



# **Technical Agreement** of the **Self-committed Network of PT Providers** **‘PT-WFD’**

to Support the Implementation of the  
**Water Framework Directive**

***Status: 2<sup>nd</sup> 1<sup>st</sup> official version***

## **1 Introduction**

This document provides the details of a technical agreement among European providers of proficiency testing schemes (PT) related to the chemical monitoring under the Water Framework Directive (WFD). The first issue of this agreement summarised the consensus reached after three preceding meetings in 2007 (at ENEA, Rome) and 2008 (in Brussels). The document was adopted by the founding PT-WFD members/advisors, listed in clause 4. on 16<sup>th</sup> June 2008 in Brussels. Following the 2009 General Assembly (GA) meeting, this second version of this agreement has been prepared and approved. The mission and the organisational structure of the PT-WFD are described in a separate document.

## **2 Preamble**

This document is primarily concerned with the harmonisation of technical details of PT schemes for laboratories undertaking chemical analyses of samples from national monitoring programmes under the WFD. Its objective is to ensure that PT schemes offered by various PT providers across Europe are fit for the purpose of a comparable and harmonised assessment of the laboratory performance with regard to the requirements of the WFD. PT schemes under the umbrella and logo of the PT-WFD shall operate in accordance with the requirements of ISO/IEC Guide 43-1 and ILAC G13 (ISO/IEC 17043 in the near future). Accredited PT providers are recognised as meeting these requirements. PT providers that are not accredited have to demonstrate that they are internationally or nationally recognised organisations which meet the requirements of ISO/IEC guide 43-1 and ILAC G13, or of other equivalent standards accepted at international level. The requirements of the above mentioned documents are not repeated in detail in this document. However, in particular those aspects are described in this document that require specification to ensure that:

- i) PTs meet the specific requirements of the WFD and
- ii) PTs are run and evaluated in a harmonised and comparable way.

Specifications given in this document are mainly based on the following internationally recognized documents:



- ISO 13528
- The International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories (IUPAC Technical Report)
- ISO 5725-1 and ISO 5725-2

### 3 Essential Features

PT schemes intended to support national monitoring programmes under the WFD need to have a number of essential features to ensure that:

- laboratory performance assessments are fit for the requirements of the WFD
- assessment of laboratory performance by different PT schemes is comparable.

#### 3.1 *PT Test Samples*

In selecting the sample material, account shall be taken of the objectives of the proficiency test, the target concentration levels, the required homogeneity and stability of the samples, and the transport and storage facilities. In general, real or spiked real samples shall be given preference over synthetic ones or standard solutions. Matrix characteristics can vary greatly, both temporally and geographically, and thus laboratories need to ensure that the methods they are using are appropriate for the range of matrix types that they are testing.

In order to assist with this, PT test samples shall be characterised by the PT provider using at least the following characteristics (if they are not to be analysed as a target parameter in the PT scheme):

- For sediments and suspended matter – sediment type and TOC
- For waters – e.g., water type (fresh, estuarine or marine), total hardness, suspended solids level, DOC. Additional parameters depending on the scope of the PT
- For biota – species, type of tissue

For non-polar and sorptive WFD priority substances, a considerable portion of the substance in a whole water sample will be associated with particulates. For these substances the PT test sample provided shall also contain particulates if appropriate and possible. For polar and non-sorptive compounds, the provision of water samples without suspended particular matter may be sufficient, because these substances are known to be predominantly in the dissolved fraction. The pertinent recommendations of the WFD, its daughter regulations and relevant CMA guidance documents shall be followed.

All PT test samples shall be “ready to analyse”, but for water samples where this is not practicable a real matrix and a spiking solution is acceptable.



## **3.2 Determinands and concentrations**

### **3.2.1 Selection of determinands**

The determinands selected in a particular PT shall be precisely defined in advance. It shall also be defined which congeners or isomers have to be measured (if appropriate), and how the calculation of the final result has to be done (e.g. in cases where the concentrations of several isomers or congeners have to be considered).

It shall also be defined whether the whole water sample has to be analysed or whether a certain treatment is necessary or recommended (e.g. measurement of only the dissolved fraction or only the SPM for compounds that are known to be predominantly in one of the two fractions).

### **3.2.2 General parameters**

There are several general parameters listed in the WFD that are used in defining water quality status:

- Transparency or turbidity
- Oxygenation
- Salinity
- Acidification status
- Nutrient status

Technical aspects on the determination of suitable general parameters will be discussed and fixed by the PT-WFD.

### **3.2.3 Selection of concentration level**

PT test samples for priority substances shall have concentration levels appropriate for both the annual average (AA) and maximum allowable concentration (MAC) environmental quality standards (EQS) as specified in the current draft of the pending European “Directive on environmental quality standards in the field of water policy and amending directive 2000/60/EC” (EQS directive). Suitable PT test samples will have a concentration range from below the relevant MAC-EQS values up to about 10 times the listed EQS.

If samples with concentrations below EQS are used, the concentration shall be selected at a level ensuring that results below the LOQ are not automatically within the accepted range considering the requirements on measurement uncertainty and LOQ as given by the WFD and its daughter regulations. This will also apply to biota samples.

## **3.3 Assigned values**

If the preparation process of the PT test samples can provide traceable assigned values, with allowance for matrix contributions, then this shall be the source of the assigned value. If this is not possible then the assigned value shall be calculated from the reported participant results in compliance with ISO 13528. The standard



uncertainty of the assigned value shall be estimated or derived according to internationally recognised standards or guidelines.

### **3.4 Standard Deviation for Proficiency Assessment (SDPA)**

For inorganic analytes and physico-chemical parameters (e.g. the four metals Cd, Ni, Hg and Pb and those parameters listed under 3.2.2), a SDPA of 10% and 0.1 pH units shall be used.

For organic substances (e.g. from the list of Priority Substances), a SDPA of 25% shall be used.

Exceptions from the mentioned SDPA values (10% or 25%) will be agreed by the network if necessity arises.

### **3.5 Assessment of Laboratory Performance**

Performance assessment of laboratories participating in the PT scheme shall be done by use of *z*-scores, using the following interpretation:

	$ z\text{-score}  \leq 2.0$	Satisfactory result
2.0 <	$ z\text{-score}  < 3.0$	Questionable result
	$ z\text{-score}  \geq 3.0$	Unsatisfactory result

## **4 Organisations supporting this technical agreement**

There are two groups of organisations forming and supporting the network: ordinary members and external advisors.

The role of the two groups is defined in a separate document on the mission and structure of the PT-WFD:

See:

*Mission Statement  
of the  
Self-committed Network of PT Providers  
“PT-WFD”  
to Support the Implementation of the  
Water Framework Directive*

*(2<sup>nd</sup> official version of 2010-01-10)*



## 4.1 Members

### 4.1.1 Ordinary Founding Members of the Network

The following PT providers are founding members and part of the PT-WFD. They have agreed to work according to this technical agreement when providing PT schemes under the umbrella and logo of the PT-WFD.



Logo	Organisation	Representative(s)
	<b>AQS-BW at Institute for Sanitary Engineering, Water Quality and Solid Waste Management – Universität Stuttgart</b> Bandtäle 2 70569 Stuttgart GERMANY	Michael Koch Frank Baumeister
	<b>BIPEA</b> 6/14 avenue Louis Roche 92230 Gennevilliers FRANCE	Bruno Berken
 	<b>IPL santé, environnement durables Nord</b> 1, rue du Professeur Calmette BP 245 59046 Lille Cedex FRANCE	Patrick Thomas
	<b>IWW Water Centre</b> Moritzstrasse 26 D-45476 Muelheim an der Ruhr, GERMANY	Ulrich Borchers David Schwesig
	<b>LGC Standards</b> Proficiency Testing Europa Business Park Barcroft Street, Bury Lancashire, BL9 5BT UNITED KINGDOM	Brian Brookman Matthew Whetton
	<b>Kemijski Institut Ljubljana Slovenija</b> (National Institute of Chemistry Slovenia) PO Box 660, Hajdrihova 19 - Ljubljana SI-1001, Slovenija	Andrea Drolc Magda Cotman



Logo	Organisation	Representative(s)
	<b>QUALITYCONSULT</b> "Associazione per lo sviluppo della qualità ambientale" Via G. Bettolo 4 00195 Roma ITALY	Ildy Ipoly Angelo Bortoli Saumel Perez Santana
	<b>QUASIMEME</b> Wageningen UR Alterra CWK P.O. Box 47 6700 AA Wageningen The Netherlands	Wim Cofino
	<b>VITUKI</b> <b>Environmental Protection and Water Management Research Institute</b> <b>Quality Assurance and Control</b> Kvassay Jenő út 1. 1095 Budapest HUNGARY	Csilla Bélavári

#### 4.1.2 Ordinary New Members of the Network (Admission at GA Rome 2009)

The following PT providers were welcomed as members of the PT\_WFD at the General Assembly in Rome (2009-11-27). They have agreed by their applications to work according to this technical agreement when providing PT schemes under the umbrella and logo of the PT-WFD:




Logo	Organisation	Representative(s)
	<b>AGLAE Association Générale des Laboratoires d'Analyse de l'Environnement</b> FRANCE	Jean-Marie Delattre
	<b>Behörde für Soziales, Familie, Gesundheit und Verbraucherschutz</b> <b>Institut für Hygiene und Umwelt</b> Marckmannstr. 129 b D-20539 Hamburg GERMANY	Karla Ludwig-Baxter



Logo	Organisation	Representative(s)
	<b>NIVA Norwegian Institute For Water Research</b> Brekkeveien 19 N-0411 Oslo NORWAY	Haavard Hovind
	<b>SYKE Finnish Environment Institute</b> Hakuninmaantie 6 FIN-00251 Helsinki FINLAND	Mirja Leivuori
	<b>Tallinn University of Technology,</b> Tallin, ESTONIA	Kati Roosalu

#### 4.1.3 External Advisors of the Network

The following organisations and PT providers are acting as founding advisors of the PT-WFD:

Logo of the organisation	Organisation	Representative(s)
	<b>AQUAREF</b> <i>The French national reference laboratory for water and the aquatic environment</i> C/o INERIS Avenue de Bergoide F-60550 Verneuil en Halatte FRANCE	Marie-Pierre Strub
	<b>ENEA</b> <b>Ente per le nuove tecnologie, l'energia e l'ambiente</b> Via Anguillarese, 301 00123 Rome ITALY	Roberto Morabito Claudia Brunori
	<b>University of Natural Resources and Applied Life Sciences, Vienna</b> <b>Department for Agrobiotechnology, IFA-Tulln</b> Konrad-Lorenz-Str. 20 3430 Tulln AUSTRIA	Susanne Schemitz



Logo of the organisation	Organisation	Representative(s)
 Institute for Reference Materials and Measurements	<b>JRC-IRMM</b> <b>European Commission</b> <b>Directorate general</b> <b>Joint Research Centre</b> <b>Institute for Reference Materials and Measurements</b> Retieseweg 111 B-2440 Geel, BELGIUM	M. Beatriz de la Calle
	<b>RWS-WD Rijkswaterstaat Waterdienst</b> <b>(RWS Centre for Water Management)</b> 8200AA Lelystad The Netherlands	Gerda C.M. Tielens Wester Marjan Rietveld

#### 4.2 **Chairs and Secretary of the Network**

For the first period of 2 years from **October 2008 until October 2010** the following persons are elected by the General assembly (GA) or the Advisory board (AB):

Logo of the organisation	Function	Name
	Chair of the General Assembly	Ulrich Borchers
	Chair of the Advisory Board	Roberto Morabito
	Secretary	Ildy Ipoly