

Momentum for change: Fast-tracking Iceland's contaminated land practices

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Today's conversation

- Our background and different perspectives
- Erla's arrival in Iceland in late 2019
- Kristín's arrival in Iceland at the end of 2020
- Previous and current status of the contaminated land industry in Iceland
- Future vision for the contaminated land industry in Iceland

Who are we and why are we here?

Erla Guðrún – consultant



Environmental geochemist PhD, Macquarie University in Sydney, Australia



Academic and consultant in Australia 2008-2019



Moved from Australia to Iceland in 2019



Lead contaminated land consultant at Verkís Consulting Engineers, Iceland



FUMÍS, chairperson

Kristín - authority



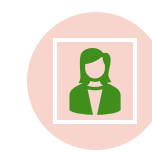
MSc Chemistry and MSc Environmental inspections, Lunds University, Sweden



Environment compliance Inspector in Sweden 2011-2020



Moved from Sweden to Iceland in 2020



Enforcement and guidance at Environment and Energy Agency, Iceland



FUMÍS, treasury

Together we work towards better contaminated land practices

What was the situation like when Erla moved to Iceland?

Lack of:

- Statutory requirements for professional work processes
- Enforcement of regulations that were in place
 - Building regulation
- Availability of Icelandic guideline values
 - No soil guideline values until December 2020
 - Some guideline values available for surface water and drinking water
- Access to remediation options
- Available equipment & facilities
 - Fieldwork
 - No photoionisation detectors (PID) nor water quality meters
 - No appropriate soil drilling equipment
 - Sampling jars/containers
 - Laboratory analyses
 - No certified laboratories for contaminated soil or water
 - No soil remediation/management facilities

Australia:

Part of a large specialised team



Icelandic reality

I was the “team”





Sample jars...

What was the situation when Kristín moved to Iceland?

- Limited legislation
- Limited knowledge at the agency
- Limited knowledge at the local health authorities
- Few consultants with knowledge on contaminated land
- No background levels for Icelandic soil
- No systematic registration of contaminated sites
- No governmental funding

Before 2020

Investigations

- Instruction manual from 1998 for petroleum hydrocarbon contamination
 - Visual and odour detection

Remediations

- Landfarming
- Dig and dump
- Biopiles
- PCB soil contamination from former activity by the US navy. Excavated and sent to Germany for incineration

Laws and regulations



1998 - Act on hygiene and pollution prevention



2011 - Water framework directive



2012 - Environmental liability law
"polluter pays principle"

Not retroactive



2020 - Regulation on contaminated soil

2026 – amendment, new maximum guideline values for soil

We have already made significant progress over the past 6-7 years



How have investigations and remediations evolved 2019-2026?

- New guidelines developed and published
- Database for contaminated land in Iceland
- Waste reception facilities
 - Improved enforcement of regulatory requirements, e.g. in terms of conducting leaching tests on soils prior to disposal
 - Following a non-conformity regarding hazardous waste from oil-water separators, contaminated soil was sometimes classified as hazardous waste.
 - SORPA landfill facility, has recently provided guidance on acceptance criteria for contaminated soils
- Stakeholders have better understanding of requirements, the investigation process and the value of following these

Guidelines



2023
Preliminary
assessment of
contaminated land.



2023 (2026)
Guideline values for
contaminated soil



2024
Re-use of waste in
backfills.



2025
Registration of waste
sites.



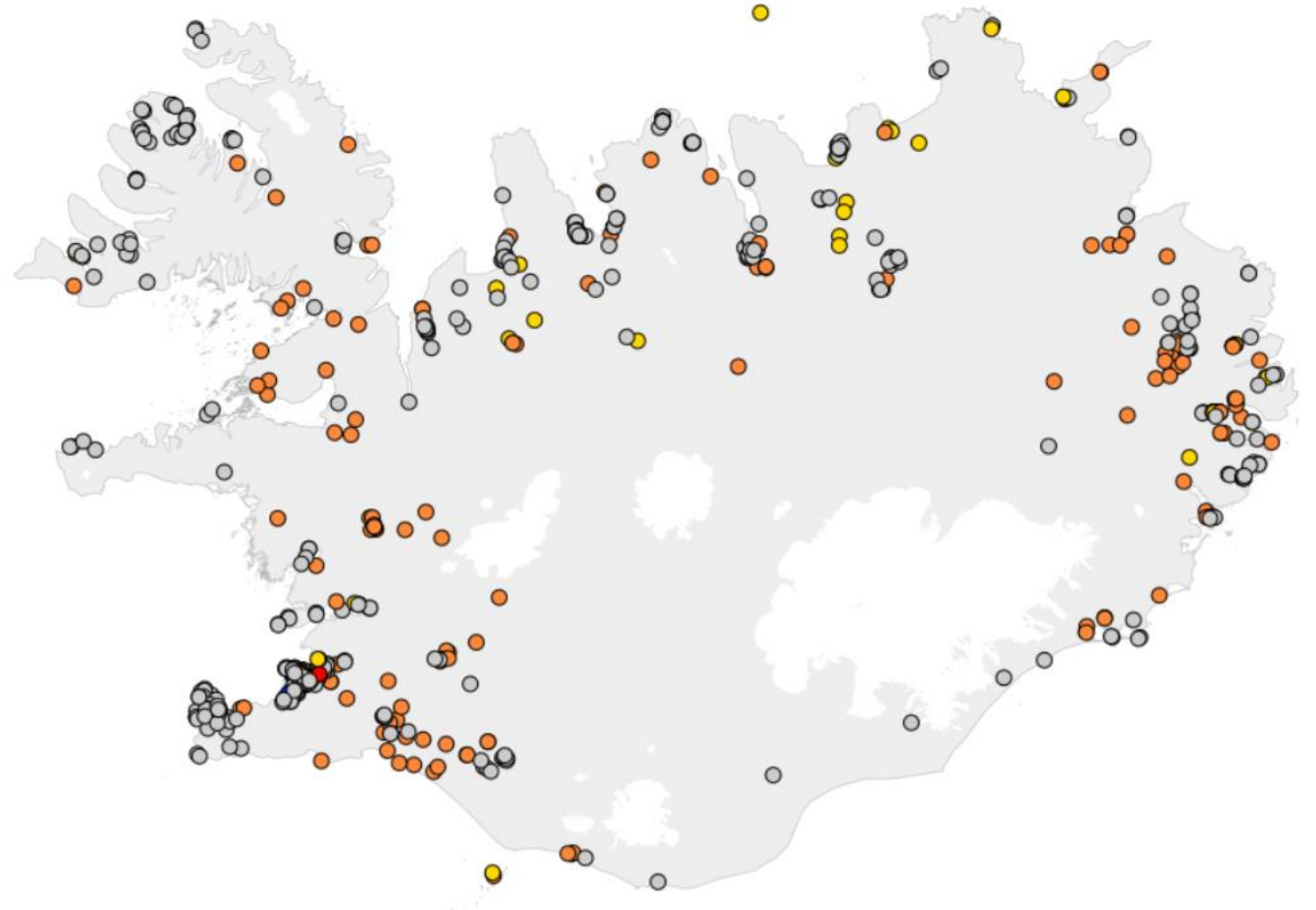
2025
Contaminated land
investigations



2026
Remediation of
contaminated soil

Contaminated sites in Iceland

Risk category	Description	No. of sites
Category 1: Very high risk	Significant contamination Requirement for risk assessment Often need for remediation measures.	5
Category 2: High risk	Requirement for risk assessment	159
Category 3: Moderate risk	Requirement for risk assessment is determined on a case-by- case basis.	58
Category 4: Low risk	No action required	1
Not categorised		512



Verkís consultant's work

- We are now a contaminated land team of 6 professionals
- Main clients and projects:
 - Local Councils
 - Airports
 - Former military activities
 - Petrol Stations
 - Energy providers



- Outreach – professional engagement and knowledge sharing activities:
 - Educating clients
 - Collaborating with health and environmental authorities
 - University lecturing

Remediation efforts

- Soil vapor extraction and biodegradation
- Landfarming
- Dig and dump
- Remediation handbooks for clients



Future potential remediation services in Iceland



BIOPILE REMEDIATION CENTRE 2027



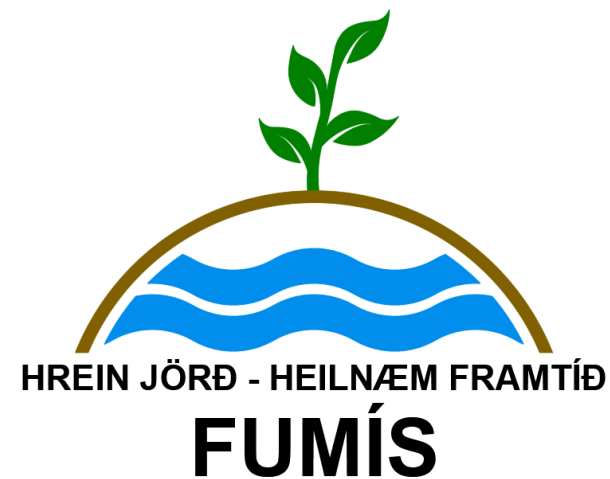
SOIL WASH PLANT ENVISIONED 2028



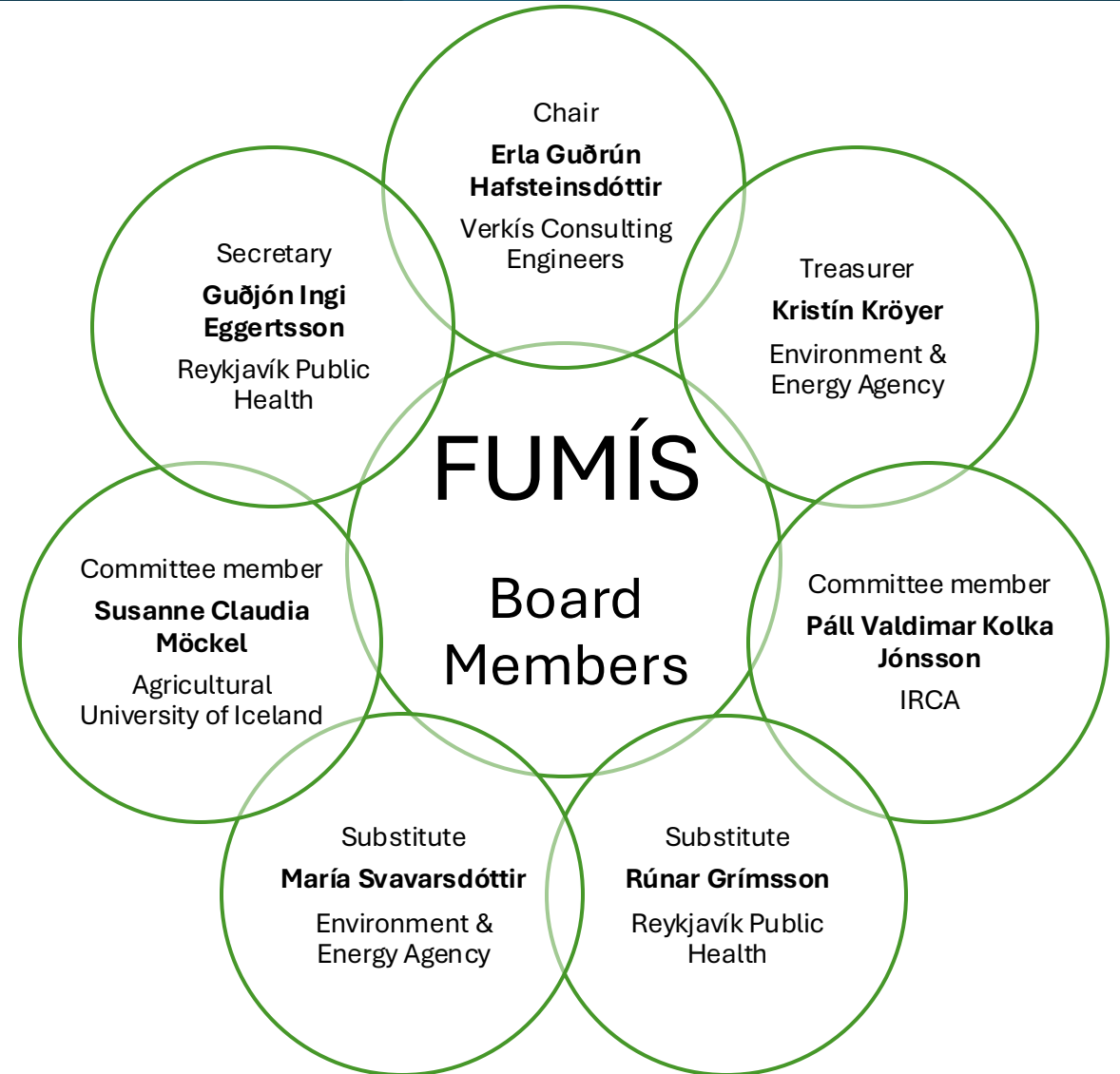
OTHER POTENTIAL SOIL REMEDIATION
CENTRES ON THE CARDS

FUMÍS

Professional association on
Contaminated Land in Iceland



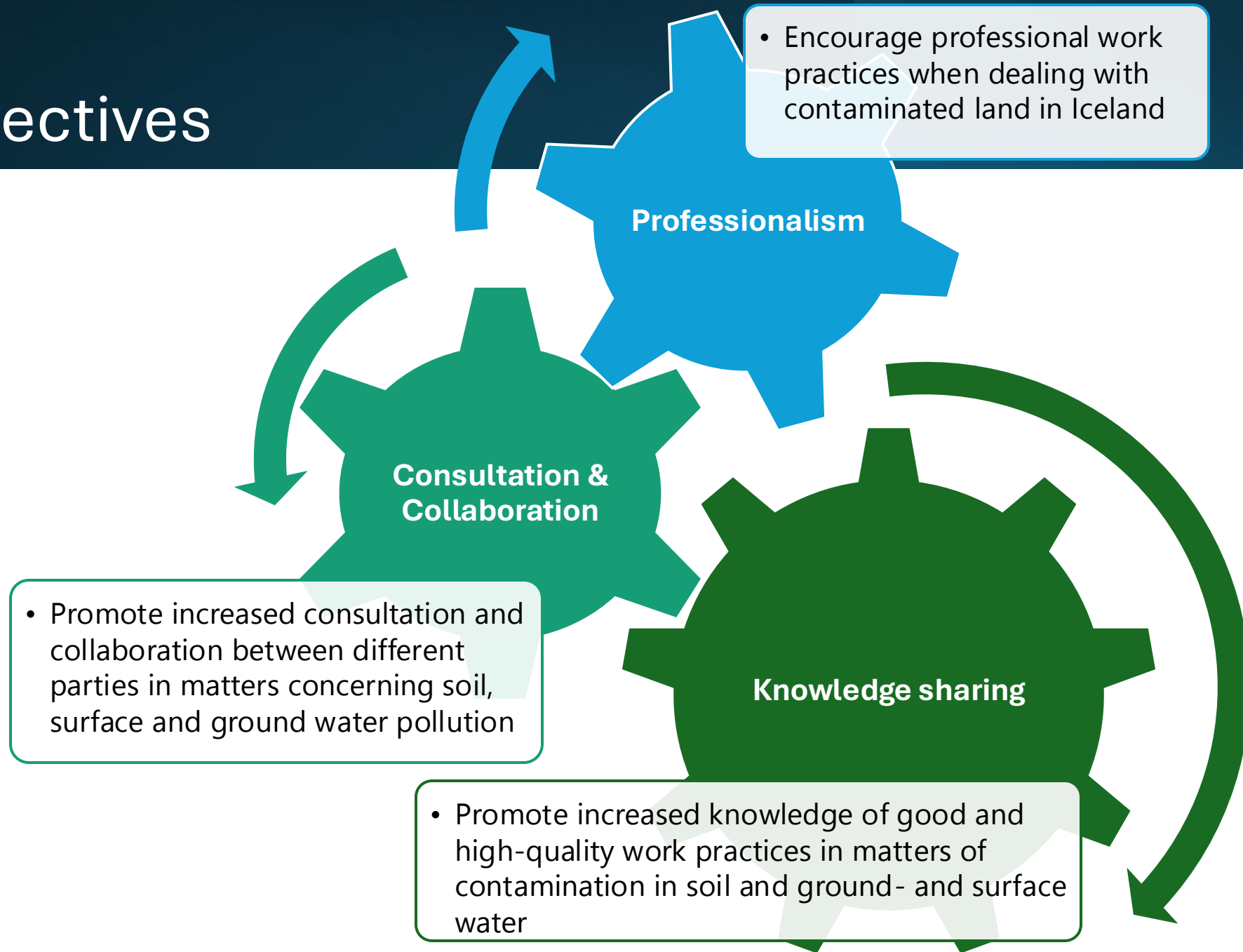
Who are we?



First steps...

- Kristín and Erla had had the idea for some time
- FUMÍS emerged from conversations with colleagues
- In March 2023, at Verkís' seminar on soil contamination, the decision was made to meet up and start drafting our idea for the association
- Founded on 12 February 2024
- FUMÍS is a professional association where individuals are members, but the sponsors of the association are the companies and institutions that the board members work for

FUMÍS objectives



FUMÍS achievements to date

Collaboration

NORDROCS organising committee members 2025-

The Union of Natural Scientist in Iceland (FÍN Félag íslenskra náttúrufræðinga) 2026-

Universities

- University of Iceland
- Agricultural University of Iceland

Webinars, Courses, Seminars

- Eurofins
- ALS
- NGI
- Norconsult
- Liljemark Consulting
- The Natural History Museum of Kópavogur

FUMÍS achievements to date

Knowledge sharing



Seminars

Land-Use Planning, Public Health and Environmental Pollution

What Is Soil Contamination? Wednesday Lecture Series with The Natural History Museum of Kópavogur

Soil, Groundwater and Surface Water Contamination



Courses

Fundamentals of Sampling, October 2024: 48 individuals

September 2026: 11 individuals registered

Conceptual Site Model, October 2025: 30 individuals

Investigations and remediations of petroleum contaminated sites, January 2026: 35 individuals



What does the future look like for the contaminated land industry in Iceland?

- Icelandic Environment and Energy Agency is in the process of making a commitment to clean up oil contaminated soil:
 - 19,500 tonnes by 2032
 - 69,500 tonnes by 2037
- New guidelines for investigations, remediation methods etc.
- Soil monitoring law – probably won't be implemented in Iceland, too big of a package
- Iceland's focus in terms of environmental issues has been mainly on climate change and sustainability. Now our soil's health and quality is getting the attention it deserves
- **Our Vision:**

More funding towards contaminated land investigations for areas that have been classified as level 1 and 2 in the database at www.mengun.is

Take home message:

Collaboration and knowledge sharing are fundamental for creating momentum for change and enabling Iceland's contaminated land practices to catch up with international best practices



Thank you!

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