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Reykjavík, 8. júlí 2022  
UST202205-055/P.V.B.  
09.05.01

**Subject: permit to conduct research in Kerlingarfjöll and Reykjanes country park**

The Environment Agency of Iceland has received an application from Claire Cousins at University of St Andrews, dated May 4<sup>th</sup> 2022, for a research permit within Kerlingarfjöll and Reykjanes country park.

Kerlingarfjöll is protected as an area of landscape, cf. Regulation no. 822/2020. Disturbance to geological formations, landscape, hot springs, other springs and ecosystems in hot springs in the protected area is prohibited. Permission must be obtained from the Environment Agency of Iceland for organized events and projects that need facilities, labour force or use of equipment within the protected area such as filming, at events and ceremonies. Research other than those conducted by the Icelandic Institute of Natural History and The Cultural Heritage Agency of Iceland is subjected to a permit from the Environment Agency.

Reykjanes country park is protected cf. regulation 520/1975. Disturbance to geological formations is prohibited.

***Description of the project:***

The aim of this project is to investigate the geomicrobiology and biosignatures of Mars-analogue hydrothermal environments and microorganisms and is part of a PhD project. Microbial biomass, water and sediment will be sampled from accessible hot spring streams and geothermal pools, collecting the minimum required for analyses. Sampling will take place on pathed areas to access environments and avoid treading on undisturbed ground. There is no need to go off paths. In Kerlingarfjöll 10 x 20 grams or ml of microbial biomass, 20 x samples of sediment (< 50g), and 20 x water (30 ml) samples will be collected. In Krysuvík 10 x 20 grams or ml of microbial biomass, 20 x samples of sediment (< 50g), and 20 x water (30 ml) will be collected. Non-destructive techniques will be used to collect measurements of pH, temperature, sulphide, dissolved oxygen, and Eh. Number of employees is 2 persons and sampling will take place in the period of July 19<sup>th</sup> -August 2<sup>nd</sup> 2022.

***Impact assessment:***

The Environment Agency of Iceland considers the project not likely to have negative impact on the sites if conditions of the permits are fulfilled.

***Conclusions and conditions:***

The Environment Agency of Iceland hereby grants Claire Cousins at University of St Andrews permission on its behalf to conduct research within Kerlingarfjöll and Reykjanes country park as described above on July 19<sup>th</sup> -August 2<sup>nd</sup> 2022 on the following conditions:

- Keep this letter with you on site during the project. The permit conditions should be introduced to the staff of the project before work begins.
- The applicant shall inform rangers in the area about their arrival and departure. This is to be done 24 hours before entering the area and again before leaving it.
- If the project dates or description changes the Environment Agency shall be notified as soon as possible.
- The crew must follow rules of conduct that apply to the area.
- If any complications occur during the project, please contact the ranger or the Environment Agency of Iceland, tel. +354 591 2000.
- This permit is only valid for research purposes. It does not include permit to utilize the samples for commercial purposes. The samples cannot be signed over to third party for commercial use.
- Every measure should be taken to avoid damage to the sites and unnecessary disturbance while collecting samples.
- Samples should be collected where any resulting disturbance to soil, vegetation or geological formations is not visible to other visitors.
- All participants in the project must wear high-visibility clothing during field work, labelled with the identity of the researcher or the research institute.
- Off-road driving in Iceland is strictly prohibited.
- The project's staff is required to prevent all disturbance to the environment and make sure that all litter is removed from the sites.
- The project members should stay on marked paths the whole time.

If the developer causes damage to nature, according to art. 87 in the Nature Conservation Act no. 60/2013, the Environment Agency of Iceland can, according to the Nature Conservation Act, f.e. order the licensee to fix damage to nature and vegetation and/or stop the project.

The Environment Agency of Iceland can according to art. 89 in the Nature Conservation Act no. 60/2013 change conditions of the permit, add new conditions or withdraw the permit in order to prevent damage to nature if environmental conditions change.

According to art 89. in the Nature Conservation Act no. 60/2013 the Environment Agency can withdraw the permit if conditions of the permit are not complied to.

A permission from the landowners and/or the municipality might be needed for the project.

Permit from the National Energy Authority is needed for researches in geothermal areas ([www.os.is](http://www.os.is)).

If you wish to export samples from Iceland a special permit is needed from the Icelandic Institute of Natural History ([www.ni.is](http://www.ni.is)).

The Environment Agency of Iceland wishes to receive, free of charge, a copy of all reports and scientific articles that result from the research project.

***Supervision:***

The Environment Agency will supervise the project. The supervisor will be a ranger from the Environment Agency.

Sincerely

Valdimar Kristjánsson  
*advisor*

Þórdís Vilhelmína Bragadóttir  
*advisor*