EUROPEAN COMMISSION
JOINT RESEARCH CENTRE
Institute for Reference Materials and Measurements

CERTIFIED REFERENCE MATERIAL
BCR® – 617

CERTIFICATE OF ANALYSIS

ARTIFICIAL GROUNDWATER			
	Mass fraction		Number of accepted sets of data p
	Certified value [1] [mg/kg]	Uncertainty [2] [mg/kg]	
Ca	14.6	0.4	18
Cl	26.4	0.4	11
K	9.93	0.26	14
Mg	7.32	0.15	18
Mn	0.050	0.002	16
Na	14.6	0.3	17
NO_3	25.8	0.5	10
SO_4	26.3	0.5	10

1) This value is the unweighted mean of the means of p accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination. The certified values are traceable to the International System of Units (SI).
2) Half-width of the 95 % confidence interval of the mean defined in 1).

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is not critical. The sample can be considered as homogeneous.

NOTE

This material has been certified by BCR (Community Bureau of Reference, the former reference materials programme of the European Commission). The certificate has been revised under the responsibility of IRMM.

Brussels, May 1997
Latest revision: May 2008

Signed:

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Unit for Reference Materials
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Additional Material Information	
	Mass fraction
	Value [1] [mg/kg]
NH_4	0.064
Fe	0.191
PO_4	0.272
1) The values of ammonium, iron and phosphate are based on the results from 8, 11 and 7 laboratories, respectively.	

DESCRIPTION OF THE SAMPLE

The material consists of an artificial groundwater sample at pH = 6.3 in a glass ampoule containing about 75 mL.

ANALYTICAL METHOD USED FOR CERTIFICATION

- Ion chromatography
- Visible light or UV spectrophotometry
- High resolution inductively coupled plasma mass spectrometry
- Inductively coupled plasma mass spectrometry
- Capillary zone electrophoresis
- Electrothermal atomic absorption spectrometry
- Flame atomic absorption spectrometry
- Flame atomic emission spectrometry
- Inductively coupled plasma emission spectrometry
- Potentiometry

PARTICIPANTS

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- Universiteit Gent, INW, Gent (BE)
- Vandkvalitetsinstituttet, VKI, Hørsholm (DK)
- Yorkshire Water, Alcontrol UK, Rotherham (GB)

SAFETY INFORMATION

The usual laboratory safety precautions apply.

INSTRUCTIONS FOR USE

The material is intended to be used for calibration purposes and for assessing method performance. When the reference material is used to assess the performance of a method, the user should refer to the recommendations of the certification report.
The sample must be used as it is from the ampoule. It is recommended that the reference material be analysed only within a day after opening of the ampoule.

STORAGE

The ampoules may be stored at a temperature of + 18 ºC.
However, the European Commission cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened samples.

LEGAL NOTICE

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NOTE

A technical report on the production of BCR-617 is available on the internet (http://www.irmm.jrc.be). A paper copy can be obtained from IRMM on request.

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