

Chemical Oceanography/Environmental Chemistry Data Guidance Document

Environmental/marine chemistry datasets come in a variety of forms. Some are measurements of particulates, dissolved organic carbon, proteins, polycyclic aromatic hydrocarbons, trace metals, nutrients, gasses, anions like sulfides, radioactivity, proteins and other biomolecules in the water column and sediments. This document aims to provide guidance on what information is required for a successful submission to GRIIDC.

Measurements

- Provide all raw data (spectra, areas, peak heights, etc.), calibration data, and final measurements in files that are accessible to the general public (text, XML, excel, etc.). GRIIDC aims to preserve all of the original data from instruments used.
- Submission of final measurements are acceptable if data can only be assessed and interpreted through proprietary software.
- Provide all replicates or a standard deviation/error when an average is provided.
- Ensure that all headers have units where applicable, and all acronyms and abbreviations are explained.

Quality Controls

Provide all quality controls involved in measurements that are typically reported, such as use of certified standard materials which may include standards used for calibration; second source verification; recovery of certified reference materials; measurements of blanks; detection limits of instruments; and measurements of precision, such as relative standard deviation.

Instrumentation

- Provide the name of the manufacturer and model of all major instrumentation used, such as all forms of mass spectrometry and accompanying detectors; spectrometers; high-performance liquid chromatography (HPLC); elemental analyzers; sonde, etc.
- Specify the mode of analysis or setting if it is required to obtain the data.
- GRIIDC does not require reporting on basic lab equipment, such as mass balances, shakers, ovens, heat incubators, and refrigerators.

Methods

Provide a brief description of the methods used in each experiment. For example:

- Means of sample collection and preservation (e.g. storage on ice, flash freezing, filtration, acidification, storage in the dark, etc.)
- Methods of metal or organic compound extraction from soil and/or water.

- Protocols for making WAF, CEWAF, etc.
- Provide the name of the method used (e.g. EPA method 1631) if an established protocol for any procedure was used.
 - Briefly paraphrase the method and provide a reference if a protocol was used from a publication.
 - Provide the name of the manufacturer and model if a commercial kit was used.

Laboratory based experiments, microcosms, and mesocosms

- Provide all essential details regarding experiments, such as the total volume of container; volume and type of medium (e.g. minimal medium; artificial seawater; natural seawater, etc.); temperature of incubation; exposure to night/day cycles; concentration of contaminant examined in the experiment (if WAF, follow guidance above); times of sampling, etc.
- Provide the location from which sediments were obtained if sediments are part of a microcosm or mesocosm.
- Provide brief details on means of cultivation (temperature, type of medium, etc.) and the concentration of cells at the start of the experiment or optical density if bacteria or phytoplankton was used in the experiment.
- Provide brief details on how fish or crustaceans were obtained and state if there was a period of acclimatization before the start of the experiment.