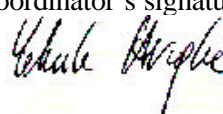


<b>EUROMET PROJECT FINAL REPORT</b>
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1. Ref. No.: <b>528</b>	2. Subject Field: <b>METCHEM</b>	
3. Type of collaboration: <b>Comparison</b>		
4A. Partners: <b>“VUV Praha”, “Force Institute”, “IRMM”, “BAM”, “VITUKI Rt.”, “Central Office of Measures”, “Water Research Institute”, “University of Stocholm”, “NMI” and “LGC”</b>	4B: CEC funded? <b>No</b> JRC funded? <b>Yes</b>	
5. Participating countries: <b>Czech Republic, Denmark, European Commission, Germany, Hungary, Poland, Slovak Republic, Sweden, The Netherlands and United Kingdom</b>		
6. Title: <b>Cd and Pb in water</b>		
7. Progress: <p><b>The EUROMET project 528 is a supplementary comparison (EURO-QM-S1) in the framework of the CIPM MRA. The aim of the comparison was to establish international comparability of measurements of Cd and Pb in water.</b></p> <p><b>The same samples measured by the EUROMET partners were also measured by field laboratories (in the framework of IMEP-12). In this way an overview of measurement capability from laboratories with different metrological function could be displayed.</b></p> <p><b>The reference values (and uncertainties) of this supplementary comparison were taken from the IMEP-12 certification report:</b></p> <ul style="list-style-type: none"> <li>• <b>reference value for Cd measurement: <math>0.04078 \pm 0.00082</math> nmol/g (<math>k=2</math>)</b></li> <li>• <b>reference value for Pb measurement: <math>0.04227 \pm 0.00085</math> nmol/g (<math>k=2</math>)</b></li> </ul> <p><b>The EUROMET Project 528 participants' results are given in tables (page 2) and graphically presented (page 3) in this report.</b></p>		
8. Coordinator's name: <b>Dr Y. Aregbe</b>  Address: <b>Institute for Reference Materials and Measurements Retieseweg B-2440 Geel, Belgium</b>  Telephone: <b>+32-14-571-673</b> Telefax: <b>+32-14-571 865</b> E-mail: <b>yetunde.aregbe@irmm.jrc.be</b>		
9. Completion date: <b>February 2002</b>	10. Coordinator's signature: 	11. Date: <b>30 April 2002</b>

\*) Delete as appropriate

**EUROMET project 528**  
**Cd and Pb in water**  
**Participants' results**

***Results for Cd measurement***

<i>participant</i>	<i>reported value nmol·g<sup>-1</sup></i>	<i>uncertainty nmol·g<sup>-1</sup></i>	<i>relative uncertainty (%)</i>
BAM	0.04116	0.00042	1.0
IRMM	0.04114	0.0006	1.5
ITM	0.0384	0.00352	9.2
LGC	0.0407	0.0004	1.0
NMi	0.04140	0.00018	0.4
VITUKI	0.0444	0.0021	4.7
VUV	0.03708	0.00382	10.3
WRI	0.0415	0.0052	12.5
Force	no results reported	no results reported	-
GUM-COM	withdrawn	withdrawn	-

***Results for Pb measurement***

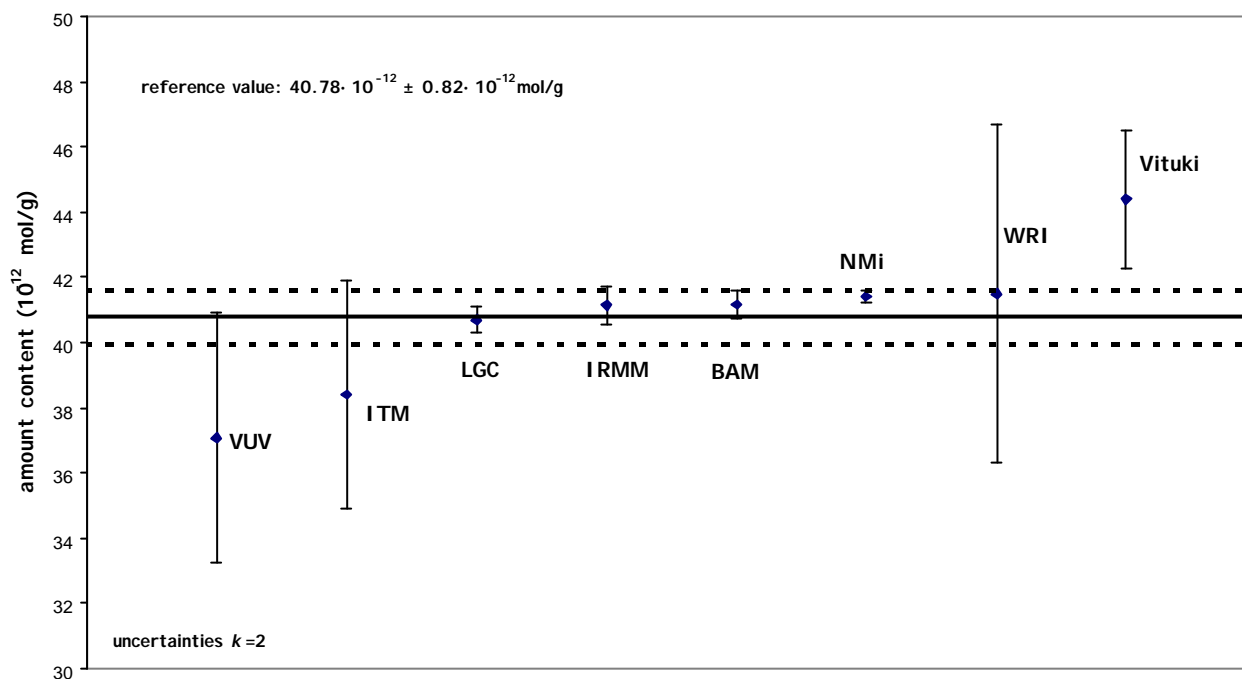
<i>participant</i>	<i>reported value nmol·g<sup>-1</sup></i>	<i>uncertainty nmol·g<sup>-1</sup></i>	<i>relative uncertainty (%)</i>
BAM	no results reported	no results reported	
IRMM	0.04222	0.00039	0.9
ITM	0.0403	0.00202	5.0
LGC	0.0424	0.0007	1.7
NMi	0.04226	0.0004	0.9
VITUKI	0.041	0.00096	2.3
VUV	0.03984	0.00522	13.1
WRI	0.04	0.00314	7.9
Force	no results reported	no results reported	-
GUM-COM	withdrawn	withdrawn	-

# EUROMET project 528

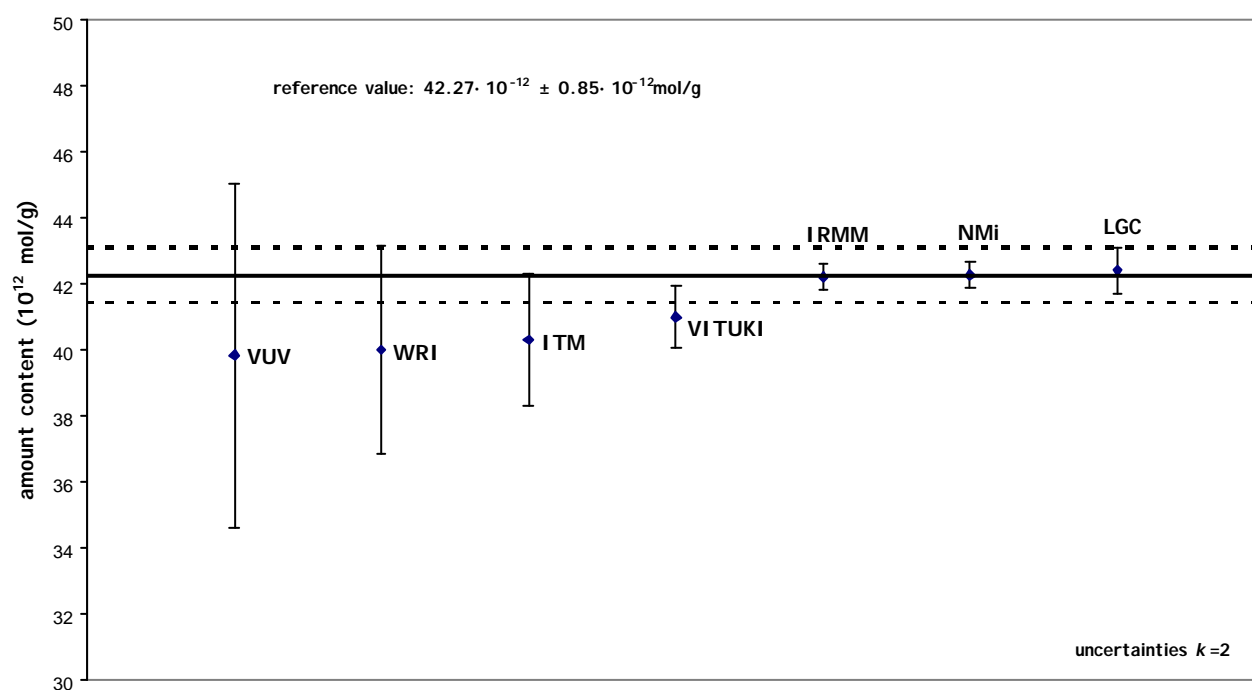
## Cd and Pb in water

### Participants' results graphical display

EUROMET project 528 (Cd)



EUROMET project 528 (Pb)



**EUROMET project 528**  
**Cd and Pb in water**  
**Analytical methods and instrumental techniques**

***Cd measurement***

<i>participant</i>	<i>method</i>	<i>instrumentation</i>
BAM	IDMS	Multi-collector ICP-MS
IRMM	IDMS	ICP-QMS
ITM	Ext. calibration	ICP-MS
LGC	IDMS	ICP-magnetic sector field MS
NMi	IDMS	ICP-magnetic sector field MS
VITUKI	AAS	GF-AAS
VUV	AAS	GF-AAS
WRI	-	ICP-MS
Force	-	-
GUM-COM	-	-

***Pb measurement***

<i>participant</i>	<i>method</i>	<i>instrumentation</i>
BAM	-	-
IRMM	IDMS	ICP-QMS
ITM	Ext. calibration	ICP-MS
LGC	IDMS	ICP-magnetic sector field MS
NMi	IDMS	ICP-magnetic sector field MS
VITUKI	AAS	GF-AAS
VUV	AAS	GF-AAS
WRI	-	ICP-MS
Force	-	-
GUM-COM	-	-

**EUROMET project 528**  
**Cd and Pb in water**  
**Participants list**

<b>institution / laboratory</b>	<b>origin</b>
<b>BAM</b> Bundesanstalt für Materialforschung und-prüfung	<b>GERMANY</b>
<b>IRMM</b> Institute for Reference Materials and Measurements	<b>European Commission</b>
<b>ITM</b> Applied Environmental Research-Stockholm University	<b>SWEDEN</b>
<b>LGC</b> Laboratory of the Government Chemist	<b>UNITED KINGDOM</b>
<b>NMi</b> Nederlands Meetinstituut	<b>The Netherlands</b>
<b>Vituki</b> Water Resources Research Centre	<b>HUNGARY</b>
<b>VUV</b> T.G. Masaryk Water Research Institute	<b>CZECH REPUBLIC</b>
<b>WRI</b> Water Research Institute	<b>SLOVAKIA</b>
<b>FORCE</b> Force Institute	<b>DENMARK</b>
<b>GUM-COM</b> Central Office of Measures	<b>POLAND</b>