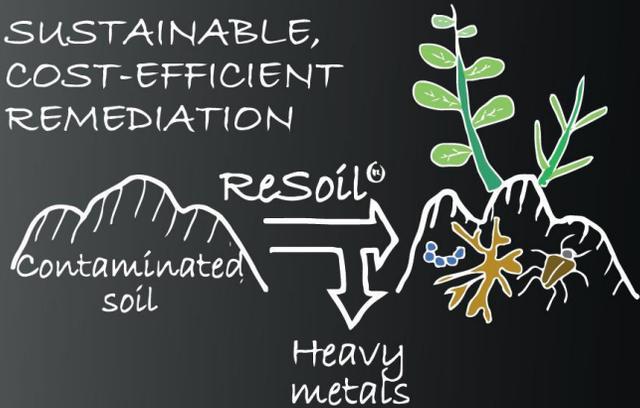


# ReSoil<sup>®</sup>

by **envit**

SUSTAINABLE,  
COST-EFFICIENT  
REMEDATION



- **Agricultural soil**
- **Urban soil**
- **Paddy fields**
- **Brownfields**
- **Military polygons**
- **Excavated & disposed soil**

**Toxic metals such as Pb, Zn, Cd, Cu, Mn, Cr and the metalloids As and Sb (heavy metals) are the predominant soil contaminants and pose a serious health risk to humans and ecosystems and affect food security.**

**ReSoil<sup>®</sup>** is a novel and innovative remediation solution developed by **Envit Ltd.** that enables the removal of heavy metals from contaminated soils in a closed cycle through an emission-free process without wastewater, while preserving the soil as a natural substrate.



- **ReSoil®** is batch, **closed-loop process** with a soil remediation cycle of < **1.5** hours.
- The soil is washed, **sand** and **fine soil components** (< 300 µm) are separated and then **rinsed 4x** with recycled process solutions to remove EDTA and heavy metals from the soil.
- Solid-liquid ratio 1 : 1-1.5 (w/V)
- **EDTA and process solutions are recovered** in a pH gradient of 12.5 – 2 given by CaO and H<sub>2</sub>SO<sub>4</sub>.
- **No wastewater** is produced.
- **New water** is only required to equalise the moisture in the remediated soil and for lime hydration.
- The process solutions are **further purified** by filtering them through the washed soil in the filter press.

### International patents

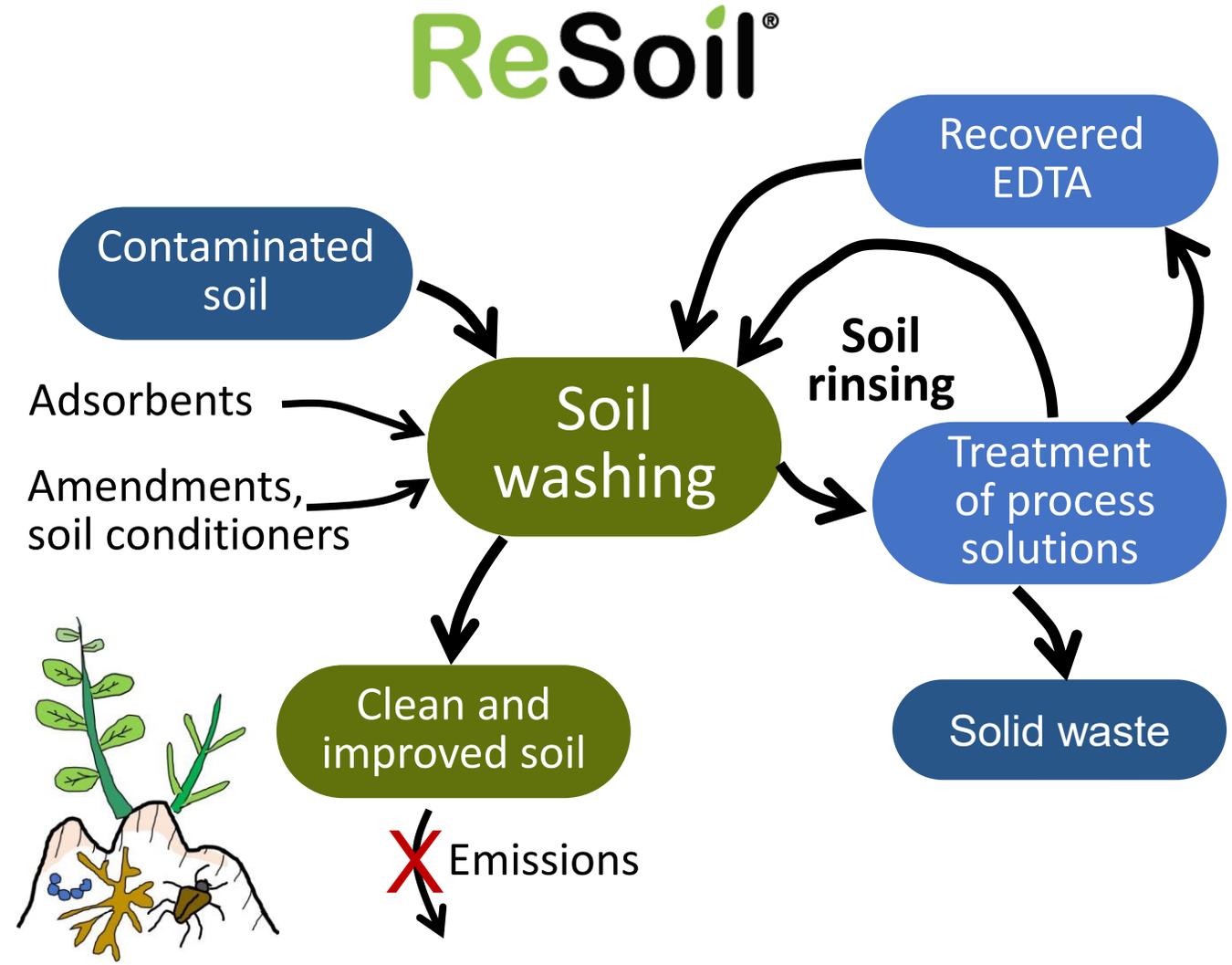
EP 2720812B1 (2019), Washing of contaminated soil. Patent family: US 9108233B2, CA 2871879C, WO 2012173576A2

EP 3153246B1 (2018), Method for soil and sediment remediation. Patent family: US 10124378B2, CN 107096789B, CA 2942367A1

EP 3492187B1 (2021), Curbing toxic emissions from contaminated substrate. Patent family: US 10751771B2, CN109877149A, CA 3026163A1

**EP4301529B1 (2025) Removal of arsenic, antimony and toxic metals from contaminated substrate.** (Grade AAA, Patent Valuation Report, KIPA 2025-06-20)

**ReSoil®** features in **17 papers** in high-ranking sci. journals.



**Soil remediation (heavy metal removal, immobilization) and soil improvement.**

# ReSoil<sup>®</sup> SCALE-UP



## TRL 1

Basic technology research, 50 g/batch.



Capacity:  
5 kg / batch.



## TRL 2-3



Prove of the concept,  
technology development.



## TRL 4-5



Capacity:  
50 kg / batch.

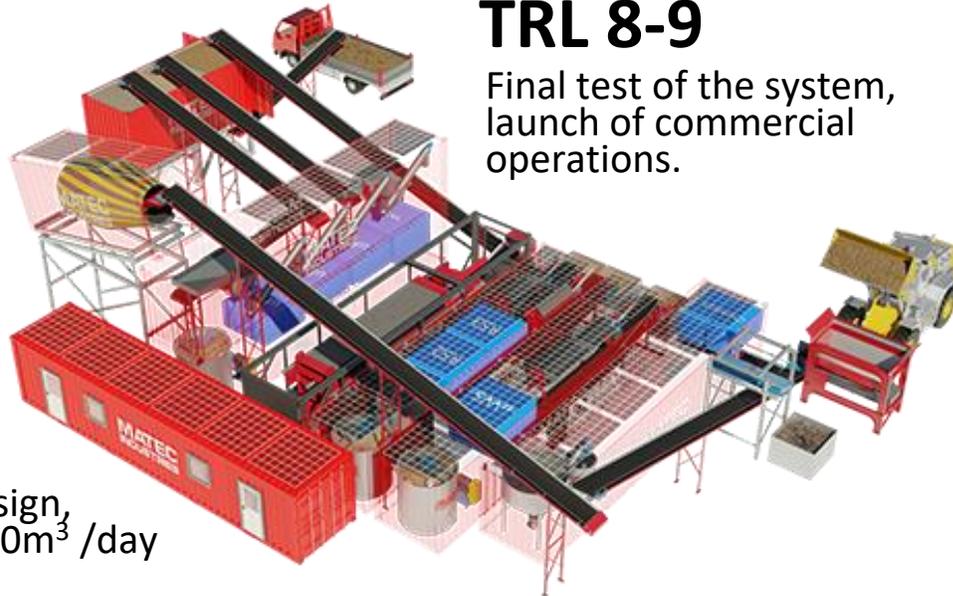
## TRL 6-7

Capacity:  
1500 kg / batch



## TRL 8-9

Final test of the system,  
launch of commercial operations.



Concept design,  
capacity > 50m<sup>3</sup> /day

# ReSoil® STUDY CASES

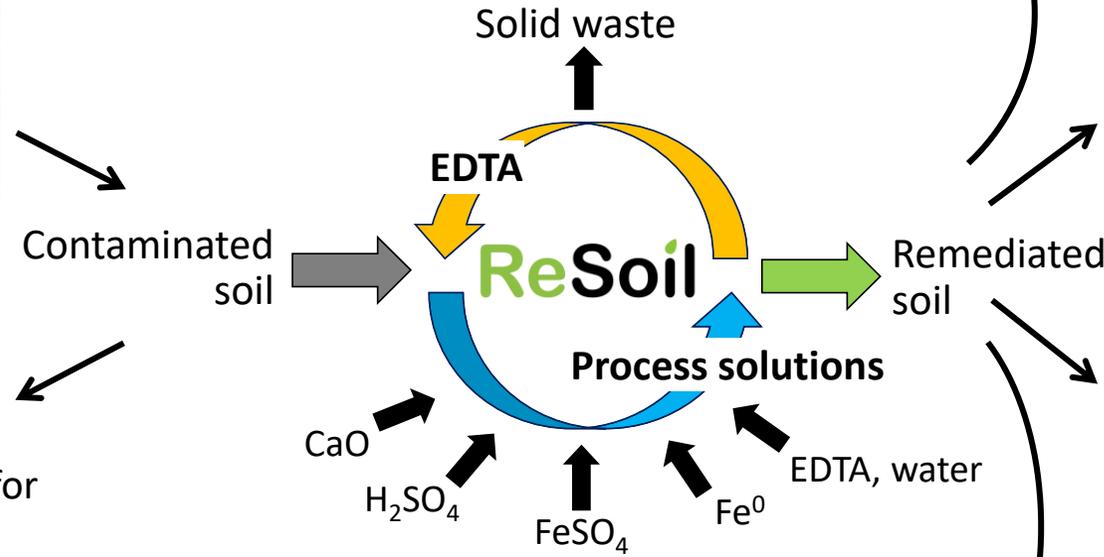


Treatment of different soil types.

Removal of up to:  
 95% of lead  
 98% of zinc  
 83% of cadmium  
 75% of copper  
 85% of manganese  
 72% of chromium  
 65% of arsenic  
 58% of antimony



The heavy metal concentrations in the leachate from the remediated soil are insignificant.



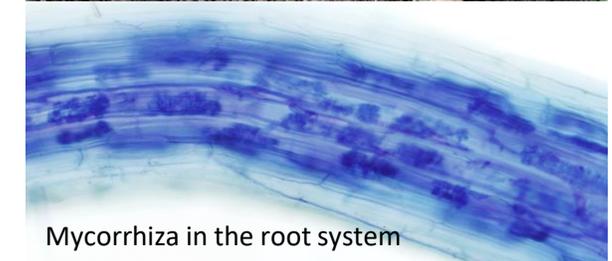
The chemical, physical and biological properties of the soil are preserved.

Restoration of soil for different land uses:

- Urbanisation/development
- Recreational use / training
- Agriculture
- Other ecosystem services, e.g. C sequestration



Plant growth is not impaired, the heavy metal concentration in the plants is reduced by up to 99%.



Mycorrhiza in the root system

# REMEDIATION OPTIONS for soils contaminated with heavy metals

AVAILABLE TECHNOLOGIES	In use by	Effective for heavy metal removal	Applicable for highly contaminated soil	Applicable for all soil types	Applicable for multi-contaminated soil	Preserves soil (Green & sustainable)	NO problematic emissions	Cost for end customer (€/m <sup>3</sup> )
Soil dig & dump	Construction companies	YES	YES	YES	YES	NO	Soil deposition	100 – 700
Engineered solutions (soil capping)	Construction companies	YES	YES	YES	YES	NO	Leaching	30 – 200
Solidification & Stabilization	Construction companies	NO	YES	NO	YES	NO	YES but difficult to achieve	40 – 100
Classical soil washing (removal of fines)	Remediation companies	YES (up to 80%)	YES, optionally	Only for light and sandy soils	YES	NO	Deposition of contaminated fines	50 – 150
Immobilization by various additives	Remediation companies	NO (reduces Bio-metal accessibility)	NO	Difficult for rich, heavy soils	Theoretically	YES	YES	20 – 60 + repeatable periodical cost
Phytoremediation	Remediation companies	Not efficient for Pb, As, Cu.	NO	YES	NO	YES	Contaminated biomass	?
<b>ReSoil®</b>	Remediation companies	<b>YES (up to 95%)</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>70 – 150</b>

- Of the commercially available technologies listed above, **ReSoil®** is the only one that efficiently removes toxic metals and metalloids from the soil, is environmentally friendly and sustainable, and maintains and improves the soil as a functional natural substrate.
- **ReSoil®** is compatible with biological treatments for the removal of **organic pollutants**.
- **ReSoil®** is **cost-effective**, it recycles efficient but **expensive EDTA** with **low-cost materials** (lime / Fe<sup>2+</sup>, sulfuric acid).

# Envit FACILITIES – from feasibility studies to on-site soil remediation

## ReSoil® laboratory

Capacity:  
50 g / batch.

Purpose:  
To test soil samples (0.5 kg) sent to Envit Ltd. for heavy metal removal efficacy.



## ReSoil® mobile pilot plant

Capacity:  
50 kg / batch.

Purpose:  
• R&D: removal of heavy metals and organic pollutants, soil remediation and improvement etc.  
• Teaching and training in ReSoil® technology.



## ReSoil® trailer

Capacity:  
5 kg / batch.

Purpose:  
• On-site presentation of ReSoil® technology.  
• Feasibility tests.



## ReSoil® mobile commercial plant

Capacity:  
>50 m<sup>3</sup> soil /day

Purpose:  
Commercial soil remediation on-site.

Concept design





Domen  
Leštan, CEO & CTO



Neža  
Finžgar



Anela  
Kaurin



Simon  
Gluhar



Grega E.  
Voglar



- **Envit Ltd.** is a deep-tech R&D SME, a spin-off from the University of Ljubljana, Slovenia.
- The core team of five, all with PhDs, has **experience in science, technology and project management.**
- **The CEO and CTO** is a highly respected **engineer with experience in business development**, recognised by ScholarGPS™ as one of the top 0.05% of scientists worldwide for academic excellence. [www.scholargps.com](http://www.scholargps.com)

## WHAT WE NEED: Partners for growth

We are looking for **business partners** to commercialize our innovative soil remediation technology **ReSoil®**.

**Pilot opportunities available:** Explore pilot projects to directly implement **ReSoil®**, validating its efficacy in real-world applications.

**Partner with us:** Engage in transformative partnerships to co-develop other sustainable environmental solutions based on the **ReSoil®** process.