Lab Journal: analysis of an Atlantic clay sediment sample near the Canary Islands

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I. INTRODUCTION

First, we shall discuss the points we are to research before starting our research plan. In literature, we shall attempt to find:

1. the precipitation rate for this portion of the Atlantic, to determine the time resolution in our sample;
2. perturbation of the ocean floor through natural or human mechanisms;
3. concentration of microplastics, as an indication of the increase in nanoplastic concentration;
4. amounts of detritus, and whether this would contaminate the measurement;
5. protocols for extraction of the plastics from the clay.

From this, we shall construct a protocol for our measurements and from there, we shall find the tools we may need to acquire.
In general we split these into three categories: items 1 and 2 (to be researched by Joost) describe the context of the samples, items 3 and 4 (to be researched by Has) describe the contaminants, and item 5 (to be researched by Eva) describes the practical steps to be taken.

I.i. Question Answers

I.i.1.

I.i.2.

I.i.3.

I.i.4.

I.i.5. Existing Protocols

There exists research on the filtration, dialysis, and ultrafiltration retention rates using polystyrene nanospheres between 1000 and 50 nm.[1]

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[1] Albignac, M., Maria, E., De Oliveira, T., Roux, C., Goudouneche, D., Mingotaud, A. F., Bordeau, G., & ter Halle, A. (2023). *Assessment of nanoplastic extraction from natural samples for quantification purposes.* Environmental Nanotechnology, Monitoring & Management, 20. https://doi.org/10.1016/j.enmm.2023.100862