



**International Atomic Reference Material Agency**

**Instructions for IARMA ECARB-PT-2024  
IARMA Environmental Proficiency Test on the  
Determination of Carbon-14 in Water at Environmental Levels**

**1. Package Receipt**

Please check the content of the package and compare it with the items listed in the attached packing list. Sign and date the packing list and send it back to IARMA using your Portal page or email at: [office@iarma.co.uk](mailto:office@iarma.co.uk).

**2. Choice of Method/Procedure.**

Participants may use any routine and validated method of their choice (i.e. you should not use these samples to test a new procedure). The within bottle homogeneity is assured at 8 g test portion for water samples.

**3. Description of the water samples:**

**a. Matrix origin:**

Drinking water sourced from the controlled tap water system Radmirje was used to prepare the test items IARMA-193, IARMA-194, IARMA-195, and IARMA-196. Kindly note that there is no need to filter the water samples.

**b. Test items preparation:**

The water was gravimetrically spiked with known amounts of a standard solution containing a certified standard source of C-14. After bottling, homogeneity and stability tests showed acceptable results.

**4. Test items Handling:**

- Weigh the bottles and record the measured gross mass (as received with screw cap and labels) on the Packing list sent to you with the samples.
- Weigh the bottles and record the measured gross mass (as received with screw cap and labels) on the Packing list sent to you with the samples.
- Thoroughly mix the sample before transferring the contents to your standard sample counting container for C-14 measurements.

## 5. Reporting Requirements:

- Results should be reported using the IARMA Portal page. The username and password were sent to each participant.
- The value of the measurement result of C-14 and its combined standard uncertainty must be expressed in [Bq/l] for the water samples.
- Please report only two digits after the decimal point.
- For results reporting you may use “NR” for unreported results and “NA” for not applicable.
- All results should be decay corrected to the reference date **15 September 2024**.
- Uncertainty should be expressed in [Bq/l] as the combined standard uncertainty (1 sigma level) where all individual sources of uncertainty have been identified and taken into account.
- Undetectable/unquantifiable activities shall be reported as below the value of the method detection limit in [Bq/kg].
- The target date for result reporting is **15 November 2024**.

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