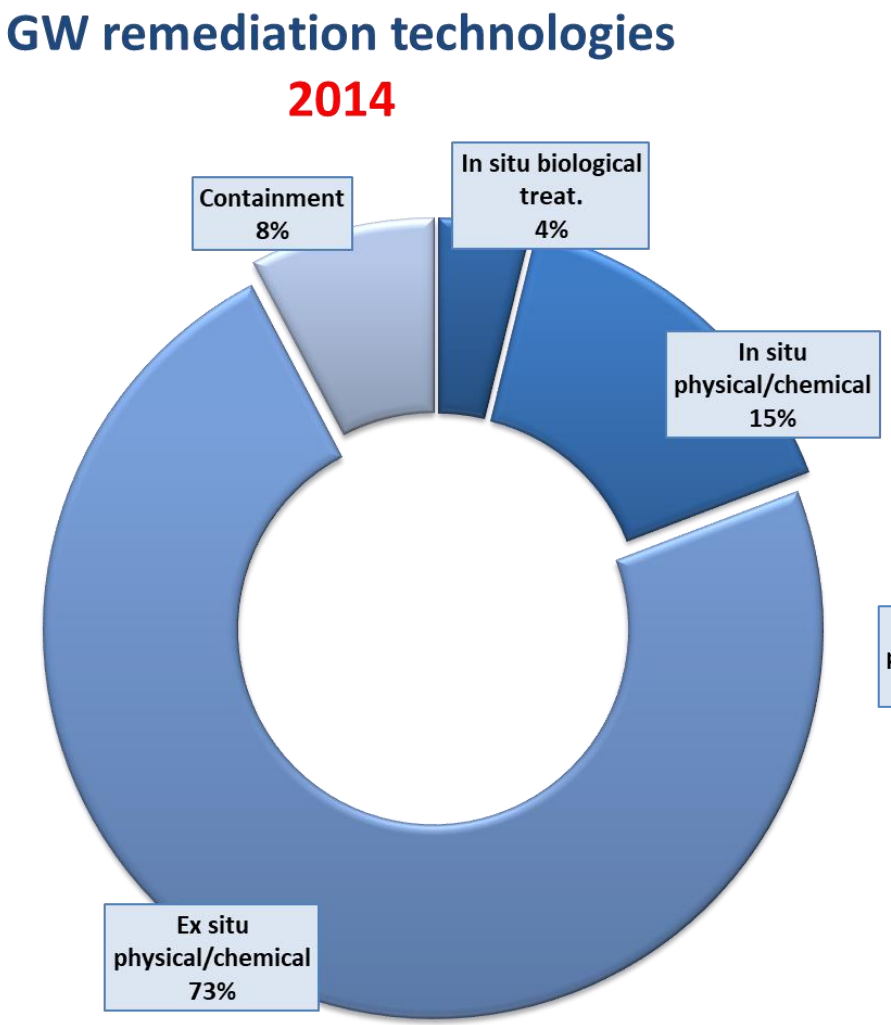


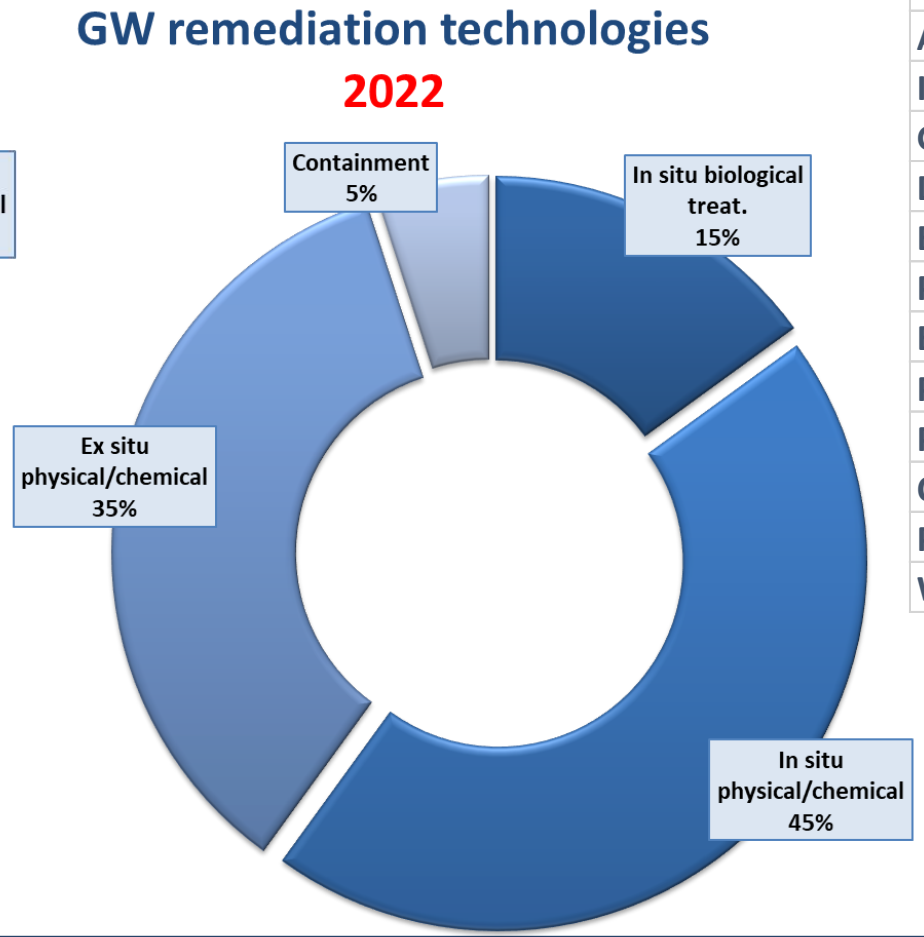
Soil remediation technologies
2022



IN SITU BIOLOGICAL TREATMENT
Bioremediation
Landfarming
Phytoremediation
IN SITU PHYSICAL/CHEMICAL TREATMENT
Solidification/stabilization
Chemical Oxidation/Reduction
Thermal Treatment
Bioventing
Soil vapour extraction
Soil flushing
EX SITU PHYSICAL/CHEMICAL TREATMENT
Bioreactor/biopile
Soil washing
CONTAINMENT
Capping
EXCAVATION AND OFF-SITE DISPOSAL
LAND REUSE

GW remediation technologies in project documents



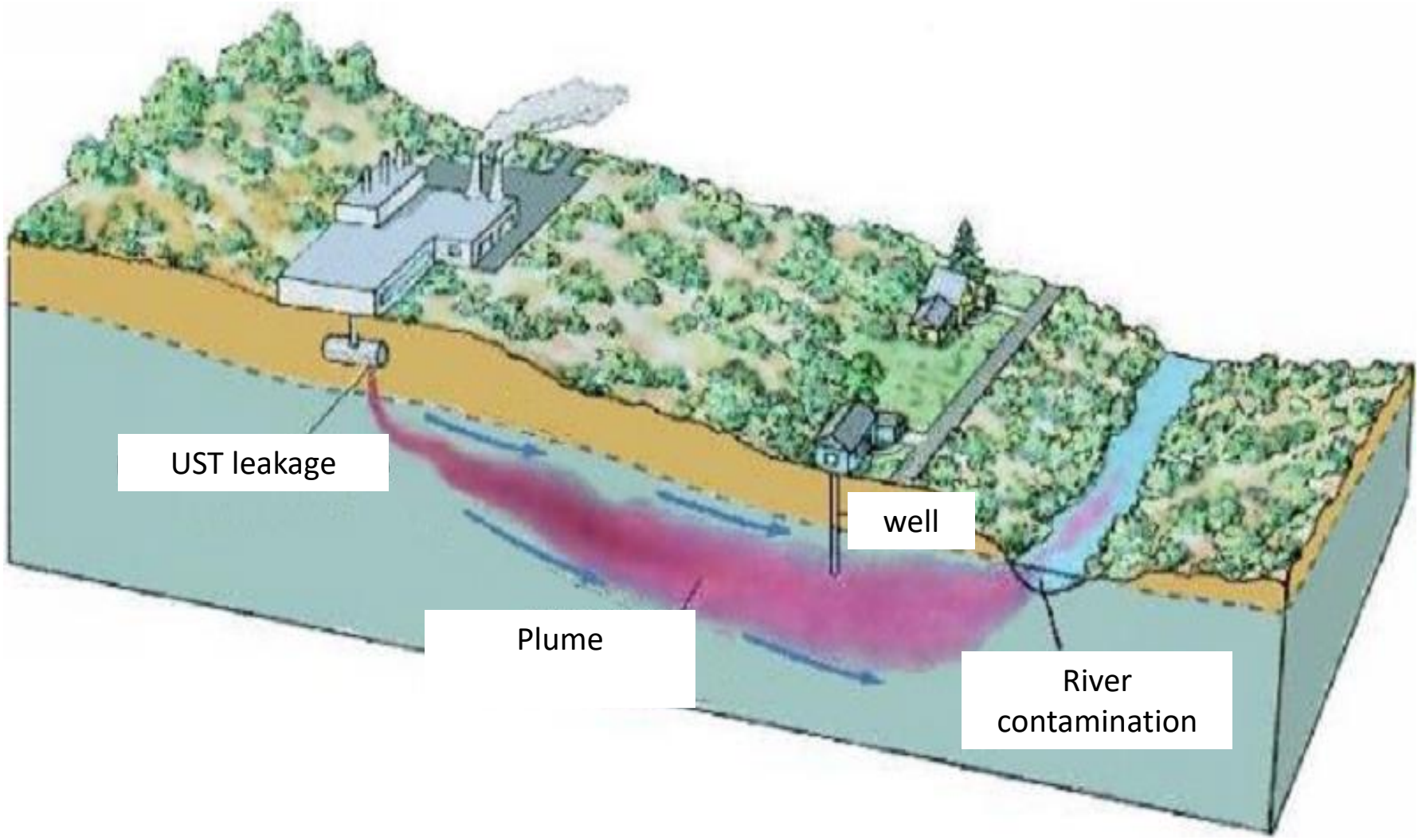


IN SITU BIOLOGICAL TREATMENT
Bioremediation
Monitored Natural Attenuation/ENA
Phytoremediation
IN SITU PHYSICAL/CHEMICAL TREATMENT
Air Sparging
ISCO
Groundwater circulation wells
Dual/Multiphase extraction
EKRT
Passive/reactive treatment walls
EX SITU PHYSICAL/CHEMICAL TREATMENT
Pump&Treat activated carbon
Pump&Treat air stripping
CONTAINMENT
Physical barrier
Well injection

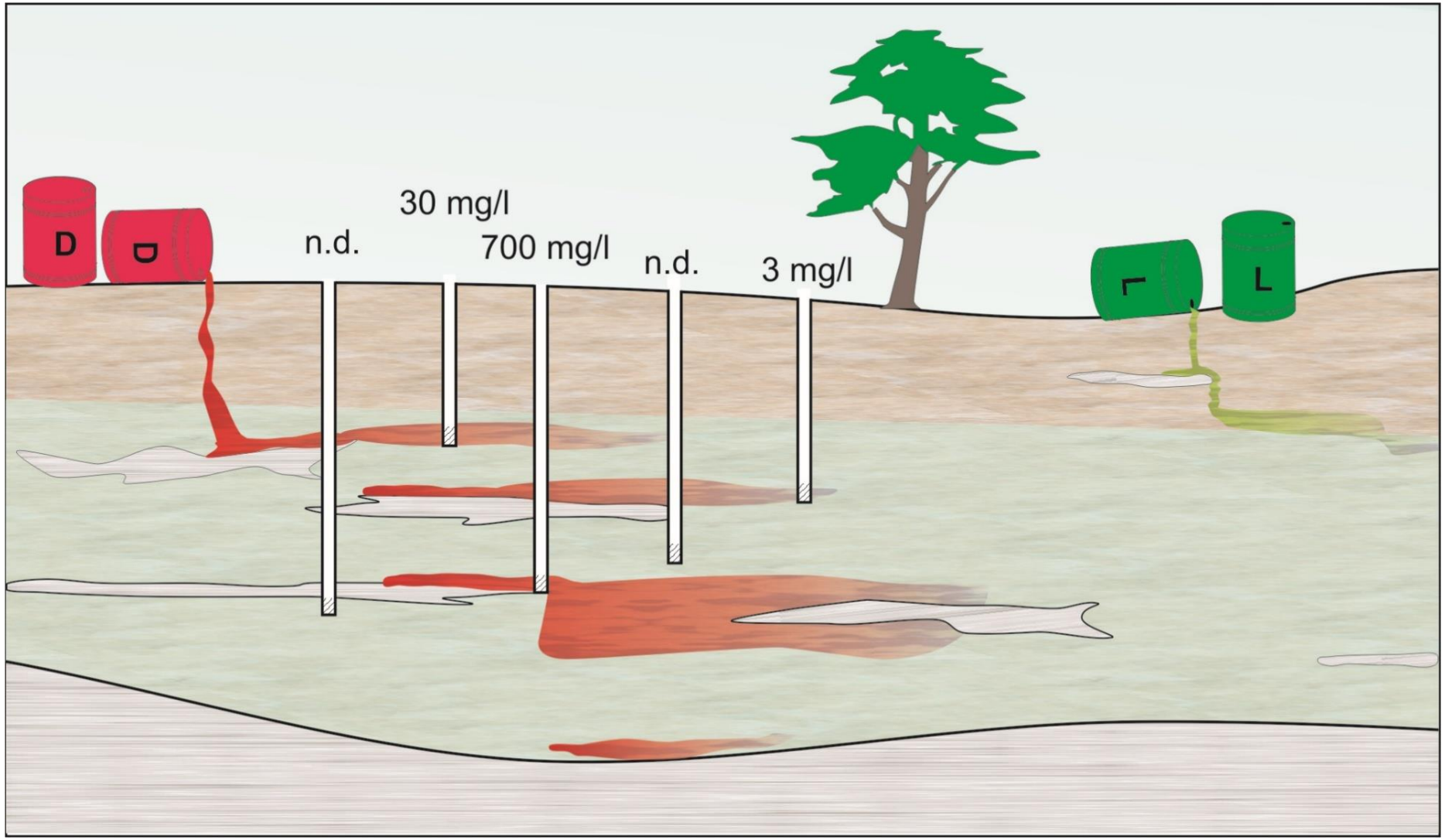
Critical points (our point of view)

- Historical contamination (last century)
- Large presence of backfilling materials (mixed between natural soil and anthropic material)
- Abandoned area, decommissioned area, current industrial activities
- Complicated area with many properties and different contaminants
- changes of ownership,
- Identification of responsible of contamination
- Orphan sites
- Fragmentation of property, fragmentation of work
- Public areas
- Lack of a law on historical contaminations

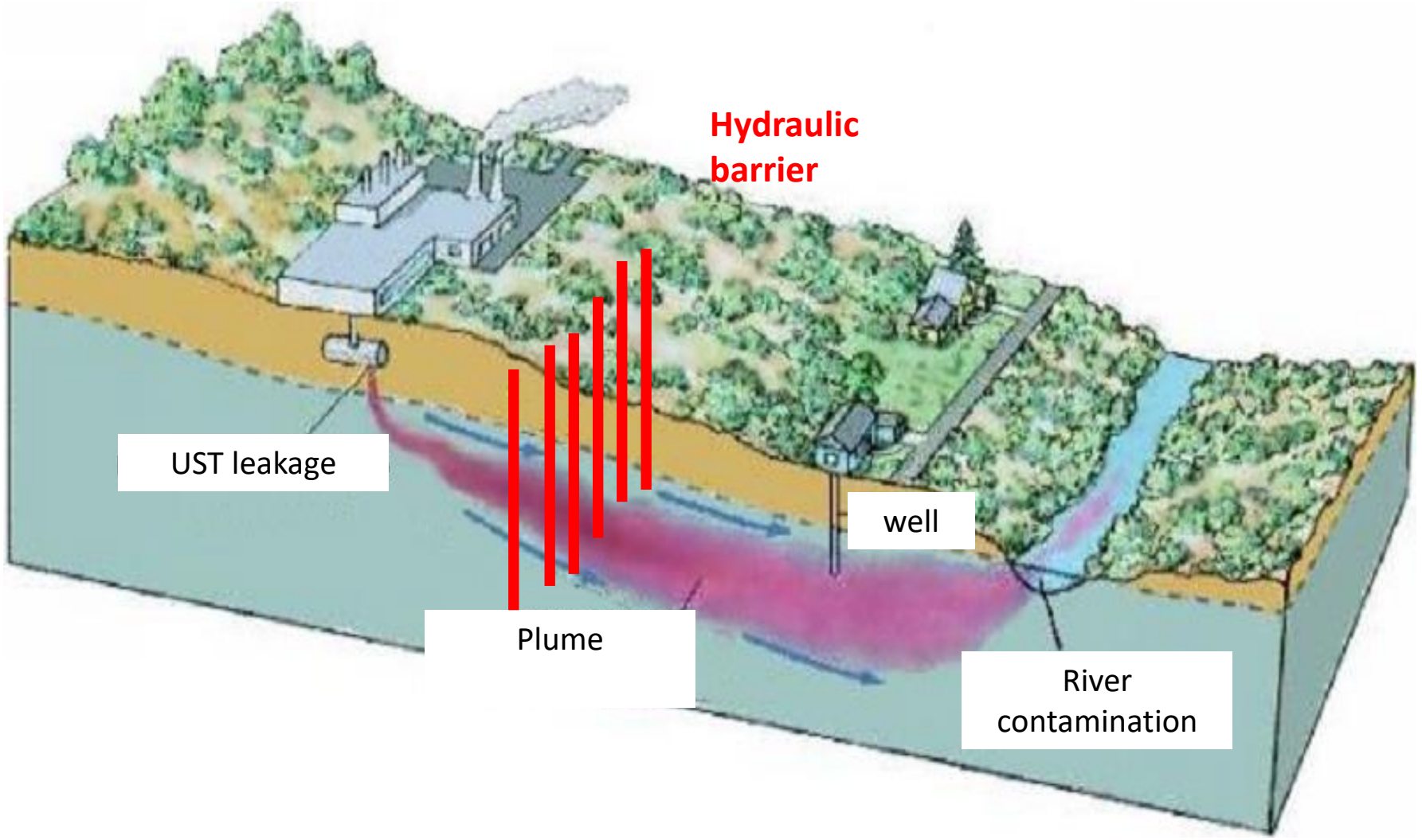
Challenges: the perfect (ideal) conceptual model



Challenges: the realistic conceptual model

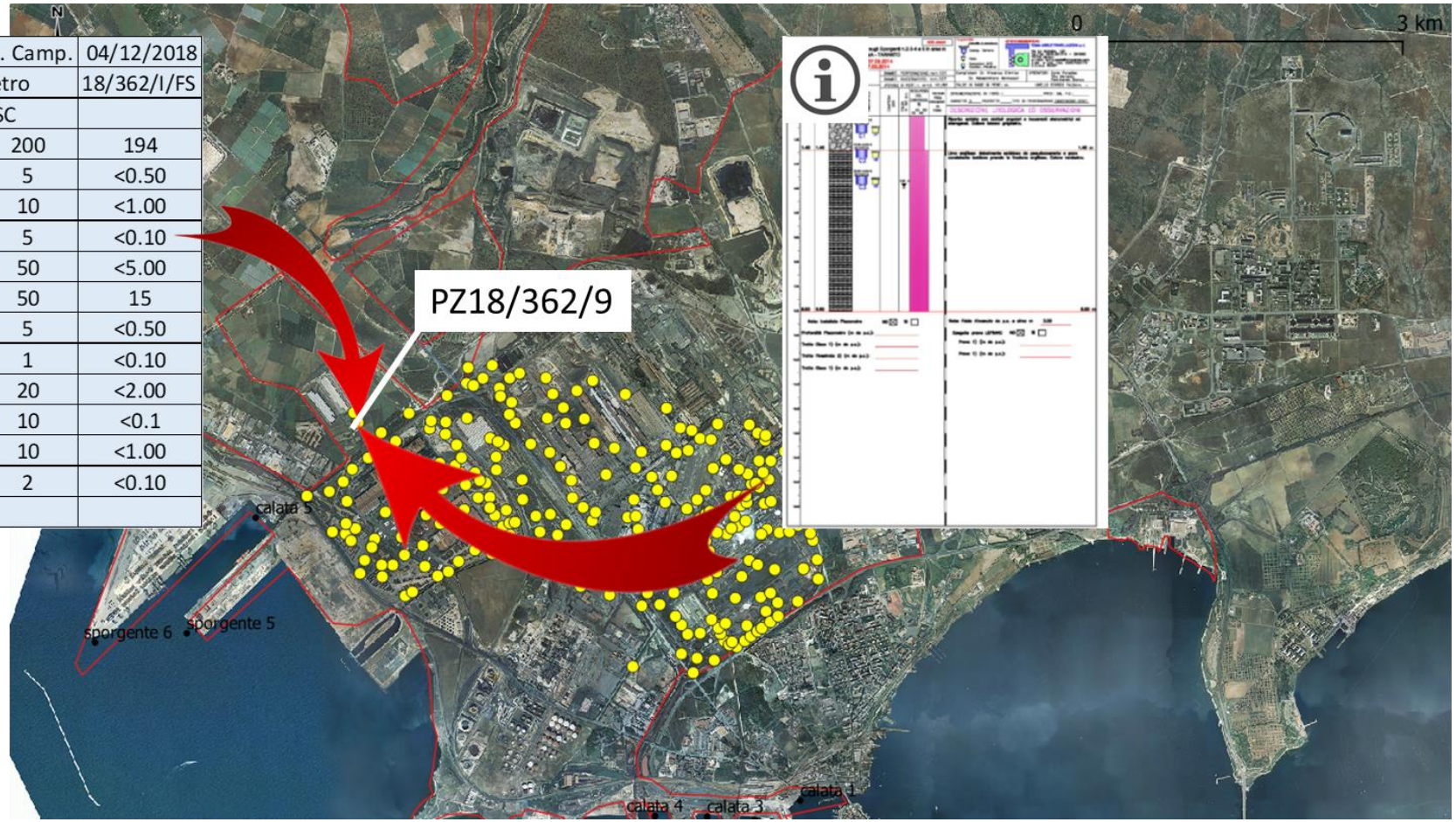


Challenges: confine contamination or remove sources?



Challenges: soil and ground water geografic database

	Data Ins. Camp.		04/12/2018
	Piezometro		18/362/I/FS
	U.M.	CSC	
Alluminio	µg/l	200	194
Antimonio	µg/l	5	<0.50
Arsenico	µg/l	10	<1.00
Cadmio	µg/l	5	<0.10
Cobalto	µg/l	50	<5.00
Cromo totale	µg/l	50	15
Cromo (VI)	µg/l	5	<0.50
Mercurio	µg/l	1	<0.10
Nichel	µg/l	20	<2.00
Piombo	µg/l	10	<0.1
Selenio	µg/l	10	<1.00
Tallio	µg/l	2	<0.10



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https://www.isprambiente.gov.it/it/attivita/suolo-e-territorio/siti-contaminati

THANK YOU

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