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# CONTAMINATED SITES 2018

BANSKÁ BYSTRICA, SLOVAK REPUBLIC, 8 – 10 OCTOBER 2018

*The activity has been implemented within the framework of national project  
**Information and providing advice on improving the quality of environment in Slovakia.**  
The project is cofinanced by Cohesion Fund of the EU under Operational programme Quality of Environment.*

# POSIDON - Polluted Site Decontamination PCP

Dr. eng. Claudia NECULAU

SPAQuE, Belgium

c.neculau@spaque.be

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## THE POSIDON PCP scope and objective

### Objective :

- To steer the development of novel solutions for brownfields decontamination toward the actual needs of the public sector
- To compare and validate alternative solutions approaches from various vendors.

### Scope :

- To develop R&D services only (before commercialization):
  - Solution exploration & design
  - Prototyping
  - Field testing to demonstrate that the product or service is suitable for production.

**R&D does not include commercial development activities**, such as technology production, integration, customisation, incremental adaptations and improvements to existing products or processes



## THE COMMON CHALLENGE

The **common challenge** faced by the POSIDON buyers' group is identifying :

- a new soil (and eventually groundwater) remediation, life-cycle, cost-effective technology,
  - preferred as in-situ (and eventually on-site),
    - to be capable of decontaminating heterogeneous anthropic soils in brownfield,
      - Brownfields composed by a mixture of **industrial waste** (like filling soils highly polluted by Petroleum Hydrocarbons) and **soils** consisting of clays and sands, highly polluted by Petroleum hydrocarbons (TPHs and PAHs), and heavy metals.



## THE BUYERS GROUP

POSIDON PCP project brings together 5 European procurers facing a common challenge related to the sites they manage, affected by similar pollutants.

### 2 front-runners:

Trieste (IT) and Bilbao (ES)

### 3 observers:

SPAQuE (BE), Vitoria Gasteiz (ES), Baja do Tejo (PT)

The aim - to leverage public demand to identify fit-for-purpose and cost effective, innovative and sustainable solutions for soil decontamination.



## BROWNFIELDS DESCRIPTION

### TRIESTE (exEZIT)

Total site surface area = 144Ha,

Test area = 200x200m,

Coord. UGS84 UTM 33 |X: 291964,28 |Y: 4640618,73



Site description: Owned by the Port Authority of Trieste, exEZIT brownfield is located in an industrial area of 144Ha south of Trieste city, in Friuli Venezia Giulia region in Italy. The site is an active industrial area located in the alluvial plane of Ospo River south of Trieste City. From the 1950s to the 1980s a clay transformation industry operated there, and after 1970-80 the site functioned as a disposal for waste from clay mining and furnaces, as well as general waste disposal. The current land use is industrial.

Action Plan – Brownfield development: industrial redevelopment.

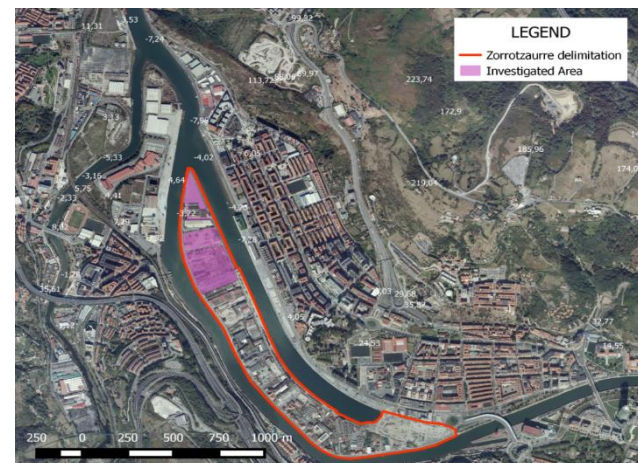


## BILBAO (Zorrotzaurre)

Total site surface area = 49Ha,

Test area = 768x258m ,

Coord. UTM ETRS89 X:502692.383 | Y:4791606.094



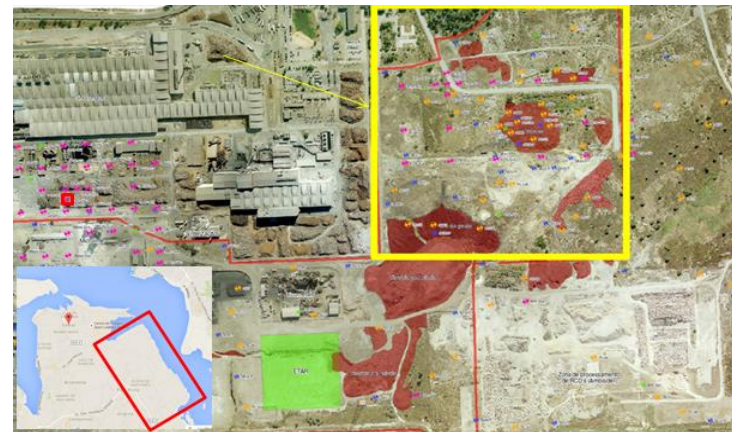
Site description: Zorrotzaurre brownfield is located in the Basque Country region (Spain), and belongs to the Municipality of Bilbao (Bizkaia County). It is a peninsula of 49 Ha and comprises a densely industrialized area north of Bilbao. The historical Industrial activities carried out on the site include the following: steel working, timber processing, shipping and machine construction, etc. since the beginning of the 20th century. The site is very fragmented, with more than 300 different private and public owners. The current use is industrial and residential.

Action Plan – Brownfield development: the Urban Plan zones the land for a mixture of industrial, residential, public and green areas.



## LISBON (Seixal)

Total site surface area = 32Ha ,  
Test area =580x550m ,  
Coord. PT-TM06/ETRS89| X:-82423,90363 |Y:-114047,7535



Site description: Seixal brownfield is located in the town of Paio Pires, Setubal, Lisbon (Portugal). The site is part of a 532 Ha former industrial complex of Siderurgia Nacional (steel-making plant). The site is owned by 7 private owners and 3 public owners. The test area has not a defined use and a future industrial use is foresight.

Action Plan – Brownfield development: future Installation of lighter industrial activities and logistic activities, attracting sustainable activities and private businesses to the site.





## VITORIA-GASTEIZ (Jundiz)

Total site surface area = 23 Ha,  
Test area = 1.230 m x 220 m ,  
Coord. UTM ETRS89 X: 520.281 | Y:4.742.461



Site description: Jundiz brownfield is located in the Basque Country region (Spain) and belongs to the Municipality of Vitoria-Gasteiz (Araba County). Jundiz, although originally planned as green area, is degraded by uncontrolled fillings, dumping and abandonment. Formerly agricultural land it was used as a landfill during the 80's and 90's for dirt and excavation debris during the highway and industrial area development. In time, many heterogeneous illegal dumping has been deposited over this landfill (0,5 m average) including construction and demolition residues.

Action Plan – Brownfield development: restoration for green area (public park).





## LIEGE (Wallonia)

Site description: in Wallonia region there are many partially polluted sites with similar characteristics (situated in an extended residential area for renovation), most of them owned by SPAQUE. They are considered as historical pollution resulting from disposal of waste from coal mining industries (forming the coal mining slag) and residues from iron works.

Action Plan – Brownfield development: residential according to the urban planning area.



SITE	exEZIT TRIESTE	Zorrotzaurre BILBAO	Seixal LISBON	Jundiz VITORIA
Main environmental issues	Petroleum hydrocarbon affectation to soils and groundwater, mainly PAHs and TPHs.	Deposits of Piriyte transformation ashes (containing Arsenic), and punctual oil spills. Polluted soils and groundwater.	"Buraco"landfill spot (coal tars). Polluted soils and groundwater.	Landfill with heterogeneous dumpings.
Geology and soil profile	Antropic layer between 3-9m thick, over a natural soil composed by clays and sands interbedded of 4-10m thick. Rocky substrate formed by flysch type marls and sandstones.	Antropic layer between 0,3-2,5m depth over a natural soil composed by clays, silts, and occasional sands interbedded over basal gravels up to 19-22m deep. Rocky substrate formed by flysch type massive marls and occasional sandstone.	Antropic layer up to 6m thick over a natural soil composed by 10-15m clays and sandy clays interbedded. Rocky substrate formed by sandstones.	Antropic layer between 0,5-5 m thick, over a natural soil composed by clay marls. Rocky substrate formed by marls.
Main pollutants	TPHs, PAHs and Heavy metals (As, Pb, Cd, Hg, Cu, Zn)	Heavy metals (As, Pb), PAHs, TPHs, PCBs	PAHs, TPHs and Heavy metals	PAHs, TPHs, PCBs and Heavy metals (As, Pb),

In Wallonia region there are many different sites with similar characteristics.



## HOW TO JOIN US! (DEMAND SIDE)

POSIDON continues its work :

- for inclusion of potential public authorities as procurers,
- stimulating the public demand aggregation processes

in order to prepare for the future cross-joint border PPI, which is the implementation of decontamination on site.

Demande-side call for interest will be published in January 2019



## HOW TO JOIN US! (SUPPLY SIDE)

### OPEN MEET-THE-MARKET EVENTS:

7 th of June 2018 in Area Science Park, Trieste (Italy)

21st of June 2018 in Bilbao City Council, Bilbao (Spain)

25th of September 2018 in Brussels (Belgium)

### QUESTIONNAIRE

to collect relevant information and feedback from the market about the scope of POSIDON and the technology state of the art.





**POSIDON**  
POLLUTED SITE DECONTAMINATION PCP

**CONTACT DETAILS:**

Claudia Neculau

0032 471 90 44 68

[c.neculau@spaque.be](mailto:c.neculau@spaque.be)

[www.posidonproject.eu](http://www.posidonproject.eu)

Partners



Sara Berlin - Competence Center on Innovation



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