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Feasibility of a Monitoring Mechanism Supporting a Watch List under the Water Framework Directive

Final report of a Pilot Exercise

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Abstract

This report describes work conducted to assess the feasibility of an experimental monitoring exercise in support to a so-called Watch List Mechanism under the Water Framework Directive 2000/60/EC in a collaborative design involving EU Member States laboratories and some 200 official monitoring station operated by the Member States.
The report includes all details on sampling stations, performance of analytical methods as well as the results of the analyses of all samples with regard to the occurrence and levels of 20 compounds of concern. The underlying analytical methods are carefully documented with regards to their performance characteristics. Obtained results are assessed statistically. Although the analysed single samples are insufficient to make any statement on the performance of the treatment processes leading to the compost, the collective of data allows having a glance at the pan-European situation as regards the studies compounds. Background information from literature describing the situation before the survey is included, too.

Abstract

This report describes work conducted by the European Commission's Joint Research Centre in the context of its support to the implementation of the Water Framework Directive 2000/60/EC. The work aimed at the feasibility assessment of an experimental monitoring exercise in support to a so-called Watch List Mechanism in a collaborative design involving EU Member States laboratories and some 200 official monitoring stations operated by the Member States.

The report includes all details on sampling stations, performance of analytical methods as well as the results of the analyses of all samples with regard to the occurrence and levels of 20 compounds of concern.

In total, 219 whole water samples originating from 25 EU Member States and 2 other European countries, were assessed for the contents of acesulfame, glyphosate and its metabolite AMPA, 1H-Benzotriazole and tolyltriazoles, bisphenol A, triclosan and triclocarban, carbamazepine and its metabolite 10,11-dihydro-10,11-dihydroxycarbamazepine, sulfamethoxazole, perfluoropropionic acid, tris-2-chloropropyl phosphate, methyl tert-butyl ether, silver, boron and chloride (Cl^-) in water. Furthermore, 23 sediment samples were analysed for decabromodiphenylethane and decabromodiphenyl ether.

The underlying analytical methods are carefully documented with regards to their performance characteristics. Obtained results are assessed statistically and where possible compared to other findings.

Although the analysed single samples are insufficient to make a statement on water quality at a specific station over time, the collective data allow a glance at the pan-European situation as regards the studied compounds.

Background information from literature describing the situation before the survey is included, too.

The report is divided into a core part and two annexes. For practical reasons, the report is split into two volumes: Volume 1 contains the report and the single analytical results; volume 2 contains the documentation of the sampling stations.

Participating laboratories

The findings presented in this report are the result of a large collaborative effort. For confidentiality reasons, the identities of the participating sampling stations and sampling teams cannot be revealed in this public report, but are known to the European Commission. This anonymity shall not minder our acknowledgment of the considerable support and in-kind contribution behind the exercise. As regards the practical execution of the project organization and the work in the laboratories the following persons contributed actively.

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List of Abbreviations and Symbols

Throughout this report the following abbreviations and symbols are used:

2,4-D	2,4-Dichlorophenoxyacetic acid
2,4,5-T	2,4,5-Trichlorophenoxyacetic acid
AAS	atomic absorption spectrometry
AES	atomic emission spectrometry
AMA	advanced mercury analyzer
BCR	Bureau Communautaire de Reference
BDL	below detection limit
CRM	certified reference material
CV	cold-vapour
CV%	coefficient of variation
D4	Octamethylcyclotetrasiloxane
D5	Decamethylcyclopentasiloxane
D6	Dodecamethylcyclohexasiloxane
DEA	diethyl-ammonium
DDC	diethyl-dithiocarbamate
DG	Directorate-General
DL	dioxin-like
EC	European Commission
EU	European Union
F	factor (from PMF)
EVF	explained variation of factor
GC	gas chromatography
ICP	inductively coupled plasma
IES	Institute for Environment and Sustainability
IUPAC	International Union for Pure and Applied Chemistry
JRC	Joint Research Centre
K	coverage factor
KOW	octanol/water partition coefficient
LC	liquid chromatography
LoD	limit of detection
LoQ	limit of quantification
MBT	Mechanical Biological Treatment
MCPA	2-methyl-4-chlorophenoxyacetic acid
MDL	method detection limit
MDM	Octamethyltrisiloxane
MD2M	Decamethyltetrasiloxane
MD3M	Dodecamethylpentasiloxane
MRM	multiple reaction monitoring
MS	mass spectrometry
PAH	polyaromatic hydrocarbon
PCA	principal component analysis
PCB	polychlorinated biphenyls
PCM	polycyclic musk
PFASs	perfluoroalkyl substances
PCDD/F	polychlorinated dibenzo-dioxin/furane
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PMF	positive matrix factorization
POP	persistent organic pollutant
R	repeatability
SOP	standard operation procedure
SRM	standard reference material
SSL	sewage sludge
STD	standard deviation
STP	sludge treatment plant
$u_{combined}$	combined uncertainty
U	expanded uncertainty
u(r)	combined uncertainty for repeatability
u(IP)	combined uncertainty for repeatability
u(t)	combined uncertainty for repeatability
UHPLC	Ultra High Pressure Liquid Chromatography
U.o.M.	unit of measurand
US	United States of America
WGS84	World Geodetic System 1984
WWTP	waste water treatment plant

Chemical elements are identified by the respective symbol according IUPAC

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1 Introduction

1.1 Background of the study

The Water Framework Directive (WFD) 2000/60/EC (Article 16(4)) requires that the list of Priority Substances (PS) be reviewed at least every four years (European Union, 2000). PS are defined as substances presenting a significant risk to or via the aquatic environment at EU level. In order to assess risk, both hazard and exposure need to be considered.

The recent review of the priority substances list, which was concluded in 2012, showed that although there has been an impressive improvement in the availability of monitoring data, these were not always fit-for-purpose for the risk assessment and the prioritisation. In some cases, information was available for only a limited geographical area. In other cases the analytical methods used in the routine monitoring was not sensitive enough to detect concentrations at the levels of no-effect for a particular substance, limiting the usefulness for risk assessment of the monitoring data.

In this context one option proposed to support the identification of additional PS was the establishing a *watch list* with the aim of ensuring targeted monitoring across the EU of substances of possible concern. For example, in the case of emerging pollutants only few monitoring data are available and such approach could help to provide a database of high-quality information fit for the purpose of prioritising PS. In such a setting, the substances would be monitored for a limited period of time, but sufficient to decide on whether to prioritise them or not. The risk-based decision on prioritisation would then be able to take into account the new monitoring information in combination with information on production, use and inherent hazardousness, some of which might already have been used to decide on inclusion in the watch list.

In order to investigate the technical feasibility of the EU-wide coordinated data collection and assessment that would be required for the substances on a watch list, the European Commission's Joint Research Centre (JRC) proposed, under the umbrella of the Common Implementation Strategy of the Water Framework Directive, to design a pilot exercise in collaboration with the Member States, based on the previous exercises of similar character.

The first outline of this pilot study was presented to the members of the CIS WFD WG E Sub-group on Chemical Monitoring and Emerging Pollutants (CMEP), who generally supported the proposal of such a pilot-exercise. Based on the comments received from this group, WG E and SCG, the outline was revised and amended accordingly. In addition, some further information on the time planning, the resulting next steps as well as the required allocation of resources were incorporated and finally approved by the Water Directors in Dec 2011.

This report presents the technicalities of the pilot exercise and its outcome and discusses the technical limitations and implications of a possible monitoring mechanism in support to watch list. The exercise used existing monitoring infrastructure and was designed to allow different levels of engagement in order to accommodate different availability of resources and analytical expertise in the various Member States' laboratories.

1.2 Concept

Investigation of the fate and the pathways of environmental pollutants is an integral part of all policies dealing with the management of environmental resources and activities affecting environmental quality. In the past three decades, Europe has developed a large amount of environmentally related legislation, much of which leads directly or indirectly to the introduction of more or less stringent limit values for conventional pollutants. When it comes to new or less investigated environmental pollutants, which are not subject to any explicit environmental regulations, the knowledge base is very poor and often available data lack comparability or are insufficiently documented in terms of geographical and metrological traceability. However, this information is needed to decide whether a given substance, which is detected in the environment after deliberate or accidental release, poses an emerging risk or not. In other words, one enters a vicious circle of substances not being regulated because of a lack of information regarding their occurrence in the environment and their unknown environmental fate, because they are not monitored in the context of environmental regulations.

For this purpose, European Union (EU)-wide monitoring exercises following a non-probabilistic approach have been shown to be a viable way to arrive quickly at a representative data set of known quality (Loos *et al.* (2009 a,b); Loos *et al.* (2010)). The logistics of these exercises follow a mechanism similar to the centralized dispatch of proficiency testing (PT) schemes or certification exercises involving the shipment of a series of test specimens or samples to laboratories in a way that the transportation does not affect sample stability (Gawlik *et al.* (2012)).

Fig. 1 gives an overview on this activity, which foresees the centrally coordinated collection of samples from European sampling stations, many of which are monitored in the context of national or regional monitoring activities. This has the advantage that the sampling stations are well documented, frequently visited and hence easily accessible in a cost-effective manner.

Following precise instructions, the samples are then dispatched to a sample-collection point or specimen bank, where samples and relevant information are carefully documented. The samples are next forwarded to the competent laboratories, which must have proved and documented measurement capability and expertise for the substance being investigated, and which are analyzing the whole sample pool under repeatability conditions (i.e. in one single analytical run). This is crucial to overcome day-to-day measurement variability or other within-laboratory effects, which may increase the uncertainty of the measurement result. The main advantage of this approach is that it overcomes all problems related to data comparability and necessarily costly mechanism of quality assurance and quality control (QA/QC) [e.g., PT schemes or the use of certified reference materials (CRMs)].

EU-wide campaigns organized so far by the JRC aimed primarily at research to anticipate and to identify emerging issues around new and less-investigated substances. The necessary knowledge for the preparation of suitable matrix reference materials, which are necessary for any QA/QC activity, is hence not usually available and would be too lengthy and costly. The laboratories chosen usually have a high degree of automation for their analytical procedures, which also increases the repeatability of the methods and decreases the cost per analysis.

Upon completion of the analytical work, the data and relevant background information regarding the analytical method is then compiled under the lead of the JRC.

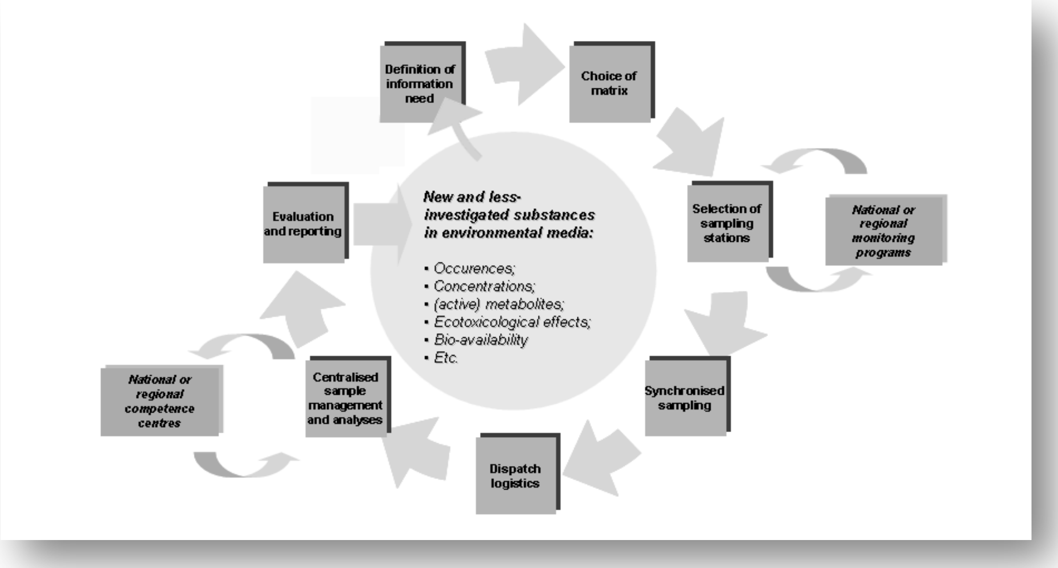


Figure 1 - EU-wide monitoring mechanism as operated by the JRC

This mechanism has been developed by the JRC in the period 2008-2011 and was employed very successfully for the investigation priority and emerging pollutants in surface water (Loos *et al.* (2009a), groundwater (Loos *et al.* (2010), sewage sludge (Tavazzi *et al.* (2012), effluents (Loos *et al.* (2012)) and treated biowaste (Tavazzi *et al.* (2013)). In the cases of sewage sludge and biowaste, the mechanism was used for the first time to deliver input to policy decisions influencing the revision process of the Sewage Sludge Directive 86/278/EEC (European Union, 1986) and the definition of End-of-waste criteria for biowaste.

In addition, the findings on the occurrence in surface and groundwaters of E955 sucralose, a novel persistent food additive released in 2005 to the European market, the mechanisms delivered valuable information to the European Environment Agency (EEA) to underpin the need for a better ecotoxicological investigation of E955 (Loos *et al.* (2009b)).

2 Preparatory steps

2.1 Information expected from the feasibility study

The main purpose of the pilot exercise was to assess the feasibility of a mechanism to support future Watch List monitoring in support of the prioritisation process, using the JRC's monitoring design. In this framework, the selection of the substances was a critical exercise due to the sensitive character of chemical monitoring information when geo-referenced. The set of substances had to cover various physic-chemical properties, e.g. in terms of polarity, volatility or stability, but needed also to be selected in function of available analytical resources. Furthermore, the feasibility study should provide a realistic overview on the work to be conducted for those substances, for which a standard method is not available. Additionally, information about number of sampling stations, comparability of data among laboratories and financial resources were expected from the study. More precisely the following questions had to be investigated and eventually answered:

1.) Is it possible to collect and centrally analyse a set of samples from 200-250 sampling stations across the EU and within a narrow range of time?

2.) What are the limitations of the EU wide snapshot mechanism developed by the JRC in terms of sample capacity, stability and in view of the analytes to be investigated?

3.) Is it possible to apply the mechanisms to sediment and biota samples?

4.) Can the study design deliver analytical methods developed on purpose for this exercise in a way that it can be the basis for further normative work and standardization?

5.) Are data for the same analyte obtained in different laboratories comparable?

6.) What is the cost of such an exercise and which resources are needed?

7.) What information can be obtained from such an exercise?

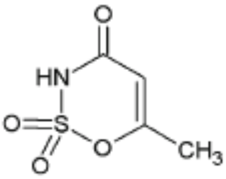
2.2 Substance selection

The substance selection for this pilot exercise was a sensitive step due to the political framework of the experiment. Thus, it was necessary from a scientific point of view to examine various technical aspects in the study, while not to interfere with the prioritisation process. Furthermore, it was necessary to consider those analytical resources and capabilities of the participating laboratories, which could be made available to this study. The following set of substances retained for this study is the result of these considerations. It has to be stressed that none of the substances was selected because of environmental concerns or in view of future prioritisation exercises.

2.2.1 Acesulfame

Acesulfame is commercially used as potassium salt, also known as Acesulfame-K. It is 200 times sweeter than table sugar. It is a very polar and water soluble compound. Artificial low-calorie sweeteners are consumed in considerable quantities with food and beverages. After ingestion, some sweeteners pass through the human metabolism largely unaffected, are quantitatively excreted via urine and feces, and thus reach the environment associated with domestic wastewater. Acesulfame is poorly eliminated in wastewater treatment plants (WWTPs) and is moderately persistent in surface waters. Acesulfame and Sucralose were recently identified as ubiquitous (emerging) environmental contaminants. They were detected in untreated and treated wastewater, in surface waters, groundwater, ocean waters, and even in tap and drinking water samples (Buerge *et al.* (2009), Loos *et al.* (2009b), Mead *et al.* (2009), Scheurer *et al.* (2009)).

Table 1 - Chemical properties of acesulfame

Acesulfame		
CAS Number	Log K_{OW}	Water Solubility [g/l]
33665-90-6 55589-62-3 (K)	-1.3	250
Formula	Molecular weight	Chemical structure
$C_4H_5NO_4S$	163.15 g/mol	

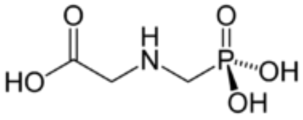
Motivation for choice: Due to its persistence and release to the sewer system persistent food additives such as acesulfame have been established as tracer substances for emerging pollutants linked to food. The substance polarity requires measurement by LC-MS. Although the substance is increasingly analysed in environmental studies in particular aiming at to the interaction between effluents and surface waters, no standard method exist. The analytical difficulty of this substance is of medium complexity and the compound represents a good example of emerging pollutants with a low toxicological relevance but ubiquitous character. The substance is released predominantly via effluents of STP and leakage from sewer systems.

2.2.2 *Glyphosate*

Glyphosate is presumably the most used herbicide worldwide. It has a non-selective mode-of-action with a broad application spectrum. It is widely applied in agricultural and urban environments. One of the reasons for its success was the development of glyphosate tolerant plants such as soy or maize. Due to its low toxicity and high efficiency, it is also a popular herbicide to control weed in urban areas. Glyphosate is a highly water soluble compound, but sorbs also strongly to the soil matrix and is therefore considered relatively immobile in soil. Furthermore, it undergoes microbial degradation in soil. Despite these facts glyphosate occurs in rather high concentrations in surface water (Hanke *et al.* (2010)).

Motivation for choice: Glyphosate is a highly water-soluble herbicide and degrades rapidly in soil, but only slowly in water. The substance is stable in water at a range of pH values at 35°C and resists also photo-degradation in buffered solution under natural sunlight. Its hydrolysis half-life is more than 35 days. Sediment appears to be the major sink for glyphosate residue (see AMPA). The substance is widely monitored at EU scale and standard methods are operated frequently. In the feasibility study, glyphosate (and its degradation product AMPA) is proposed to investigate typical behaviour of plant protection products. Given the routine character of the analytical method the substance is also used for an intercomparison for samples analysed independently in two different laboratories.

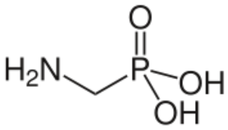
Table 2 - Chemical properties of glyphosate

Glyphosate		
CAS Number	Log K_{OW}	Water Solubility [g/l]
1071-83-6	-3.5	10
Formula	Molecular weight	Chemical structure
$C_3H_8NO_5P$	169.07 g/mol	

2.2.3 *AMPA*

AMPA (Aminomethylphosphonic acid) is the primary degradation product of glyphosate, and often detected in surface waters in higher concentrations than Glyphosate. In addition, it tends to accumulate in sediment (bound residues) (Al-Rajab & Schiavon (2010), Botta *et al.* (2009)).

Table 3 - Chemical properties of AMPA

Aminomethylphosphonic acid (AMPA)		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
1066-51-9	-3.5	
Formula	Molecular weight	Chemical structure
CH_6NO_3P	111.04 g/mol	

Motivation for choice: AMPA is the primary metabolite of herbicide glyphosate and tends to accumulate in sediment. The assessment was proposed to facilitate a link between sediment monitoring (carried out only very rudimentary in this study). More important is the investigation of parent compound and metabolite.

2.2.4 *^{1}H-Benzotriazole and Tolyltriazoles*

^{1}H-Benzotriazole and Methylbenzotriazoles[1] are a class of high production volume chemicals, which find broad applications in various industrial processes as well as in households. They show metal complexing properties and are used as anticorrosive additives and flame retardants in aircraft de-icers and anti-ice fluids, in cooling and hydraulic fluids and for silver protection in dishwashing agents. Benzotriazoles are compounds with high water solubility and a high polarity. Moreover, they are quite persistent against biological and photochemical degradation processes in the aquatic environment. Acute toxicity to aquatic organisms is in the low to moderate mg/L range, but there is a lack of a complete set of good quality eco-toxicological data on possible chronic effects of these high use chemicals (Janna *et al.* (2011), Reemtsma *et al.* (2010), Weiss *et al.* (2006)).

Motivation for choice: Benzotriazoles are high production-volume chemicals used in a wide range of industrial and household applications. They are generally considered to be stable, but may degrade under certain conditions, e.g. may react to changes in oxygen levels, thus they are useful to assess sample stability issues, if need arises.

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[1] *Tolyltriazole, TT, used as a technical mixture of 4- and 5-TT*

Table 4 –Chemical properties of ^{1}H-Benzotriazole

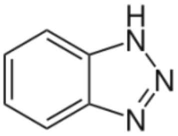
^{1}H-Benzotriazole		
CAS Number	Log K_{OW}	Water Solubility [g/l]
95-14-7	1.23	20
Formula	Molecular weight	Chemical structure
$C_6H_5N_3$	119.13 g/mol	

Table 5 – Chemical properties of 4-Tolyltriazole

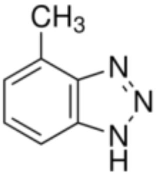
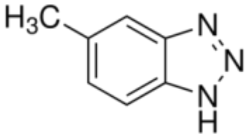
4-Tolyltriazole		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
29878-31-7	1.89	
Formula	Molecular weight	Chemical structure
$C_7H_7N_3$	133.15 g/mol	

Table 6 –Chemical properties of 5-Tolyltriazole

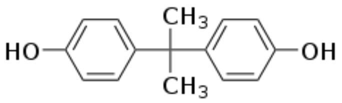
5-Tolyltriazole		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
136-85-6	1.89	
Formula	Molecular weight	Chemical structure
$C_7H_7N_3$	133.15 g/mol	

2.2.5 *Bisphenol A*

Bisphenol A (BPA) is widely used in the production of polycarbonate plastics and phenolic-epoxy resins, which have a variety of applications, such as plastic food containers and epoxy food-can coatings. Additional applications of BPA include printed circuit boards, composites, adhesives, and tooling. BPA is relatively easily degraded in water. However, due to the continuous release of BPA into the environment, in comparison to plasticizers such as phthalates, BPA is commonly detected in aquatic ecosystems. Various studies revealed its endocrine disrupting activity (European Commission (2003, 2008), Gallart-Ayala *et al.* (2010), Oehlmann *et al.* (2008), Quednow & Püttmann (2008)).

Motivation for choice: Bisphenol A is mainly used in the production of epoxy resins and polycarbonate plastics, the latter being frequently used in laboratory and sampling equipment. The analysis of the substance is technically very challenging due to risk of sample contamination during sampling and pre-treatment. The substance is proposed in order to investigate the influence of the sampling equipment and sample container.

Table 7 – Chemical properties of bisphenol A

Bisphenol A		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
80-05-7	3.4	300
Formula	Molecular weight	Chemical structure
$C_{15}H_{16}O_2$	228.29 g/mol	

2.2.6 *Triclosan and triclocarban*

Triclosan is currently used as an antimicrobial agent in toothpaste, mouthwash, liquid soap and in functional clothing such as functional shoes and underwear, as a stabilizing agent in a multitude of detergents and cosmetics and as an antimicrobial agent in polymeric food cutting boards. The primary emission route for Triclosan after usage is through wastewater. In wastewater treatment plants (WWTPs) ~90% of the incoming Triclosan is removed from the water (also by adsorption to sludge), which is a high but not complete removal. As a result, it has been found in WWTP effluents as well as in surface water and ground water (and sewage sludge) in many countries (Bester (2009), Chen *et al.* (2012), European Commission (2009), Heidler & Halden (2008), Singer *et al.* (2002)). Triclocarban is used as an antimicrobial and antibacterial agent in liquid soaps and deodorants, and antibacterial mouthwashes and toothpastes (personal care products). Its maximum amount allowed in Europe in cosmetic products is 0.2 %. Due to its environmental persistence and widespread use, Triclocarban was found in surface water in concentrations up to microgram/liter levels, and recent studies show that it accumulates in snails and algae (Kwon & Xia (2012), Schebb *et al.* (2011)).

Motivation for choice: The substances are antibacterial and antifungal agents used in various consumer products such as soaps, deodorants, skin-care products, but also in textiles and food contact material. Both substances are only slightly soluble in water and do not decompose under normal storage conditions. In aquatic environments, triclosan and triclocarban are expected to attach to the surface of suspended solids and sediments and may bioaccumulate. The usefulness in the pilot include the investigation of aspects of cross contamination caused by staff handling. Adsorption on the sampling container may also be an issue for water samples. The substance triclocarban was included as an additional compound to better illustrate that a strict single substance approach may lead not to capture the full picture in terms of occurrence and levels of emerging pollutants. In the evaluation, data will be useful to evaluate whether similar substances feature similar distribution patterns.

Table 8 - Chemical properties of triclosan

Triclosan		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
3380-34-5	4.8	10
Formula	Molecular weight	Chemical structure
$C_{12}H_7Cl_3O_2$	289.53 g/mol	

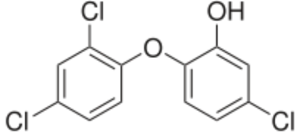
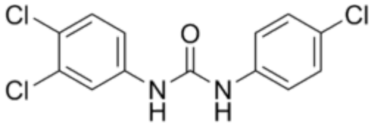
Triclosan		
		

Table 9 - Chemical properties of triclocarban

Triclocarban		
CAS Number 101-20-2	Log K_{OW} 4.9	Water Solubility [mg/l] 0.11
Formula $\mathbf{C_{13}H_9Cl_3N_2O}$	Molecular weight 315,58 g/mol	Chemical structure 

2.2.7 *Carbamazepine and its metabolite 10,11-Dihydro-10,11-dihydroxycarbamazepine*

Carbamazepine (CBZ), used as an anti-epileptic and mood-stabilizing drug, is one of the most frequently detected pharmaceutical residues in water bodies, since it is poorly removed in WWTPs. Investigations found that Carbamazepine is persistent and its removal efficiencies by WWTPs are mostly below 10%, because it is resistant to biodegradation at low concentrations, and it is purely adsorbed to sludge (Fenet *et al.* (2012), Zhang *et al.* (2008)). 10,11-Dihydro-10,11-dihydroxycarbamazepine (DiOH-CBZ) is an important metabolite or transformation product of Carbamazepine (CBZ) (De Laurentiis *et al.* (2012)).

Table 10 – Chemical properties of carbamazepine

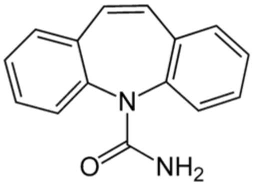
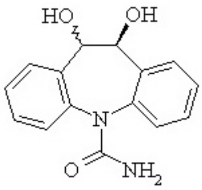
Carbamazepine		
CAS Number **298-46-4**	Log K_{OW} 2.45 – 2.77	Water Solubility [mg/l] 17.7
Formula $\mathbf{C_{15}H_{12}N_2O}$	Molecular weight 236.3 g/mol	Chemical structure 

Table 11 – Chemical properties of 10,11-Dihydro-10,11-dihydroxycarbamazepine

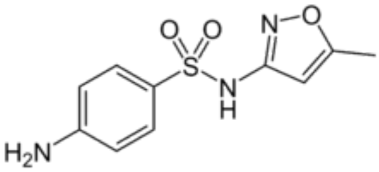
10,11-Dihydro-10,11-dihydroxycarbamazepine		
CAS Number **58955-93-4**	Log K_{OW} 0.81	Water Solubility [mg/l]
	Molecular weight 270.1 g/mol	Chemical structure



Motivation for choice: Carbamazepin is an anticonvulsant and mood-stabilizing drug used primarily in the treatment of epilepsy and bipolar disorder, as well as trigeminal neuralgia. It is highly persistent in the water/sediment system and features an elevated level of sorption onto the sediment, but also readily detectable in surface water. The metabolite has a more polar character. The use of the couple will be useful to illustrate that monitoring the mother molecule may not be sufficient to assess the environmental occurrence of a given substance.

2.2.8 Sulfamethoxazole

Sulfamethoxazole (SMZ) is one of the most prescribed antibiotics worldwide. It is used to treat a vast array of infections in humans and animals. SMZ is also used in combination with Trimethoprim for the treatment of respiratory and urinary tract infections. SMZ is, due to its persistency, one of the most frequently detected antibiotics in the environment (Haack *et al.* (2012)).

Sulfamethoxazole		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
723-46-6	0.92	281-610
Formula	Molecular weight	Chemical structure
$C_{10}H_{11}N_3O_3S$	253.28 g/mol	

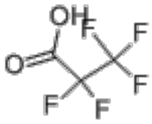
Motivation for choice: Sulfamethoxazole is released not only by sewer systems and the respective treatment plants, but this drug is registered for use in humans, dogs, horses, cattle, and swine, thus likely to enter the environment also by diffuse sources.

2.2.9 Perfluoropropionic acid (PFPrA)

Short-chain perfluorinated acids and sulfonates are increasingly being used in industry as substitues for Perfluorooctansulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA). In the literature, very little information is available on perfluoropropionic acid (PFPrA). It has been analysed in Japan in precipitation using weak anion-exchange SPE (WAX) followed by LC-MS-MS analysis. Trifluoroacetic acid (TFA), the atmospheric degradation product of (hydrofluoro)carbons and (hydrochlorofluoro)carbons, and several short-chain perfluorinated acids are major compounds found in rainwater (Li *et al.* (2010), Kwok *et al.* (2010), Taniyasu *et al.* (2005, 2008)).

Table 12 - Chemical properties of perfluoropropionic acid

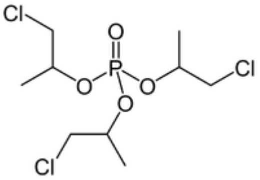
Perfluoropropionic acid		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
422-64-0		Very soluble

Formula	Molecular weight	Chemical structure
$C_3HF_5O_2$	164.03 g/mol	

Motivation for choice: Perfluoropropionic acid is a typical situation of a less-investigated environmental pollutant, which due to its chemical and physico-chemical similarity to another critical substance can be expected to pose similar problems. In this study, the substance illustrates also the complexity of analytical method development from scratch. This information is expected to be useful in the evaluation if the mechanism can deliver pre-normative input.

2.2.10 Tris-2-chloropropyl phosphate (TCPP)

Organophosphates (OPs) are employed as flame retardants and plasticizers in a large variety of consumer products (plastics, textiles, electronic equipment, as well as furniture and construction material). The chlorinated OPs Tris(2-chloroethyl) phosphate (TCEP) and Tris(2-chloropropyl) phosphate (TCPP) are predominantly used as flame retardants, whereas the non-chlorinated esters Tris(2-butoxyethyl) phosphate (TBEP), Tri-iso-butyl phosphate (TiBP), and Tri-n-butyl phosphate (TnBP) are mostly applied as plasticizers, antifoaming agents, and additives. TCPP is used as a flame retardant agent mostly in polyurethane foams for rigid polyurethane foam plates, used in thermal insulation of buildings as well as liquid polyurethane foam as used, e.g., to place and fix window frames etc. in buildings. TCEP was mainly substituted by TCPP in Europe since the mid 1990s due to its toxic effects to aquatic organisms and its classification in the European Union (EU) as "potential human carcinogen". Several studies have shown the occurrence of the OPs in the aquatic, terrestrial, and atmospheric environment as a result of anthropogenic activities (Andresen *et al.* (2004), Reemtsma *et al.* (2008), Regnery & Püttmann (2010)).

Tris-2-chloropropyl phosphate		
CAS Number	Log K_{OW}	Water Solubility [g/l]
13674-84-5	2.6	0.9
Formula	Molecular weight	Chemical structure
$C_9H_{18}Cl_3O_4P$	327.55 g/mol	

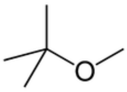
Motivation for choice: This flame retardant is mainly linked to the use of polyurethane foam. As such it is widely used in the construction sector and industrial sector in general. TCPP is defined as semi-polar and shown to occur in significant concentrations in surface water, groundwater and precipitations. It is resistant to hydrolysis in neutral or acidic waters and to photolysis and characterised by a low biodegradability. The substance is proposed to be analysed by GC-MS and is seen as analytically challenging as a new method development is required.

2.2.11 Methyl tert-butyl ether (MTBE)

Methyl *tert*-butyl ether (MTBE) is a flammable liquid which is used as an organic solvent and an additive in unleaded gasoline, used as an oxygenate to raise the octane number (anti-knocking agent). MTBE is a volatile contaminant, but small amounts may dissolve in water and get into ground water where it remains for a long time. MTBE can enter streams in association with urban storm water runoff or ground water discharge. Direct spills of gasoline to rivers are also possible (Li et al. (2008), Werner et al. (2001)).

Motivation for choice: MTBE is almost exclusively used as a fuel component in fuel for gasoline engines. It can enter streams in urban stormwater runoff or groundwater discharge. Direct spills of gasoline to streams is also possible. MTBE sorbs only weakly to subsurface of solids. Therefore, sorption does not retard the transport of MTBE by groundwater. Generally it resists biodegradation by indigenous bacteria in ground water. In this study, MTBE has been proposed to investigate the influence of volatilisation and loss due to adsorption on sample container walls or headspace formation. MTBE is also analysed in parallel and independently in two laboratories.

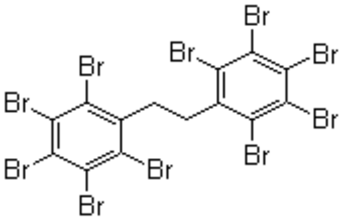
Table 13 – Chemical properties of methyl tert-butyl ether

Methyl tert-butyl ether		
CAS Number	Log K_{OW}	Water Solubility [g/l]
1634-04-4	1.24	48
Formula	Molecular weight	Chemical structure
$C_5H_{12}O$	88.15 g/mol	

2.2.12 *Decabromodiphenylethane (DBDPE)*

Polybrominated Diphenylether (PBDE) usage has been voluntarily phased out in several countries or is restricted by law due to concerns regarding human and wildlife health. This has created a demand for alternative flame retardants. Decabromodiphenylethane (DBDPE) was introduced as an alternative flame retardant to Decabromodiphenylether in the early 1990s. With increasing regulation and phasing-out of production of the commercial usage of PBDEs, it is expected that the production and usage of DBDPE will be predominant in the coming future. The structures of the two chemicals are similar, and hence DBDPE may also become an environmental contaminant of concern. Over the past 20 years, PBDEs have been shown to be ubiquitously present and persistent in the environment. In 2003, DBDPE was discovered in the environment for the first time (Kierkegaard *et al.* (2004), Ricklund *et al.* (2008)).

Table 14 - Chemical properties of decabromodiphenylethane

Decabromodiphenylethane		
CAS Number	Log K_{OW}	Water Solubility [mg/l]
84852-53-9	11.3	almost insoluble
Formula	Molecular weight	Chemical structure
$C_{14}H_4Br_{10}$	971.27	

Motivation for choice: Decabromodiphenylethane is one of the newer flame retardants, which poses analytical challenges due to hydrophobicity and the related low water concentrations. The substance tend to be bound on particulate matter or hydrophobic surfaces and is hence a suitable candidate substance to assess the mechanism for sediment/biota monitoring.

2.2.13 Silver (Ag)

Silver occurs naturally in the environment, but it is also used in various businesses and industries, particularly photofinishing. A growing tendency is the use of silver in its nano-form for different applications due to is anti-bacteriological properties. Products with antimicrobial effect based on silver nanoparticles are increasingly used in Asia, North America and Europe. The use of silver nanoparticles incorporated in consumer products (textiles and plastics) has become common in the last years because of the biocidal effect of the silver ion. Industry makes use of this new technology in food contact applications, in the interior of automobiles such as steering wheels and in building materials such as sanitary tubing and coverings. Another field of application for products with antimicrobial effect based on silver ions is medical equipment such as catheters, infusion systems and medical textiles. The biocidal mechanism of silver-containing products results from a long term release of silver ions (Ag^-) by oxidation of metallic silver (Ag^0) in contact with water (Blaser *et al.* (2008), Flegal *et al.* (2007)).

Motivation for choice: Silver is monitored in the dissolved water phase and this requires an additional sample pre-treatment step, i.e. filtration and acidification. Furthermore, silver is the only metal, addressed in this study. Expected levels are likely to be very low.

2.2.14 Boron (B)

Boron is a nonmetallic element, which has five protons in its nucleus along with five to six neutrons, resulting in two stable isotope forms: ^{10}B (abundance of 19.8%) and ^{11}B (abundance of 80.2%), averaging its atomic weight at 10.81 Da. Boron exists in nature in the form of boric acid (H_3BO_3) or borates, mainly sodium borate ($Na_2B_4O_7 \cdot 10H_2O$), also known as borax. Boric acid and sodium borates are used as antibacterial and antifungal agents. Despite the fact that boron exists in fertilizers, where it is described as an essential constituent for the growth of plants and vegetation, boron contamination is a serious threat to crops, because they are very sensitive to high levels of boron in the irrigation waters. Boron is detected in surface water and groundwater in various locations around the world, including sea and river waters, where it is present mainly in the form of boric acid (Farhat *et al.* (2013)).

Motivation for choice: Boron is monitored in the dissolved water phase and this requires an additional sample pre-treatment step, i.e. filtration and acidification. Its analytical determination related to Ag, but boron is a non-metal.

2.2.15 Chloride (Cl^-)

Motivation for choice: Chloride measurements are carried out on a routine basis in water monitoring laboratories. The parameter has been included as a conservative parameter to better relate to various national measurements.

2.3 Site selection principle

The study design foresaw originally a maximum capacity for ca. 350 sampling stations, of which 250 stations were suggested for EU-27 and the rest other European countries, in case these countries wanted to adhere to the experiment. The number of sites to be assessed needed to be distributed over the countries considering the different size of a country in terms of geographical surface and population. Furthermore, an indicator for industrial and anthropogenic pressure had to be included. To this end, it was agreed to base the allocation on an arithmetic pooling of country surface (excluding eventual territories overseas), population and energy consumption expressed as kT of oil equivalent. The energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport (International Energy Agency (IEA Statistics © OECD/IEA, http://www.iea.org/stats/index.asp). The sampling stations were then distributed per country as listed in Table 15.

Based on this allocation, Member States were invited to provide contact persons, name and addresses of sampling stations as well as further information. Out of the 248 sampling stations allocated per country, the final selection included 220 stations of which 219 were assessed successfully.

Table 15 - Overview on allocated sample stations per country

Name of country	Number of stations proposed	Stations contacted successfully	Stations assessed
France	18	7	7
Germany	18	17	17
Spain	17	17	17
Italy	15	13	13
United Kingdom	15	15	15
Poland	13	0	0
Sweden	12	7	7
Finland	11	11	11
Romania	11	11	11
Netherlands	10	5	5
Czech Republic	9	9	9
Austria	8	8	7
Belgium	8	8	8
Greece	8	8	8
Hungary	8	8	8
Portugal	8	8	8
Bulgaria	7	7	7
Denmark	7	7	7
Ireland	7	7	7
Slovak Republic	7	7	7
Latvia	6	6	6
Lithuania	6	6	6
Estonia	5	5	5
Slovenia	5	0	0
Cyprus	3	3	3

Luxembourg	3	4	4
Malta	3	3	3
SubTOTAL1	*248*	*207*	*206*
Non EU			
Norway	8	8	8
Iceland	6	5	5
SubTOTAL2	*14*	*13*	*13*
	TOTAL	***220***	***219***

Table 16 - Application of various site selection principles

Order per surface			*Order per population*			*Order per population density*			*Order per energy use*			*Allocation based on average**	
State	km²	Number of stations	Name of country	Population	Number of stations	Name of country	Population density	Number of stations	Name of country	Energy use (kt of oil equivalent)	Number of stations	Name of country	Number of stations
France	674843	18	Germany	83,251,851	18	Malta	1,257.90	26	Germany	318,528.90	18	France	18
Spain	506030	18	France	63,182,000	18	Netherlands	393	16	France	256,217.20	18	Germany	18
Sweden	449964	18	United Kingdom	61,100,835	18	Belgium	336.8	16	United Kingdom	196,762.50	18	Spain	17
Germany	357050	18	Italy	58,751,711	16	United Kingdom	244.2	14	Italy	164,630.00	18	Italy	15
Finland	338145	18	Spain	45,061,274	16	Germany	233.2	14	Spain	126,519.90	18	United Kingdom	15
Poland	312683	12	Poland	38,625,478	16	Italy	191.6	12	Poland	93,987.20	12	Poland	13
Italy	301318	12	Romania	21,698,181	14	Luxembourg	173.5	12	Netherlands	78,174.80	12	Sweden	12
United Kingdom	244820	10	Netherlands	16,318,199	12	Czech Republic	130.1	10	Belgium	57,218.70	10	Finland	11
Romania	238391	10	Greece	10,645,343	8	Denmark	129	9	Sweden	45,408.30	10	Romania	11
Greece	131990	8	Portugal	10,409,995	8	Poland	123.5	9	Czech Republic	41,990.40	10	Netherlands	10
Bulgaria	110910	8	Belgium	10,274,595	8	France	115.5	9	Romania	39,416.70	9	Czech Republic	9
Hungary	93030	8	Czech Republic	10,256,760	8	Slovakia	111	9	Finland	33,169.90	9	Austria	8
Portugal	92391	8	Hungary	10,075,034	8	Portugal	110.1	9	Austria	31,657.60	9	Belgium	8
Austria	83871	8	Sweden	9,090,113	8	Hungary	108.3	9	Greece	29,438.80	8	Greece	8
Czech Republic	78866	8	Austria	8,169,929	8	Austria	97.4	8	Hungary	24,859.20	8	Hungary	8
Ireland	70273	7	Bulgaria	7,621,337	7	Slovenia	95.3	8	Portugal	24,095.90	8	Portugal	8
Lithuania	65303	7	Denmark	5,564,219	7	Romania	91	8	Denmark	18,605.50	7	Bulgaria	7
Latvia	64589	7	Slovakia	5,422,366	7	Spain	89.3	7	Bulgaria	17,480.20	7	Denmark	7
Slovakia	49037	7	Finland	5,157,537	7	Cyprus	85	7	Slovak Republic	16,722.60	7	Ireland	7
Estonia	45226	7	Ireland	4,234,925	7	Greece	80.7	7	Ireland	14,339.40	7	Slovak Republic	7
Denmark	43094	7	Lithuania	3,601,138	6	Bulgaria	68.7	6	Lithuania	8,387.60	5	Latvia	6
Netherlands	41526	7	Latvia	2,366,515	6	Ireland	60.3	6	Slovenia	6,968.80	5	Lithuania	6
Belgium	30528	5	Slovenia	1,932,917	5	Lithuania	55.2	5	Estonia	4,748.40	4	Estonia	5
Slovenia	20273	5	Estonia	1,415,681	5	Latvia	36.6	4	Latvia	4,219.80	4	Slovenia	5
Cyprus	9251	3	Cyprus	788,457	3	Estonia	31.3	4	Luxembourg	3,949.40	3	Cyprus	3
Luxembourg	2586	3	Luxembourg	448,569	3	Sweden	19.7	3	Cyprus	2,505.60	3	Luxembourg	3
Malta	316	3	Malta	397,499	3	Finland	15.3	3	Malta	799.6	3	Malta	3
												TOTAL	248
Non EU			**Non EU**			**Non EU**			**Non EU**			**Non EU**	
Turkey	783,562	12	Albania	3,600,523	12	Albania	125.2	12	Ukraine	115,472.10	12	Ukraine	11
Ukraine	603,700	12	Bosnia and Herzegovina	3,843,126	12	Bosnia and Herzegovina	75.2	12	Turkey	97,660.70	12	Turkey	9
Norway	324,220	8	Croatia	4,437,460	8	Croatia	77.7	8	Norway	28,244.90	8	Norway	8
Iceland	103,000	7	Iceland	307,261	7	Iceland	2.7	7	Switzerland	26,952.30	8	Bosnia and Herzego	7
Serbia	77,275	7	Republic of Macedonia	2,054,800	7	Republic of Macedonia	81.1	7	Serbia	14,449.70	7	Croatia	7
Croatia	56,542	5	Norway	4,525,116	5	Norway	14	5	Croatia	8,702.40	7	Albania	6
Bosnia and Herzegovina	51,129	5	Serbia	7,120,666	5	Serbia	85.4	5	Bosnia and Herzegovina	5,952.60	5	Iceland	6
Switzerland	41,290	3	Switzerland	7,507,000	3	Switzerland	176.8	3	Iceland	5,224.90	5	Serbia	6
Albania	28,748	3	Turkey	71,517,100	3	Turkey	93	3	Macedonia, FYR	2,780.60	3	Macedonia, FYR	5
Republic of Macedonia	25,713	8	Ukraine	48,396,470	8	Ukraine	80.2	8	Albania	1,717.20	3	Switzerland	5
												TOTAL	**70**

3 Sample collection and field work

3.1 Instructions and dispatch

Dispatch logistics and sample pick-up was organized by the JRC using a private courier service. The material for packaging as well as the respective sample containers were agreed among the analyzing laboratories. In addition, some control analyses on pre-conditioned containers were organized. The material together with the instruction were packed in thermo-insolated boxes (Figure 2).

Figure 2 – Packaging and dispatch material used in the pilot study

Each contact person established for the respective sampling station received from the JRC the following material:

- For water samples : 6 plastic bottles (1 L) and 4 aluminium bottles (1 L)
- For sediment samples : 1 square plastic bottle (500 mL)
- For biota sampling : 3 plastic bags

In addition, sampling stations where only water samples were foreseen, the participants received a sample container for a field blank, which was either in aluminium or plastic. All bottles dispatched were labeled with the name of the station and a unique identifier. For sampling stations where biota and/or sediment sampling was foreseen, no field balnk could be collected due to space restrictions. The participants were instructed, upon sampling, to prepare the pick-up of the samples using the cooling boxes received with the empty containers. Cooling elements to ensure a temperature of 10°C or below were supplied, too. The ready box needed to be placed in a carton box suitable for shipment with proper labeling. Upon contacting the JRC liaison staff, pick-up was arranged using a private courier services. Samples arrived within 48h at the JRC where they were immediately processed prior to analyses. In order to ensure speedy processing, ready packages were only on Mondays, Tuesdays or Wednesday. Sampling operations were conducted in May (first sampling: 7th May) to September 2012 (last sample 17th September). For logistic reasons during the summer period, it was decided not to take samples in the period from 10th July to 21st August.

To find a compromise between the need for harmonization of sampling and the necessity not to interfere too much with normal sampling programmes participants received only a set of generic guidelines. Thus, in the case of water sampling, participants were instructed to fill all sample containers received, with the exception of the field blank for which separate instructions were given to each participant. Since some compounds of interest might be enriched in the surface film, it was important to avoid water from the surface film and consequently, samples should be collected with a sampler that opens and closes beneath the water surface (at least 20 cm). If not available, a bottle should be immersed upside down, and turned below the surface. Sample containers were already conditioned for use, however it was strongly recommended to rinse each sampling bottle prior to filling with water from the sampling site. In order to avoid contamination with PFCs (one of the compound groups of interest) participants were asked to ensure that the sampling device did not contain parts in PTFE or similar and that during the sampling, the person collecting the sample did not wear PTFE-containing polymers or clothing which had been treated with stain or water repelling agents. Generally good sampling practice for the sampling of trace contaminants had to be followed and the provided pre-cleaned bottles had to be filled leaving an as small as possible headspace. In case that contact with PTFE-containing equipment was unavoidable, it had to be clearly indicated in the Sampling Bill.

Participants were asked to document each sample and sampling station carefully, using a sampling bill template provided by the JRC. The compiled sampling was sent to the JRC together with additional documentation (e.g. pictures taken during the sampling). This information can be found in the annex to this report.

Upon sampling, samples had to be stored in the dark at 4°C until dispatch.

For sediment samples, a 500 mL square plastic bottle was provided and to be filled with a grab sample. Sieving over a sieve with aperture of 2 mm was recommended.

For biota sampling, participants were invited to provide as a minimum a pool of 5 fish (approx. 500 g of fillet, 100 g from each fish) and the livers. No indications were given on the species, but non-migrating fish species such as carp or trout were recommended. For mussel tissue, 500 g was suggested as target quantity. No further instructions were provided.

Instructions for handling of the field blank were straightforward; participants were invited to open the bottle when sampling of the other samples started and to close it at the end of the operation. The participants were instructed to avoid cross-contamination e.g. by touching the cap without any precautions.

3.2 Received information

All information provided by the participants is compiled in the annex to this report. For confidentiality reasons, geographical coordinates are not readable, but are available to authorities from the participating Member States. The figure below illustrates the distribution of the sampling sites across Europe. A good coverage of typical European scenarios was achieved despite the fact that some countries were not included in the study. As can be seen from the sampling bills received, many participants documented also their sites with photographic material, additional site-specific measurements and supplementary information. The documentation received is sufficient to establish a permanent network of stations and a contact database, which will facilitate a watch list monitoring mechanism.

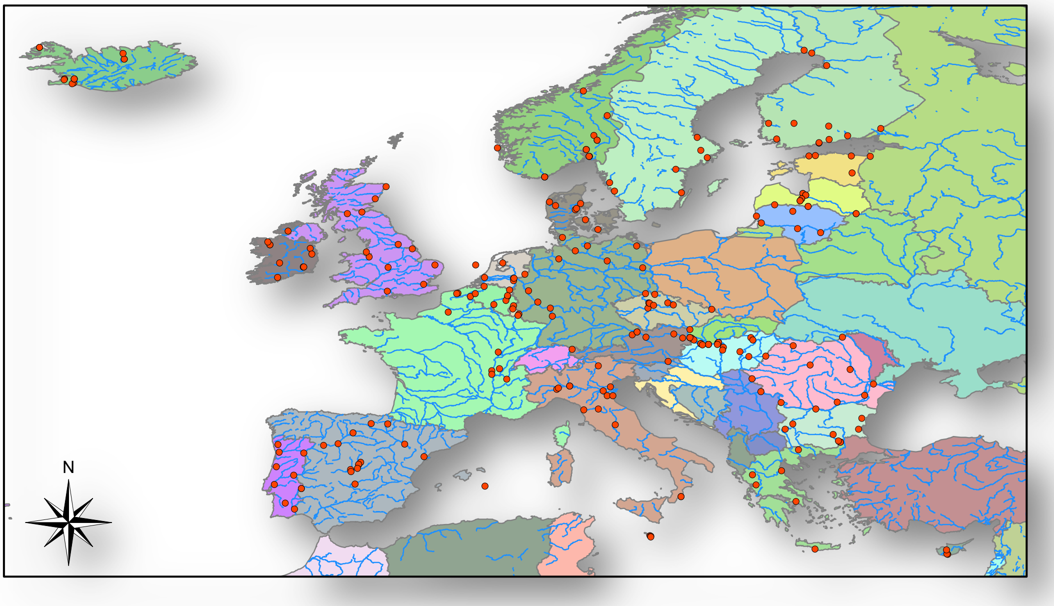


Figure 3 – Overview on the geographical distribution of the sampling stations used in the context of this feasibility study

It has to be stressed that the analytical information derived from the study aimed at the investigation of the feasibility of the approach. In cases of successful sampling and analysis, the summary data may be seen as a snapshot of the occurrence and levels of a given substance in Europe. In some other cases, apparent short-comings of the mechanism are put in evidence.

In all cases, the derived information is NOT APPROPRIATE to make a conclusive statement on the chemical water quality at the single sampling station for the investigated compound. The value of the exercise is the collection of a representative number of snapshots of the instantaneous occurrence of the investigated compounds, which, if taken collectively, well represents a European picture.

Nevertheless, the snapshot approach does not grasp seasonal variations, which may occur for some compound classes, e.g. some pesticides or selected pharmaceuticals.

4 Laboratory measurements

The measurements for the study compounds were carried out in the laboratories listed in the table below. Where available, already implemented and validated routine methods were used. In some other cases, methods had to be developed from scratch. All laboratories were invited to provide full documentation on the analytical method including performance data, material employed and instrumentation used. Amount and detail of the information provided differs greatly among the laboratories.

Table 17 – Laboratories and compounds analysed in the campaign

Substance	Technique	Laboratory	Country
Acesulfam	LC/MS	Umweltbundesamt GmbH	Austria
Benzotriazole	LC/MS		
Boron	ICP/MS	Vlaamse Milieumaatschappij	Belgium
Silver	ICP/MS		
Glyphosate	LC/MS	Povodí Labe	Czech Republic
AMPA	LC/MS		
Decabromodiphenylethane	GC/MS		European Commission
TCPP	GC/MS		
Perfluoropropionic acid	LC/MS		
Chloride	IC		
Sulfamethoxazol	LC/MS		
Carbamazepine	LC/MS		
10,11-Dihydro-10,11-dihydroxycarbamazepine	LC/MS		
Triclosan	LC/MS	Bundesanstalt für Gewässerkunde	Germany
Bisphenol A,	LC/MS		
MTBE	GC/MS	Rijkswaterstaat	The Netherlands
MTBE	GC/MS	NLS	United Kingdom
Glyphosate	LC/MS		

4.1 Analytical methods used

The following sections describe all details on the analytical methodology used by the laboratories listed above. In those cases, where a method was applied to the analyses of more than one substance, the method is described only once. In the case that the same substance was analysed by more than one laboratory, the two methods are described. The level of detail of information submitted varies. It reflects the information available to the JRC at the moment of drafting this report. Methods used by the JRC were subject to a full method validation following the principles of the EURACHEM/CITAC Guide on Quantifying Uncertainty in Analytical Measurement (2012). Given the high level of detail of the underlying method validation and uncertainty estimation, the findings were published as a self-standing report

(Tavazzi *et al.* (2013)). Since the JRC methods were developed in occasion of this experiment, this report may serve as an example of how to use this type of experimental work as pre-normative input to the development of standard methods by a standardisation body such as CEN or ISO, in case that this would be requested by future prioritisation exercises.

4.1.1 Acesulfame method used by Austria (Umweltbundesamt)

Acesulfame was analyzed by means of liquid chromatography tandem mass spectrometry (LC-MS/MS). Analysis was performed on a HP 1290 (Agilent) UPLC system that was coupled to a 4000 QRTAP mass spectrometer (Applied Biosystems). Eluents were water modified with 2mM ammonium actetate and methanol. The separation was performed using 2 x 100 mm Triart C18 column with 3 µm particle size (YMC) at 35°C. A sample volume of 10 µL was directly injected into the system. The flow rate was set to 300 µL min^{-1}. In the beginning Methanol was set to 2% and was increased to 75% (6 minutes). The ratio was decreased to 2% (0,1min) and was maintained for 3 minutes. The mass spectrometer was operated in multiple reaction monitoring (MRM) mode using the following parameters for negative electrospray ionization: spray voltage -4000V, temperature 750°C and curtain gas 30. The transitions 162 > 82 as quantifier and 162 > 78 as qualifier were used. Quantitation was performed using an external standard calibration. For quality assurance every tenth sample was spiked to check for matrix effects (standard addition).

4.1.2 Benzotriazoles method used by Austria (Umweltbundesamt)

1-H-benzotriazole, 4 –tolyltriazole and 5 - tolyltriazole were analyzed by liquid chromatography tandem mass spectrometry (LC-MS/MS) according to Weiss and Reemtsma (2005). Analysis was performed on a HP 1200 (Agilent) HPLC system that was coupled to a 4000 QRTAP mass spectrometer (Applied Biosystems). The separation was performed using a Pursuit Diphenyl column (Varian) with 3 µm particle size at 40°C. A sample volume of 100 µL was directly injected into the system. The flow rate was set to 300 µL min^{-1}. The eluents were water and methanol each modified with 0.1% formic acid. The initial conditions were 34% methanol with 0.1% formic acid. Methanol was increased to 53% in 5 minutes and was hold for 2.5 minutes. The ratio of methanol was decreased to 34% in one minute and was maintained for 6.5 minutes. The mass spectrometer was operated in multiple reaction monitoring (MRM) mode using following parameters for positive electrospray ionization: spray voltage 5500, temperature 700°C and curtain gas 30. The transitions for benzotriazol were 120 > 65 as quantifier and 120 > 92 as qualifier, for both tolyltriazole isomers the transitions were 134 > 77 as quantifier and 134 > 79 as qualifier. Quantitation was performed using an external standard calibration. For quality assurance every tenth sample was spiked to check for matrix effects (standard addition).

4.1.3 Boron and Silver method used by Belgium (VMM)

The method operated by VMM is based on ICP-MS. The VMM laboratory operates the respective method on a routine basis and has an accreditation according to ISO 17025. The Belgium BELAC is the responsible accreditation authority. During the exercise a conditioning was done by JRC upon instructions from VMM. For this purpose, to a 100 mL of filtered sample aliquot 1 mL HNO_3 conc. was added. Before filling the sample bottles with the ready sample, the bottle was rinsed with 50 mL of the filtered material. The following chemicals were used upon proposal from VMM:

- Merck suprapur ref. 1,00441.1000 .
- Filters Whatman art. 10463401 Polydisc GW Filter 50mm 0,45µ Nylon w QF
- Syringes VWR: ref. 613-3925 syringe PLASTIPAK 50 mL – Luer-Lock

The following performance characteristics of the analytical method used for the determination of Ag and B using ICP-MS were provided by VMM.

Table 18 - Performance characteristics of method used for B and Ag determination

Parameter	Unit	LOD	u (%)
Ag (dissolved)	µg/L	0.2	44
B (dissolved)	µg/L	30	25

4.1.4 MTBE method used by the Netherlands (RWS)

MTBE was analysed by RWS using a validated method operated on a routine level at RWS. No description of the analytical method was provided. The analytical method, however, has been validated in accordance with NEN 7777 (2011) and NEN 7779 (2008) and is operated in the RWS laboratories under ISO 17025 (2005) accreditation as part of a regular monitoring programme. The LoQ of the method was reported to be 0.01 µg/L.

4.1.5 MTBE method used by the United Kingdom (NLS)

NLS performed MTBE determination using a multi-compound method including approximately 50 other compounds including BTEX and chlorinated solvents. The method has been developed for both, fresh and saline waters and is using Gas Chromatography – Mass Spectrometry instrumentation. The following measurement principle has been applied: the sample vial is agitated and heated until the volatile compounds have diffused into the gaseous phase (headspace). A sample of the headspace is then taken and introduced into the GC. The GC is temperature programmed to separate the volatile compounds. Detection is by Mass Spectrometry. The range of application of the NLS methods is up to 10 µg/L and may be extended by dilution of the sample. LoD and LoQ have been reported to 0.1 µg/L.

Samples were stored at 5°C ± 3°C until analyses. Precision was reported to be better than 25% RSD. Bias was reported to be better than 20% Bias. The control of the method was ensured by participation in External Quality Control campaigns provided by AQUACHECK.

4.1.6 Glyphosate and aminomethylphosphonic acid (AMPA) method used by the Czech Republic (Podvodi Lab)

4.1.6.1 Short description of the method

The method used is based on ISO 21458 (2008) and the papers of Ibáñez *et al.* (2006) and Hanke *et al.* (2006). It has been adapted for direct injection of water samples after *in-situ* derivatization with 9-fluorenylmethyl-chloroformate chloride (FMOC-Cl) and subsequent HPLC separation with triple quadrupole tandem mass spectrometry detection in positive mode electrospray ionization (HPLC-ESI-MS/MS) with multiple-reaction monitoring (MRM), which have high selectivity, sensitivity and accuracy when isotopic labelled standards are being utilised.

4.1.6.2 Reagents

The following reagents were used:

- Analytical reagent grade hydrochloric acid (HCl) 35% (PN:10033-A35, Lach-Ner, s.r.o., Neratovice, CZ) diluted to 6 mol/L (254.6 mL of HCl up to 500 mL with water in 500 mL volumetric flask)
- 3 mol/L of potassium hydroxide (Merck PN: 1.05033.1000, 84.165 g/0.5 L)
- 0.2 mol/L di-Sodium tetraborate decahydrate (Merck PN: 1.06308.1000, 76.269 g/L)
- mol/L Ethylenediaminetetraacetic acid Tetrasodium salt Hydrate (Fluka, PN: 03699, 20.81 g/0.5L)
- LC-grade water obtained by purifying demineralised water (GORO, s.r.o., Prague, CZ) in a Ultra Pure Water System (Ultra Clear TWF UV plus TM, Siemens (SG Water), Barsbüttel, Germany) with UV lamp and TOC monitoring.
- the derivatization agent 9-fluorenylmethyl chloroformate chloride (FMOC Chloride), ≥99.0%, puriss p.a., for HPLC derivatization (Fluka (PN 23186-5G), 8 mmol/L was prepared in acetonitrile (207 mg/100 mL). It was deemed to be stable at least for one week at 4-10 °C.

- Mobile phase A was prepared from 5% vol. of methanol (mob.phase B) in 5 mmol/L ammonium acetate (puriss p.a. for mass spectrometry, Fluka PN: 73594-100G-F) and 0.025% ammonia (0.25 mL/L of ammonium solution (Suprapur, Merk PN: 1.05428.0250) in LC water) to give pH 9. The solution was used for three consequtive days at maximum.
- Mobile phase B was methanol (LC-MS Chromasolv, Fluka PN: 34966-2.5L) with 5 mmol/L ammonium acetate and 0.1% ammonia (1 mL/L of 25% ammonium solution).

4.1.6.3 Calibration Standards

Each neat standard was weighted and diluted in water (20.0 mg/20.00 mL) and mixtures of Glyphosate and AMPA made at concentration 0.8 µg/mL in methanol by microsyringe (8 µl/10 mL, stable at 4-8 °C for 6 months) and by diluting of this solution to 0.08 µg/mL in methanol (every month).

The following standards were used:

- Glyphosate, 99.3%, (Chem Service, PN: PS-1051, Lot: 452-156A, expiration 10/2013)
- AMPA, 99%, (Chem Service, PN: Met-1051A, Lot: 432-36C, expiration 11/2016)
- QC Standards:
    - Glyphosate, 99.2%, (Fluka, PN: 45521-250MG, Lot: SZB9320XV, expiration 16/11/2014
    - AMPA, 99%, (Aldrich, PN: 324817-250MG, Lot: MKBC7625, expiration --

4.1.6.4 Internal standards

A mixture of isotopic labelled standards (ILSs) is prepared from individual solutions to give concentration of 10 µg/mL in methanol and stored at 4-8 °C for at least 6 months.

The following standards were used:

- 1,2-$^{13}C_2$ ^{15}N Glyphosate, 99% TRC (PN: G765002) or Dr. Ehrenstorfer (PN: XA14050100WA, >98%, 100 µg/mL in water).
- ^{13}C ^{15}N AMPA (Dr. Ehrenstorfer PN: XA10205100WA, 100 µg/mL in water).

4.1.6.5 Apparatus

Waters Acquity UPLC chromatographic system with upgrade to 250 µL sample loop coupled to triple quadrupole tandem mass spectrometer Waters Premier XE operated in positive electrospray atmospheric pressure ionisation (ESI) in MRM mode were used for the measurement. Chromatographic separation was achieved using column XBridge C_{18}, 3.5µm, 30 mm x 2.1 mm connected with 10mm Guard column with the same stationary phase. The injection volume for LC-MS/MS analysis was 250 µL, injected by the mode full-loop needle overfill. The LC gradient for the separation was: from 0 to 3 min, isocratic 5% of B; at 3 min step to 30% of B, then linear gradient from 3 to 6 min of B from 30 to 50%; from 6 to 7 min, a linear increase of B from 50 to 100%. Initial conditions were re-established in 0.1 min. Run time of LC and MS method was 7.0 min. Total cycle time 11 min 36 s. Divert valve was activated to waste from 0 to 4.46 min and after the last peak at 6.65 to 7.0 min. The flow rate was 0.3 mL/min and the column temperature was 40 °C.

Table 19 - MRM transitions and MS parameters of the measured FMOC-derivatized substances

Time (min)	Substance	Confirmation transition	CV [V]	CE [eV]	Quantification transition	CV [V]	CE [eV]	MRM seg.	IS
5.0	Glyphosate	392.0 > 178.8	21	26	392.0 > 213.8	21	10	1	
5.0	1,2-$^{13}C_2$ ^{15}N glyphosate, IS1	395.0 > 90.8	26	19	395.0 > 181.8	26	25	1	1
6.0	AMPA	334.2 > 111.8	24	13	334.2 > 155.8	24	9	2	
6.0	^{13}C ^{15}N AMPA, IS 2	336.0 > 111.8	24	13	336.0 > 157.8	24	9	2	2

Positive mode, Dwell time 50 ms, Inter-scan delay 20 ms, Inter-channel delay 10 ms

The MS/MS instrument operated in positive mode with 1.5 mass unit resolution and optimized parameters were: ESI capillary voltage +3500 V, Extractor 3, RF Lens 0.1 V, ion source temperature 150 °C, Desolvation Temperature 450 °C, Desolvation nitrogen flow 700 L/h, Cone nitrogen flow 100 L/h, collision gas flow (Argon 5.5, SIAD) 0.02 mL/min, Entrance-2, Exit 2 , Ion Energy-1 0.5, Ion Energy-2 2.0, Photomultiplier voltage 675 V.

MS substance-specific parameters for transitions from Precursor ions ($[M+H]^+$) to Product ions are given in Table 19.

50 mL Glass stop-cock conical flask (Glassco, Vitrum, Prague, CZ) were used for in-situ derivatization. All glassware (flasks, 10 mL pipettes, volumetric flasks) were hand-washed without using aggressive cleaning agents. pH-meter EUTECH Instruments PC 510, variable pipette 100-1000 µL (TreffLab, Transferpette) with 1 mL polypropylene tips.

4.1.6.6 Sample pre-treatement

Samples were stored in the refrigerator at a temperature around 4 °C immediately after dispatch, till the analysis. When analyses were not performed within a week, samples were frosted at minus 18 °C. 8 mL aliquot of water sample was dispensed by a 10 mL glass pipette into 50 mL Glass stop-cock flasks. In order to eliminate possible interaction of Glyphosate with matrix components (divalent cations, organic matter) acidification to pH 1 was realized by addition of 160 µL of 6 mol/L hydrochloric acid and thorough circular mixing. 10 µl of internal standard solution of 1 ng/µL of ILS was added. After approximately 15 min neutralization to pH 7-8 with 380 µL of 3 mol/L of potassium hydroxide solution was made and the mixture was mixed. (This step is necessary, to optimize by pH-meter, after each new preparation of HCl or KOH solutions or when atypical water pH is expected, as in-situ derivatization with FMOC-Cl occurs at approximately pH 9 of the reaction mixture.). 400 µL of 0.1 mol/l EDTA solution was added and mixed. Subsequently 1 mL of 0.2 mol/L tetraborate solution was added and mixed vigorously by circular shaking, so that minimum droplets, left on the flask walls. Finally 1 mL of 8 mmol/L acetonitrile solution of FMOCCl was dispensed, closed tightly by a glass stopper and mixed properly. White precipitation appears immediately unless proper reaction conditions (pH, acetonitrile content, sufficient FMOCCl concentration) preserved. After 2 hours at room temperature the reaction was stopped by acidifying the solution to pH 3 by adding 100 µL of formic acid. The solution was filtered prior to the LC-MS/MS analysis by Nylon 0,2 micron syringe filters in 3 mL polypropylene syringe (B-Braun) and filled in MS-certified 2 mL clear glass vial with pre-slit PTFE/silicone septa screw closures (National Scientific, PN: C4000-95W, AP Servis, CZ) and kept at 4 °C in thermostat up to seven days.

4.1.6.7 Calibration and sample measurement

The calibration was performed on seven concentration levels (0, 25, 50, 100, 200, 500, 1000, 2000 ng/L) made by spiking of corresponding volumes of working standard solutions of 0.8 µg/mL and 0.08 µg/mL, respectively, and checked by QC standards at 100 and 1000 ng/L, by the whole procedure and quantified using internal standard method. The calibration curves were calculated using a weighted (1/X) linear regression model. All samples, calibration and QC standards were measured in triplicate and averages calculated.

4.1.6.8 Quality Control

Calibration model was constructed each time the sample batch was measured. Good linearity defined by minimum 0.99 correlation coefficient and concentrations of QC standards within range of 75-120 % fulfilled. The analysis of unknown samples was repeated, when recovery of ILS in unknown samples were not in the range of 70-130 % (pH adjustment related problems, high salinity samples).

The limit of quantification (LOQ) was defined as the lowest calibration level of linear calibration curve with required uncertainty of 30 % and minimal signal to noise ratio of 10 for quantification transition and was 25 ng/L for Glyphosate and AMPA, respectively. Method detection limit (MDL or LOD) was defined as minimal signal to noise 3:1 and was 10 ng/L for both substances.

Selectivity of the measurement was assured by MRM measurement and the ratio of chromatographic peak areas of quantification and qualification transitions (±20 %) and retention times of the compounds (retention times precision better then 2 %).

Expanded standard measurement uncertainty (30 % for Glyphosate and AMPA) was composed from experimentally determined intermediate measurement precision (QC Standards), which covers uncertainty of Reference Material, preparation of calibration and QC standards, measurement repeatability, and from successful results of Proficiency Testing Trials (spiked water organised by RTC in 2009, the whole matrix water by AQS BW Sttutgard in 2010, interlaboratory comparison with Povodi Vltavy in 2011, Aquacheck 2012).

Figure 4 -Liquid chromatograph with triple quadrupole MS/MS
(Waters Acquity UPLC with Quattro Premier XE).

4.1.7 *Glyphosate and aminomethylphosphonic acid (AMPA) method used by the United Kingdom (NLS)*

Mass labeled internal standards which are representative of the compounds determined are added to the aqueous sample. Any Glyphosate and AMPA present in the sample is derivatised using 9-Fluorenylmethyl chloroformate (FMOC-Cl) and extracted by means of Solid Phase Extraction (SPE) using a vacuum manifold. The SPE cartridges are eluted with methanol and the solvent extract -evaporated to low volume (50 uL) with a stream of nitrogen gas in a Turbo-vap evaporation system. The concentrated extract is reconstituted with mobile phase solution and an aliquot of the extract is injected onto a Liquid Chromatograph where the compounds of interest are separated on a Hypersil GOLD (C_{18}) column. The eluent from the column is transferred into a Mass Spectrometer and determined using Electrospray Ionisation operating in negative ion mode.

The method is applicable from 0.1 µg/L up to 10 µg/L. The range of application can be extended by dilution of the sample. MRV is 0.1 µg/L for glyphosate in freshwater and 0.2 µg/L for AMPA in freshwater.

Within Laboratory Quality Control & Performance Criteria:

- Total Error Target: < 50%
- Bias Target: < 20%
- Precision Targets: < 15% RSD

4.1.8 *Bisphenol-A, triclosan and triclocarban method used by Germany (BFG)*

4.1.8.1 LC-MS analysis

The HPLC system consisted of a G1367E autosampler, a G1312B binary HPLC pump, a G1379B degasser and a G1314B column oven (all Agilent 1260 SL Series, Waldbronn, Germany). The detection was performed on an API 5500 QTrap mass spectrometer (Applied Biosystems, Foster City, CA, USA).

Separations were performed using a Synergi-Luna-HST column (2 mm i.d., length 50 mm, particle size 2.5 µm) and a SecurityGuard (both Phenomenex, Torrance, CA, USA) at 20 ± 2 °C. The flow rate was 0.4 mL/min. The HPLC gradient was established by mixing two mobile phases. Phase A consisted of MilliQ water supplemented with 40 mg/L ammonia acetate and phase B consisted of pure methanol. Chromatographic separation was achieved with the following gradient: 0-0.8 min: 10% B; 0.8 min -> 1.2 min: 10% -> 98% B; 1.2-4.8 min: 98% B; 4.8 min -> 4.9 min: 98% -> 10% B; 4.8-8 min: 10% B (Table 20). One hundred µL of each water sample was directly injected without any sample pre-treatment.

Table 20 - LC gradient profile used for determination of triclosan and triclocarban

Time (min)	Flow Rate (µL/min)	Solvent B (%)
0.0	400	10
0.8	400	10
1.2	400	98
4.8	400	98
4.9	400	10
8.0	400	10

The tandem mass spectrometer (API 5500 Qtrap with turboionspray ionization, Applied Biosystems, Foster City, CA) was operated in negative ion mode using nitrogen as collision gas and multiple reaction monitoring (MRM) for quantification. Parameters adjusted were collision gas (CAD), medium; curtain gas (CUR), 55 psi; ion source gas 1 (GS1), 40 psi and ion source gas 2 (GS2), 50 psi; source temperature (TEM), 550 °C; entrance potential (EP), -10 V. The ionspray voltage (IS) was adjusted to -4500 V and the interface heater (ihe) set on. Two MRM transitions for each substance were monitored for identification and quantification of the analytes. Parameters such as declustering potential, collision energy, and cell exit potential were optimized in the auto-tuning routine of the Analyst 1.6.1 software. Table 21 gives an overview of all MRM parameters.

4.1.8.2 Calibration

The calibration was performed using an internal standard. Stock solutions were produced by dissolving 1 mg of the analytes in 10 mL methanol each. The stock solutions were stored at 4°C in the dark and were renewed after 6 months. Calibration standards (0, 1, 3, 10, 30, 100, 300, and 1000 ng/L) were made by serial dilution of the stock solutions in MilliQ water. 100 ng/L of each surrogate standard were added to the calibration standards. The calibration curves were calculated using a weighted (1/X) linear regression model.

Table 21 - MRM transitions and MS parameters of the target analytes

Analyte	**Q1**	**Q3**	**CE [eV]**	**DP [V]**	**CXP [V]**	**IS**
Bisphenol A	227	133	-33	-110	-10	Bisphenol A –d$_{16}$
	227	211	-43			
	227	212	-26			

Analyte	Q1	Q3	CE [eV]	DP [V]	CXP [V]	IS
Bisphenol A –d_{16}	241	142	-42	-110	-10	
	241	222	-26			
Triclosan	287	35	-40	-45	-10	Triclosan $^{13}C_{12}$
	289	35	-40			
Triclosan $^{13}C_{12}$	299	35	-40	-45	-10	
	301	35	-40			
Triclocarban	313	160	-22	-90	-10	Triclocarban-d_4
	315	162	-22			
Triclocarban-d_4	317	160	-22	-90	-10	
	319	162	-22			

4.1.8.3 Method validation

The method was primarily validated by spiking 1 L of surface water with the stock solutions to produce a concentration of 100 ng/L. The spiked water samples (n = 66) were also directly injected into the LC-MS/MS system. Excellent recoveries of 100 ± 12% and 112 ± 3% were achieved for triclosan and triclocarban, respectively (Table 22). For bisphenol A no recoveries could be calculated due to high blank values of the sampling bottles (see below).

Table 22 - Recoveries (%) of triclosan and triclocarban in spiked surface water samples

	Triclosan	Triclocarban
n	66	66
Mean	100%	112%
SD	12%	3%

The limit of quantification (LOQ) was defined as a signal-to-noise ratio of 10:1 for the dominant transition used for quantification. The second transition used for confirmation had to fulfill the criteria of a signal-to-noise ratio of 3:1. The signal-to-noise ratios were calculated from the chromatograms of the internal standard calibration and were also controlled in the native samples. The LOQ was 5 ng/L for all target compounds.

4.1.9 Perfluoropropionic acid (PFPrA) method used by the European Commission (JRC)

4.1.9.1 Chemicals

The following standards were used:

- Pentafluoropropionic acid (CAS 422-64-0), lot 78896PM, purity 98.9%, density 1.56 g/mL, release date March 2011, code 245917, Sigma Aldrich, MO (USA);
- Perfluoro-n-[1,2,3,4-13C_4] butanoic acid, 50 ± 2.5 µg/mL, lot MPFBA0911, purity >99% ^{13}C(1,2,3,4-13C_4), expiry date September 2014, code MPFBA, Wellington Laboratories, Southgate (CA).

The following reagents were used:

- Ethyl acetate for traces analysis (Carlo Erba Reactifs-SDS);
- Methanol, code 701091.1612, (LC-MS) PAI, Panreac Quimica, Barcelona (Spain);
- MilliQ water obtained from a MilliQ water system, Millipore, Bedford, MA (USA);
- Hexane for analysis of dioxins, furans and PCB (Sigma-Aldrich, Germany);
- Ammonium acetate 99.99+%, code 431311, Sigma Aldrich, MO (USA);

- Acetonitrile, code 701881.1612, (LC-MS) PAI, Panreac Quimica, Barcelona (Spain);
- Acetic acid, code 07692, TraceSelectUltra for trace analysis, Sigma Aldrich, MO (USA);
- Ammonium hydroxide, 28% in water, 99.99 metals basis, code 338818, Sigma Aldrich, Germnay
- OASIS HLB cartridges 6CC (0.2 g), code WAT106202, Waters, Milford, MA, USA .
- OASIS WAX cartridges 6 CC (0.15 g), code 186002493, Waters, Milford, MA USA

Standard solutions were produced according to the following instructions:

PFPrA stock standard solution (1000 µg/mL)
a. Transfer 0.0064 mL of PFPrA in a 10 mL volumetric flask.
b. Dissolve and dilute to volume with water and mix.

PFPrA intermediate standard solution 1 (10 µg/mL)
a. Transfer 0.01 mL of PFPrA stock standard solution in a 10 mL volumetric flask.
b. Dissolve and dilute to volume with water and mix.

PFPrA intermediate standard solution 2 (500 ng/mL)
a. Transfer 1 mL of PFPrA stock standard solution in a 20 mL volumetric flask.
b. Dissolve and dilute to volume with water and mix.

PFPrA intermediate standard solution 3 (100 ng/mL)
a. Transfer 0.01 mL of PFPrA stock standard solution in a 10 mL volumetric flask.
b. Dissolve and dilute to volume with water and mix.

PFPrA intermediate standard solution 4 (10 ng/mL)
a. Transfer 0.1 mL of PFPrA stock standard solution in a 10 mL volumetric flask.
b. Dissolve and dilute to volume with water and mix.

Internal standard working solution (PFBA $^{13}C_4$, 50 ng/mL)
a. Transfer 0.5 mL of PFBA $^{13}C_4$ 100 µg/mL and into a 10 mL volumetric flask.
b. Dilute to 10 mL with methanol and mix.

4.1.9.2 Apparatus and equipment

– Analytical balance:	model AX204, Mettler-Toledo SpA
– Automatic pipettes:	Eppendorf research (Milan, Italy).
– Microsyringes:	Microliter Syringes, Hamilton (Reno, CA, U.S.A.).
– Autosampler vials for LC-MS:	Micro-V vials target Dp clear, 1.5 mL, 12x22 mm National Scientific (Germany)
– Volumetric flasks:	Grade A various sizes, Duran®.
– Volumetric pipettes:	Grade A various sizes, Duran ®

- Dionex Autotrace AT280 automated SPE system (Thermo Scientific, Waltham, MA, USA)
- Vortex Genius,Ika, Staufen, Germany;

4.1.9.3 Instrumental equipment and conditions

UHPLC equipment and conditions are listed below (Table 23). The chromatography was performed in gradient mode according to the scheme shown in:

Table 23 - UHPLC equipment and conditions

Parameter	Value
Pumps:	Binary Solvent Manager, Model UPB, Waters (Milford, MA, USA).
Autosampler:	Sample Manager, Model UPA, Waters (Milford, MA, USA).

Parameter	Value
Detector:	QTRAP 5500, Applied Biosystems MDS SCIEX, (Foster City, CA, U.S.A) equipped with Turbo V™ ion source.
Flow rate:	400 µL/min
Injection volume:	5 µL
Analytical column:	Triart C18, 1.9 µm, 50 x 2.1 mm, YMC (Dinslaken, Germany) equipped with UHPLC column saver (Fortis, Technologies)
Mobile phase:	5 mM ammonium acetate – acetonitrile -methanol (90:5:5, % v/v/v)

Table 24 - Gradient used for determinations

Time	A	B	Flow (mL/min)
0	90	10	0,4
1	90	10	0,4
9	5	95	0,4
9.1	5	95	0,4
9.2	90	10	0,4
12	90	10	0,4

Under these conditions the retention time of PFPrA was about 1.3 min, respectively. The run time was about 12.5 min.

4.1.9.4 QTRAP 5500 operative condition

An ABSciex QTRAP5500 mass spectrometer equipped with Turbo V™ ion source was used. The instrument was previously tuned and calibrated in electrospray mode using PPG's. Prior to analysis all the specific parameters were optimised infusing a 1 µg/mL standard solution of analytes and I.S.s.

The eluate from the column was introduced directly into the ion source. The rapid desolvatation and vaporization of the droplets minimizes thermal decomposition and preserved their molecular identity. The data were collected using the software program Analyst 1.5.1. All calculations were based on chromatographic peak area ratios for the MRM precursor-product ion transitions for analytes versus I.S.s.
The general operating conditions were as in Table 25.

Table 25 – QTRAP 5500 operative conditions for PFPrA analysis

Parameter	Value
Scan Type	Scheduled MRM
Polarity	Negative for PFPrA
Ion Source	Turbo Spray
Resolution Q1	Unit
Resolution Q3	Unit
MR Pause	5.0000 msecparan
CUR	25.00
CAD	Medium

Parameter	Value
TEM	550.00
IS	-4500.00
EP	-10.00
CXP	-11.00
GS1	55
GS2	45

4.1.9.5 Selectivity

For the identification of PFPrA two MRM transitions between the precursor ions and two most abundant fragment ions were monitored. The first one was used for quantification purposes, whereas the second one was to confirm the presence of the target compounds in the sample. The quantified analyte was identified through retention time comparison of the corresponding standard and the isotopic ratio between two ions recorded (±30%). The selected mass transitions used for quantification were 163/119 for PFPrA and 217/172 for PFBA $^{13}C_4$ ().

Table 26 - Selectivity data for PFPrA

Analyte	Time(min)	DP	CE
PFPrA (163>119)	1.3	-113	-20
PFPrA (163>69)	1.3	-113	-45

4.1.9.6 Limit of Detection (LoD) and Limit of Quantification (LoQ)

All limits of detection and quantification of JRC employed methods were performed using the following approach and employing blank samples. From the data achieved from these experiments the mean value of the blank samples (b) and standard deviation (SD) were calculated. LOD and LOQ were estimated using the following formulas, recommended by Eurachem Guide (Eurachem Group, 1998).

LOD=b+3SD;

LOQ=b+10SD.

The results of the LOD and LOQ estimation for every analyte are shown in Table 27.

Table 27 - LoD and LoQ values for analyte PFPrA

Analyte	Nr of blanks analyzed	LoD (ng/L)	LoQ (ng/L)
PFPrA	5	0.59	1

4.1.9.7 Linearity study for PFPrA

For PFPrA the linearity was studied in the concentration range 1-200 ng/L. In order to verify the linearity of the calibration curve, a blank sample spiked only with labelled internal standard and six spiked MilliQ water samples (i.e.: 0, 1, 5, 10, 20, 100, 200 ng/L) were extracted and analyzed in three replicates on five different days. The received calibration curves are reported in the Annex of this report. The mean R^2 values (calculated over five calibration curves) were ≥0.99. Results are reported in Table 28.

Table 28 - Coefficient of determination ($R^{2)}$ values for PFPrA calibration curves on different days

Validation day	PFPrA
1	0.9990
2	0.9990

Validation day	PFPrA
3	0.9970
4	0.9970
5	0.9980
Average R^2	0.9980
RSD%	0.1

The study of the distribution of residuals revealed randomly dispersed shapes around the horizontal axis, proving the pertinence of the linear regression model for interpreting the data. The received residual plots are reported in the annex to this report.

4.1.9.8 Working Range

The working range is defined as the range of concentrations where the chosen calibration curve is valid. The working range of these methods were therefore defined by the limits of quantification and highest points in the respective calibration curve. Table 29 summarizes the working range established.

Table 29 - Working ranges for the PFPrA method

Analyte	Working range (ng/L)
PFPrA	1.0-200

4.1.9.9 Trueness

The significance test (e.g. t-test) was used to decide weather the difference between the mean values of spiked water quality control samples (evaluated on n relicates) and their nominal concentration was significant, using the following formula:

$$t = \frac{(x - \mu)\times\sqrt{n}}{s}$$

where *(x)* is the mean value of *(n)* samples with standard deviation *(s)* and *(μ)* is the nominal concentration. The confidence level for critical t-values were chosen to be 0.05 (95%).

Fifteen quality control samples at low and high concentration levels (i.e.: about 3 and 150 ng/L) were extracted and analysed and the back calculated concentrations evaluated for demonstrating the truthfulness of the null hypothesis (H_0: the analytical method is not subject to systematic error).

As reported in Table 30, the calculated t-values were lower than the critical values for all the analytes at all the studied concentration levels, demonstrating the absence of evidence of systematic errors in analyte quantification.

Table 30 - Results of the trueness study in the different concentration levels

	Mean value (ng/L)	N	Degrees of freedom	Theoretical value (μ) ng/L	STD of samples ng/L	t-value	Critical t_4 P=0.05	Decision
PFPrA	3.06	15	14	3	0.25	0.96	2.14	OK
	150.07	15	14	150	11.98	0.02	2.14	OK

4.1.9.10 Recovery

Recovery was evaluated by extracting and analysing in triplicate MilliQ water samples (0.1 L volume for PFPrA) spiked, before extraction, with native analytes only. Internal standards were then added to the extracts at the end of sample preparation with the aim of allowing the estimation of analytes loss during processing.

The recovery has been evaluated comparing the ratios analyte/IS in spiked samples to the same ratios obtained by analysing a standard solution containing native compounds and labelled ones at the same concentration levels, not subject to any handling. The spiking levels were 30 and 150 ng/L for PFPrA. The results of recovery experiments are reported below.

Table 31 - Recovery of analytes at different concentration levels

Analyte	Spike level	Mean Recovery (%) (n=9)	SD (ng/L)	RSD%
PFPrA	Low	120.4	15.3	12.7
	High	94.7	7.2	7.5

4.1.9.11 Repeatability, intermediate precision, and day to day variation

For repeatability, intermediate precision and day to day variation estimation, quality control samples at two concentration levels were tested on five different days. For each sample three replicate injections were made. Using one-way ANOVA the results were obtained as shown in Table 32.

Table 32 - Repeatability, day-to-day and intermediate precision variation in two different concentration levels

Analyte	Lower concentration level			Higher concentration level		
	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)
PFPrA	8.1	6.5	2.4	7.9	11.4	13.8

4.1.9.12 Sample storage stability study

Stability of PFPRa analytes was not investigated in this exercise, but extrapolated from a previous study on PFOS/PFOA [Gawlik et al. (2012)].

4.1.10 Sulfamethoxazol and carbamazepine method used by the European Commission (JRC)

4.1.11 Chemicals

The following chemicals and reagents were used:

- Carbamazepine (CAS 298-46-4), lot 100M1207V, purity (TLC) 100%, retest date October 2016, code C4024, Sigma Aldrich, MO (USA);
- Carbamazepine d_{10} 100 µg/mL in acetonitrile–D3, lot SCJK-006, purity ≥ 98%, expiry date May 2015, code DLM-2806-S, Cambridge Isotope Laboratories, Inc., Andover, MA (USA);
- 10,11-Dihydro-10,11-dihydroxy-carbamazepine, lot 1071-050A1, purity 99.9%, retest date May 2015, Spectra 2000 SrL, Rome (Italy);
- Sulfamethoxazole (CAS 723-46-6), lot 80416, purity 99.5 ± 0.5%, Dr. Erhrenstorfer, Ausburg (Germany);

- Sulfamethoxazole (Ring-$^{13}C_6$, 99%) 100 µg/mL in acetonitrile, lot SCJI-015, purity ≥ 98%, expiry date October 2019, code CLM-6944-S, Cambridge Isotope Laboratories, Inc., Andover, MA (USA);
- Ethyl acetate for traces analysis (Carlo Erba Reactifs-SDS);
- Methanol, code 701091.1612, (LC-MS) PAI, Panreac Quimica, Barcelona (Spain);
- MilliQ water obtained from a MilliQ water system, Millipore, Bedford, MA (USA);
- Hexane for analysis of dioxins, furans and PCB (Sigma-Aldrich, Germany);
- Ammonium acetate 99.99+%, code 431311, Sigma Aldrich, MO (USA);
- Acetonitrile, code 701881.1612, (LC-MS) PAI, Panreac Quimica, Barcelona (Spain);
- Acetic acid, code 07692, TraceSelectUltra for trace analysis, Sigma Aldrich, MO (USA);
- Ammonium hydroxide, 28% in water, 99.99 metals basis, code 338818, Sigma Aldrich, Germnay;
- OASIS HLB cartridges 6CC (0.2 g), code WAT106202, Waters, Milford, MA, USA;
- OASIS WAX cartridges 6 CC (0.15 g), code 186002493, Waters, Milford, MA USA.

4.1.11.1 Laboratory equipment

The same equipment was used in the case of PPRA (page 37). Under these conditions the retention time of CBZ, CBZ-DiOH, and SMZ were about 6.0, 4.6, and 2.9, respectively. The run time was about 12.5 min.

4.1.11.2 QTRAP 5500 operative condition for

The same ABSciex QTRAP5500 mass spectrometer equipped with Turbo V™ ion source was used as in the case of PRPRP. The general operating conditions were as follows:

Table 33 – QTRAP 5500 operative condition for sulfamethoxazol and carbamazepine method

Parameter	Value
Scan Type	Scheduled MRM
Polarity	Positive for CBZ, CBZ-DiOH and SMZ
Ion Source	Turbo Spray
Resolution Q1	Unit
Resolution Q3	Unit
MR Pause	5.0000 msecparan
CUR	25.00
CAD	Medium
TEM	550.00
IS	+4500.00
EP	+10.00
CXP	+13.00
GS1	55
GS2	45

4.1.11.3 Selectivity

For the identification of CBZ, CBZ-DiOH, and SMZ two MRM transitions between the precursor ions and the two most abundant fragment ions were monitored. The first one was used for quantification purposes, whereas the second one was to confirm the presence of the target compounds in the sample. The quantified analyte was identified through retention time comparison of the corresponding standard and the isotopic ratio between two ions recorded (±30%).

The selected mass transitions used for quantification were 237.00/194.00 for CBZ, 271.00/180.00 for CBZ-DiOH, 254.00/156.00 for SMZ, 247.00/204.00 for CBZ d_{10}, 260.00/98.00 for SMZ $^{13}C_6$.

Table 34 - Selectivity data for CBZ, CBZ-DiOH, and SMZ

Analyte	Time(min)	DP	CE
CBZ (237>194)	6	250	28
CBZ (237>165)	6	250	60
CBZ-DiOH (271>180)	4.6	80	47
CBZ-DiOH (271>180)	4.6	80	19
SMZ (254>156)	2.9	150	22
SMZ (254>156)	2.9	150	38

4.1.11.4 Limit of Detection (LoD) and Limit of Quantification (LoQ)

Limits of detection and quantification were estimated by analysing blank samples applying the same principles and calculations outlined above. The results of the LOD and LOQ estimation are shown in the Table 35.

Table 35 - LOD and LOQ values for CBZ, CBZ-DiOH, and SMZ

Analyte	Nr of blanks analyzed	LoD (ng/L)	LoQ (ng/L)
CBZ	5	0.03	0.07
CBZ-DiOH	5	0.10	0.26
SMZ	5	0.05	0.13
TCPP	7	2.00	4.00

4.1.11.5 Linearity study

For CBZ, CBZ-DiOH and SMZ the linearity was studied in the concentration range 0.2-100 ng/L. In order to verify the linearity of the calibration curve, a blank sample spiked only with labelled internal standard and five spiked MilliQ water samples (i.e.: 0, 0.2, 1, 2, 40, 100 ng/L) were extracted and analyzed in three replicates on five different days. The calibration curves are reported in the Annex 1.

Table 36 - Coefficient of determination (R^2) values for CBZ, CBZ-DiOH and SMZ calibration curves on different days

Validation day	CBZ	CBZ-DiOH	SMZ
1	1.0000	0.9962	0.9988
2	0.9993	0.9991	0.9986
3	0.9988	0.9893	0.9977
4	0.9993	0.9868	0.9991
5	0.9900	0.9860	0.9784
Average	0.9975	0.9915	0.9945
RSD%	0.4	0.6	0.9

The study of the distribution of residuals revealed randomly dispersed shapes around the horizontal axis, proving the pertinence of the linear regression model for interpreting the data. The received residual plots are reported in the annex to this report.

4.1.11.6 Extension of the calibration for CBZ, CBZ-DiOH and SMZ analysis

Considering the environmental concentrations of the analytes of interest reported in literature, we initially set the upper limit of the calibration curve at 100 ng/L. In order to be able to quantify real water samples with analyte concentrations above the reported upper limit of the calibration curve (100 ng/L), an extended calibration curve (up to 2000 ng/L) was evaluated. A blank sample spiked only with labelled internal standard and six spiked MilliQ water samples (i.e.: 0, 0.2, 2, 40, 100, 1000, 2000 ng/L) were extracted and analyzed in three replicates on a single day basis. Even in the wider concentration range, the coefficient of determination (R^2) resulted to be >0.99 and the residual plot showed a random distribution against x axis. The calibration curves of the extended linearity study are shown in the in annex to this report.

4.1.11.7 Working Range

The working range is defined as the range of concentrations where the chosen calibration curve is valid. The working range of these methods were therefore defined by the limits of quantification and highest points in the respective calibration curve. Table 5 summarizes the working ranges established for the developed procedures.

Table 37 - Working ranges for CBZ, CBZ-DiOH and SMZ

Analyte	Working range (ng/L)
CBZ	0.07-2000
CBZ-DiOH	0.26-2000
SMZ	0.13-2000
TCPP	4.0-3000

4.1.11.8 Trueness

Fifteen quality control samples at low and high concentration levels (i.e.: about 3 and 90 ng/L) were extracted and analysed and the back calculated concentrations evaluated for demonstrating the truthfulness of the null hypothesis (H_0: the analytical method is not subject to systematic error). As reported in the table below, the calculated t-values resulted to be lower than the critical values for all the analytes at all the studied concentration levels, demonstrating the absence of evidence of systematic errors in analyte quantification.

Table 38 - Results of the trueness study in the different concentration levels

Analyte	Mean value ng/L	N	Degrees of freedom	Theoretical value (μ) ng/L	STD of samples (s) ng/L	t-value	Critical t_4 P=0.05	Decision
CBZ	3.24	15	14	3.12	0.43	1.09	2.14	OK
	91.26	15	14	93.6	10.4	-0.87	2.14	OK
CBZ-DiOH	2.95	15	14	2.94	0.378	0.10	2.14	OK
	91.8	15	14	88.2	9.694	1.44	2.14	OK
SMZ	3.47	15	14	3.39	0.378	0.82	2.14	OK
	104.5	15	14	101.7	9.694	1.12	2.14	OK

4.1.11.9 Recovery

Recovery was evaluated by extracting and analysing in triplicate MilliQ water samples (1 L volume for CBZ, CBZ-DiOH, SMZ) spiked, before extraction, with native analytes only. Internal standards were then added to the extracts at the end of sample preparation with the aim to allow the estimation of analytes loss during processing. The recovery has been evaluated comparing the ratios analyte/IS in spiked samples to the same ratios obtained by analysing a standard solution containing native compounds and labelled ones at the same concentration levels, not subject to any handling. The spiking levels were 3 and 90 ng/L for CBZ, CBZ-DiOH, and SMZ, 30 and 300 ng/L. The results of recovery experiments are reported below.

Table 39 - Recovery of analytes at different concentration levels

Analyte	Spike level	Mean Recovery (%) (n=9)	SD (ng/L)	RSD%
CBZ	Low	84.1	3.99	4.7
	High	87.9	2.01	2.3
CBZ-DiOH	Low	74.2	5.65	7.6
	High	85.2	5.13	6
SMZ	Low	74	12.08	16.3
	High	96.9	9.21	9.5

4.1.11.10 Repeatability, intermediate precision, and day to day variation

For repeatability, intermediate precision and day to day variation estimation, quality control samples at two concentration levels were tested on five different days. For each sample three replicate injections were made (Table 40).

Table 40 - Repeatability, day-to-day and intermediate precision variation in two different concentration levels

Analyte	Lower concentration level			Higher concentration level		
	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)
CBZ	3.7	13.6	14.1	9.4	7.0	11.7
CBZ-DiOH	3.2	13.4	13.8	2.7	1.0	2.9
SMZ	11.2	9.0	14.4	7.6	8.1	11.2

4.1.11.11 Sample storage stability study

Stability of analytes in water samples during storage was studied by analysing low and high QC samples, prepared on August 03, 2012 and stored at identical temperature and lighting conditions (i.e.: +5°C, darkness) as the real water samples.

Stability samples for CBZ, CBZ-DIOH and SMZ were extracted and analysed on day 0, 38, 83 and 96 after spiking. Concentrations in stability samples fall within ± 2 times the standard deviation of the concentrations of quality control samples used for repeatability evaluation. The stability study covers the time elapsed from the collection of the first sample to the end of the analytical work of the project.

4.1.12 TCPP-method used by the European Commission (JRC)

4.1.12.1 Chemicals and reagents used

The following chemicals and reagents were used for the development and validation of this method.

- Tri-n-butyl-d_{27} phosphate (Product No. 9491.12-100-IO), Chiron AS (Norway);
- Tris(1-chloro-2-propyl)phosphate, 50 µg/mL in toluene, LOT: 209071282, AccuStandard, Inc. (USA);

4.1.12.2 Instrument conditions for TCPP method

Table 41 and Table 42 summarise the instrumental conditions for the TCPP method.

Table 41 -GC equipment and conditions

GC equipment and conditions					
GC	Agilent 6890 N	**Ramps:**	**Rate**	**Final Temp.**	**Final Time**
Column	SGE ID-BPX-50	1	30°C/min	180°C	0 min
Nominal length	60 m	2	10°C/min	300°C	15 min
Nominal Diameter	250 µm	**Run time**	31.33 min		
Nominal film thickness	0.25 µm	**Front Inlet (CIS4)**	Gerstel CIS 4		
Mode	constant flow	**Mode**	Splitless		
Initial flow	1 mL/min	**Initial Temperature**	250°C		
Initial Temperature	80 °C	**Equilibration time**	0.05 min		
Initial Time	1 min				

Table 42 - Single quadrupole conditions

Single quadrupole conditions	
MS	Agilent 5973 Mass Selective Detector
Pressure	180 kPa
Initial Time	0.10 min
Purge Flow	100 mL/min
Purge Time	1 min
Rate	10 °C/sec
Final Temp	280 °C
Total Flow	104.1 mL/min
Hold Time	10 min
Gas saver	Off

Gas Type	Helium
MS Quad	150 °C
MS Source	230 °C

4.1.12.3 Selectivity

TCPP (sum of three isomers) was identified in SIM (Selected Ion Monitoring) mode, recording the following ion traces: 277 and 279 amu (two isotopic ions of the cluster Cl). The quantified analyte was identified through retention time comparison of the corresponding standard and the isotopic ratio between two ions recorded (±20%).

4.1.12.4 Limit of Detection (LoD) and Limit of Quantification (LoQ)

Limits of detection and quantification were estimated as described above. The results of the LoD and LoQ estimation for every analyte are shown in Table 43.

Table 43 - LoD and LoQ values for analytes

Analyte	Nr of blanks analyzed	LoD (ng/L)	LoQ (ng/L)
TCPP	7	2.00	4.00

4.1.12.5 Linearity study for TCPP

For TCPP the linearity was studied in the concentration range 0-500 ng/L. In order to verify the linearity of the calibration curve, a blank sample spiked only with labelled internal standard and five spiked MilliQ water samples (i.e.: 0, 10, 25, 50, 200 and 500 ng/L) were extracted and analyzed in three replicates on eight different days. The received calibration curves are shown in the annex to thus report.

The linearity of the calibration plots was estimated by calculating the regression coefficient R^2 and by checking the shape of distribution of residuals. The calculated R^2 values were ≥0.99 for all calibration curves and the residuals were randomly dispersed around the horizontal axis (see the residual plots for TCPP in annex).

Table 44 - Coefficient of determination (R2) values for TCPP calibration curves on different days

Validation day	TCPP
1	0.9947
2	0.9999
3	1.0000
4	0.9989
5	0.9990
6	0.9996
7	0.9999
8	0.9992
Average	0.9989
RSD %	0.18%

The linear regression model proved to be appropriate for interpreting the data.

4.1.12.6 Extension of the calibration for TCPP analysis

According to the information received from scientific literature (Andresen *et al. (2004)*, Bollmann *et al.* (2012), Regnery & Püttmann (2010)) the linearity of the method was first tested in the concentration range from 0 ng/L to 500 ng/L as described. After finalising the measurements of the real samples it was realised that around 15% of the results were exceeding the concentration of the maximum calibration point. In order to check the linearity of the method at higher concentration levels, additional experiments were carried out and the linearity study was extended to 3000 ng/L by analysing 6 calibration solutions with concentrations 10, 50, 200, 750, 1500 and 3000 ng/L. The calibration solutions were prepared by spiking 1L of MilliQ water with CRMs and extracted by SPE like real samples.

Even in this case the established R^2 value was >0.99. It can be stated, that inside the tested concentration range the method is linear. The calibration curve of the extended linearity study is shown in the annex.

4.1.12.7 Working Range

The working range is defined as the range of concentrations where the chosen calibration curve is valid. The working ranges of these methods were therefore defined by the limits of quantification and highest points in the respective calibration curve. The table below summarizes the working ranges established for the developed procedure.

Table 45 - Working ranges for TCPP

Analyte	Working range (ng/L)
TCPP	4.0-3000

4.1.12.8 Trueness

Eight spiked water samples with a concentration of 30 ng/L and eight spiked water samples with a concentration of 300 ng/L were analysed and the back calculated concentrations evaluated for demonstrating the truthfulness of the null hypothesis (H_0: the analytical method is not subject to systematic error).

Table 46 - Results of the trueness study in the different concentration levels

Mean value (x) ng/L	Nr of samples (n)	Nr of degrees of freedom	Theoretical value (µ) ng/L	STD of samples (s) ng/L	Calculated t-value	Critical t_4 P=0,05	Decision
34.1	8	7	30	5.33	2.19	2.36	OK
324	7	6	300	37.37	1.71	2.36	OK

4.1.12.9 Recovery

Recovery was evaluated by extracting and analysing in triplicate MilliQ water samples (1 L volume for TCPP) spiked, before extraction, with native analyte only. Internal standards were then added to the extracts at the end of sample preparation with the aim of allowing the estimation of analytes loss during processing.

The recovery has been evaluated comparing the ratios analyte/IS in spiked samples to the same ratios obtained by analysing a standard solution containing native compounds and labelled ones at the same concentration levels, not subject to any handling.

The spiking levels were 30 and 300 ng/L for TCPP. The results of recovery experiments are reported in the Table below.

Table 47 - Recovery of analytes at different concentration levels

Analyte	Spike level	Mean Recovery (%) (n=9)	SD (ng/L)	RSD%
TCPP	Low	126	2.31	1.8
	High	106	2.85	2.7

4.1.12.10 Repeatability, intermediate precision, and day to day variation

For repeatability, intermediate precision and day to day variation estimation, quality control samples at two concentration levels were tested on five different days. For each sample three replicate injections were made. Using one-way ANOVA the results were obtained as shown in Table 48.

Table 48 - Repeatability, day-to-day and intermediate precision variation in two different concentration levels for TCPP

TCPP	Lower concentration level			Higher concentration level		
	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)	Repeatability (%)	Day-to-day variation (%)	Intermediate precision (%)
	2.5	6.5	6.9	1.1	5.9	6.0

4.1.12.11 Sample storage stability study

Stability of analytes in water samples during storage was studied by analysing low and high QC samples, prepared on August 03, 2012 and stored at identical temperature and lighting conditions (i.e.: +5°C, darkness) as the real water samples. Stability samples for TCPP were extracted and analysed after 40, 84 and 97 days. The stability study covers the time elapsed from the collection of the first sample to the end of the analytical work of the project and were published by Tavazzi *et al.* (2013).

5 Results and discussion

5.1 *Substance-wise assessment*

The following section summarises the individual findings per substance. The individual results are summarised in the annex to this report. It has to be stressed that the following discussion is not meant to be an assessment of the substance in view of its environmental occurrence, but focuses on the performance characteristics of the employed monitoring mechanism. No interpretation of measured concentration vs property of the sampling station is made. To better visualise the data, frequencies of positive detection vs detection/quantification limits are used. This allows, *inter alia*, assessing if an employed analytical method is already sufficiently performing and whether with this performance the investigated substance can be assessed. Clearly, this does not imply that the method used in this investigative monitoring is already suitable to implement possible future EQS, which may be more challenging. Furthermore, the establishment of LoD/LoQ allows issues of contamination by the sampling process itself, e.g. as in the case of bisphenol A, to be addressed.

5.1.1 *Findings for acesulfame*

Acesulfame is an artificial sweetener and its environmental occurrence is largely related to the release of effluents from wastewater treatment plants or leakage of sewer systems. In this pilot exercise the substance was detected successfully in 86% of the samples. All acesulfame measurements were carried out by Umweltbundesamt Vienna. The established LoD (27 ng/L) and LoQ (54 ng/L) are suitable for routine operations and no particular difficulties were encountered during the analytical step. Highest concentrations were observed in inland water samples with a maximum of 57 µg/L with a median of 1.75 µg/L and an average of 3.71 µg/L. Samples from coastal areas featured a considerably lower concentration with a maximum of 5.6 µg/L, a median of 0.83 µg/L and an average of 2.0 µg/L.

Sample containers used were made of high-density polyethylene. In total, 23 field blanks were checked. No contamination by acesulfame was detected. Considering these observations and findings, the experimental set-up tested for acesulfame or substances of similar physicochemical characteristics and release pathways appeared to be fit-for-purpose.

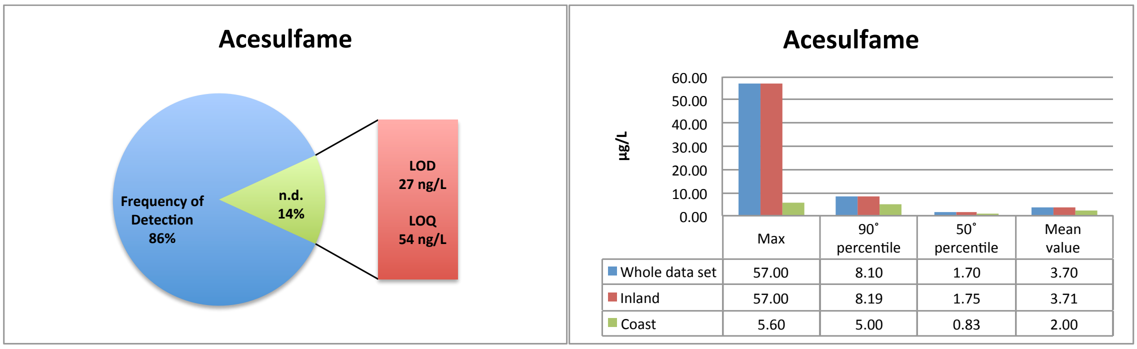
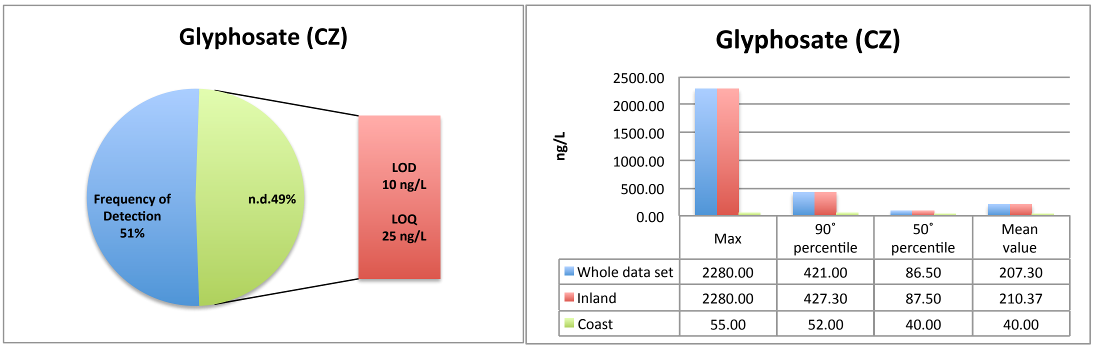


Figure 5 -Summary findings for acesulfame

5.1.2 *Findings for glyphosate*

Glyphosate was one of three substances for which ca. 50 % of the samples were analysed independently in two laboratories. This was done to assess comparability of results among laboratories, reflecting the fact that a future watch list monitoring mechanism could involve several Member States' laboratories. Due to the fact that glyphosate is analysed on a routine basis in many water monitoring laboratories there was no need to develop a new analytical method.

Glyphosate was analysed in the Czech Republic (Povodí Labe) and the United Kingdom (National Laboratory Service) both using standard methods implemented and operated on a routine basis in their laboratories. Results obtained are displayed in Figure 6 and Figure 7 respectively. While Povodí Labe analysed all 219 samples received for glyphosate, NLS processed only 130 samples. In this regard, the Czech data set is a better representation of the experiences made during this pilot study. While the Czech method features a detection limit of 10 ng/L, the NLS method features a LoD of 60 ng/L and a LoQ of 100 ng/L. In 51% of samples Povodí Labe detected quantifiable amounts of glyphosate with a maximum value of 2280 ng/L with an average of 207 ng/L. As expected, concentrations in inland water samples were significantly higher compared to coastal samples, where average concentrations were five times lower. None of the 19 field blanks tested positive for glyphosate. This result confirms the appropriateness of HDPE containers for this analyte.

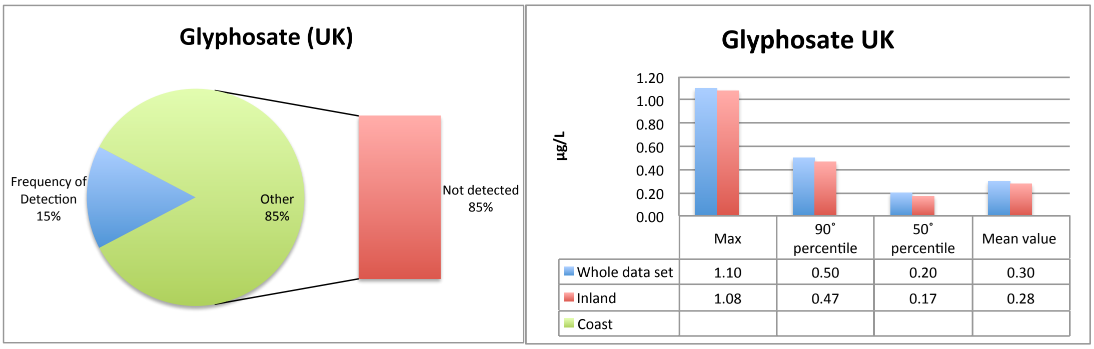


	Max	90° percentile	50° percentile	Mean value
Whole data set	2280.00	421.00	86.50	207.30
Inland	2280.00	427.30	87.50	210.37
Coast	55.00	52.00	40.00	40.00

Figure 6 – Summary findings for glyphosate reported by Povodí Labe

The National Laboratory Service found glyphosate in quantifiable amounts only in 15% of the analysed samples (130 in total) with a maximum of 1080 ng/L and average of 300 ng/L, thus being comparable to the mean value reported on the whole dataset.

Comparing those samples for which two analytical results are reported, one observes a good agreement between values being reported "< LoD" by NLS and the results obtained by Povodí Labe. For 20 of the 130 samples both laboratories reported quantifiable amounts of glyphosate. However, of these only for 4 samples were the observed differences less than 10%, indicating poor comparability of quantified values. This raises some doubts about the applicability of the mechanisms for those cases where the same analyte is measured in different laboratories. It appears to be necessary in these cases to implement a cost-intensive intercomparison and calibration mechanism, e.g. through proficiency testing schemes or similar quality assurance mechanisms. As regards the logistical set-up the used sampling containers were demonstrated to be fit for purpose in both laboratories.



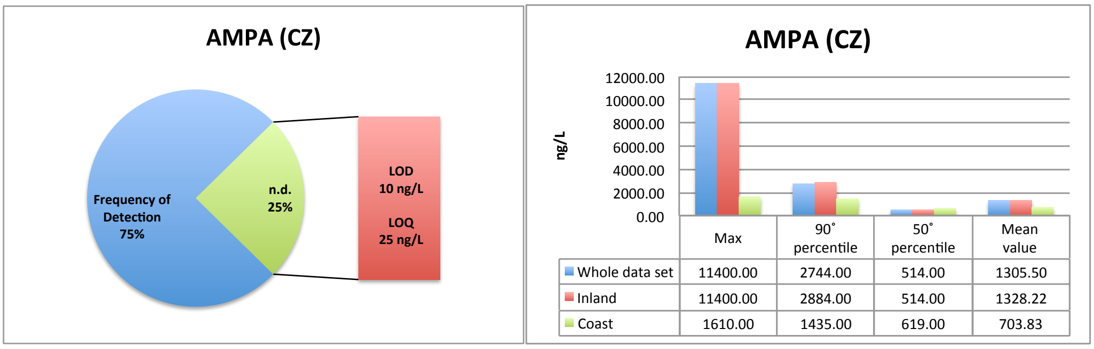
	Max	90° percentile	50° percentile	Mean value
Whole data set	1.10	0.50	0.20	0.30
Inland	1.08	0.47	0.17	0.28
Coast				

Figure 7 - Summary findings for glyphosate reported by the National Laboratory Service

5.1.3 *Findings for AMPA*

AMPA is one of the primary degradation products of glyphosate and the observed findings in this pilot exercise have to be set into relationship to glyphosate. As in the latter case, AMPA was analysed independently in the same two laboratories, i.e. Povodí Labe (Czech Republic) and National Laboratory Service (United Kingdom) both using standard methods operated on a routine basis. Results are shown in Figure 8 and Figure 9, respectively.

Unlike its precursor, AMPA was found in 75 per cent of all analysed samples in concentrations ranging from ng/L level up to 11.4 µg/L with a mean value of 1.3 µg/L and lower median of 0.5 µg/L. Although concentrations observed in the coastal area were generally lower, the observed differences were not particularly significant. As in the case of glyphosate none of the 19 field blanks tested positively for AMPA, thus indicating the appropriateness of the chosen sample containers and set-up.

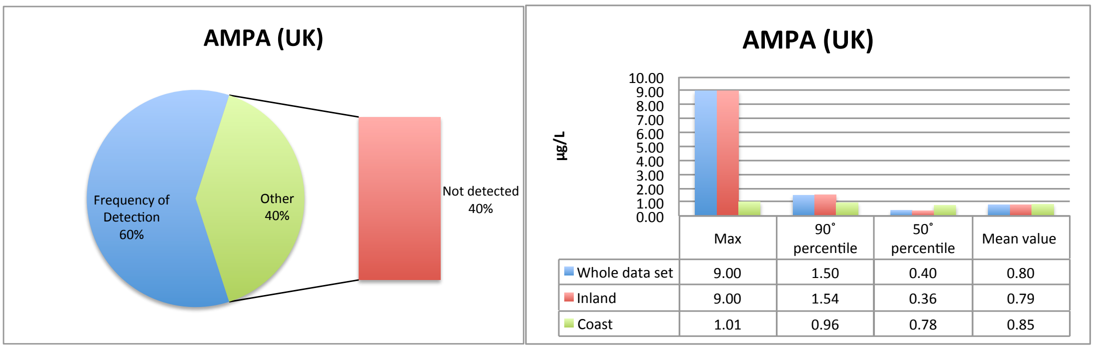


	Max	90° percentile	50° percentile	Mean value
🟦 Whole data set	11400.00	2744.00	514.00	1305.50
🟥 Inland	11400.00	2884.00	514.00	1328.22
🟩 Coast	1610.00	1435.00	619.00	703.83

Figure 8 - Summary findings for AMPA reported by Povodí Labe

Of the 219 samples received, 130 samples were analysed in both laboratories. For 77 samples, both laboratories reported quantifiable amounts of AMPA. In these cases, NLS results were on average 71.5 % of the reported value of Povodí Labe, a fact which might be ascribed to the better performance characteristics of the Czech method. However, generally results are in sufficient agreement for the purpose of the exercise. In one case, results for NLS were 8 % higher. In one sample, AMPA was not detectable by Povodí Labe, but a concentration was obtained with the less sensitive NLS method. Given the good results obtained with the field blanks, no explanation can be given for this anomaly.

Povodí Labe reported a LoD of 10 ng/L and a LoQ of 25 ng/L. NLS reported a LoD of 80 ng/L and a LoQ of 100 ng/L.



	Max	90° percentile	50° percentile	Mean value
🟦 Whole data set	9.00	1.50	0.40	0.80
🟥 Inland	9.00	1.54	0.36	0.79
🟩 Coast	1.01	0.96	0.78	0.85

Figure 9 - Summary findings for AMPA reported by the National Laboratory Service

The AMPA findings confirm the observations made already for glyphosate, indicating some restrictions among datasets obtained in different laboratories, if no appropriate quality assurance programme is used.

5.1.4 Findings for ^{1}H-Benzotriazole and Tolyltriazoles

The set of three triazoles (^{1}H-benzotriazole, 4-tolyltriazole and 5-tolytriazole were analysed with the same analytical method by Umweltbundesamt Vienna. The substances were used to investigate proper peak identification and separation of multiple, similar structures. Due to their versatile use as corrosion inhibitors, ingredients of hydraulic fluids, as antifreezers or photographic chemicals, they have multiple pathways to enter the aquatic environment and illustrate nicely the behaviour of many industrial chemicals.

The summary findings of the three substances are displayed in the figures below. In all three cases, the observed concentrations in inland water samples were higher by a factor of 5 approximately if compared to the concentration in coastal samples. 23 field blanks tested negatively, thus indicating the appropriateness of the HDPE containers used for these compounds. The substances were detected in quantifiable amounts in ca. 2/3rd of samples analysed. The reported LoD/LoQs are summarised in the following table and indicate a sufficient performance level for the investigated samples pool.

Table 49 – Limits of detection and quantification observed for triazoles

Substance	LoD in ng/L	LoQ in ng/L
^{1}H-benzotriazole	4.3	16
4-tolyltriazole	5.3	20
5-tolytriazole	6.3	24

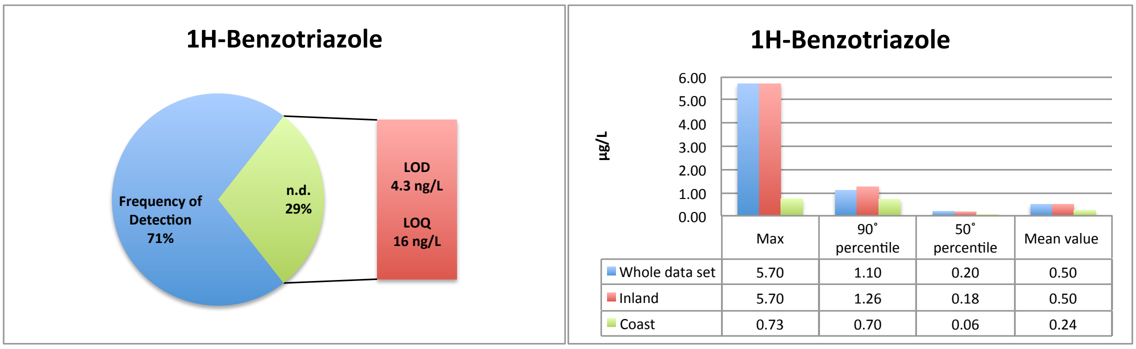


Figure 10 - Summary findings for ^{1}H-benzotriazole reported by Umweltbundesamt Vienna

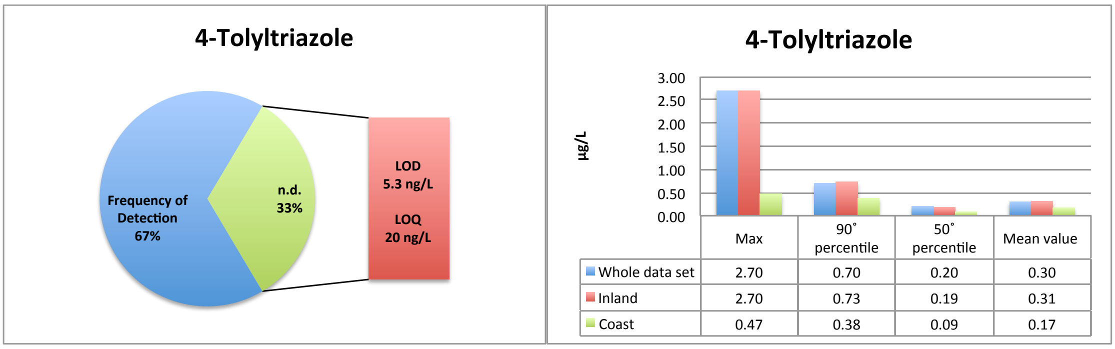


Figure 11 - Summary findings for 4-tolyltriazole reported by Umweltbundesamt Vienna

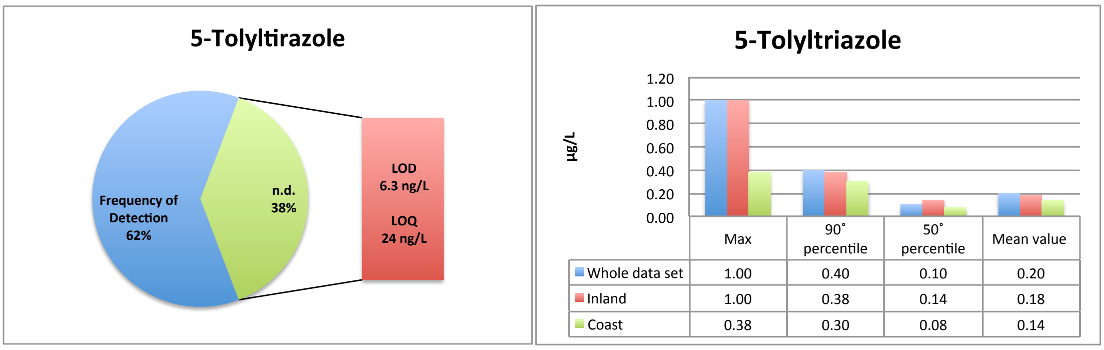


Figure 12 - Summary findings for 5-tolyltriazole reported by Umweltbundesamt Vienna

5.1.5 *Findings for bisphenol A*

Environmental sampling and analyses of bisphenol A is known to be very challenging. Bisphenol A measurements were executed by BFG, Germany. Due to its use, bisphenol A occurrence is closely related to the use of various plastic materials. Consequently, the use of HDPE containers was not a viable option for this pilot study. Preliminary tests executed between JRC and BFG revealed that aluminium sample containers are a suitable and more robust alternative to traditional glass bottles. However, careful washing and conditioning of the containers is key. Thus, experiments revealed that it was necessary to wash and rinse the containers three times with analytical grade methanol followed by three fold rinsing with analytical grade water. Despite the positive result in a pre-campaign experiment, BfG measurements of blank samples revealed high blank values for bisphenol A in the aluminum sampling bottles. The measured concentrations of bisphenol A in the blanks ranged from 4 to 47 ng/L (Table 50) which is within the concentration range measured in the water samples. Hence, the measured concentrations of bisphenol A had to be omitted from further consideration. Since lab blanks from samples which came not into contact with the aluminium bottles were below the LoQ (<5 ng/L), it was concluded that the aluminium bottles were not conditioned properly and the samples taken could not be processed for analysis of bisphenol A. Careful enquiry in the JRC laboratories, where the conditioning took place, revealed a deviation from the conditioning protocol originally established. The incident highlights the need to carefully control proper sample container conditioning, but also the usefulness of field blanks in the context of such a study.

Table 50 - Blank values (ng/L) for bisphenol A reported by BfG

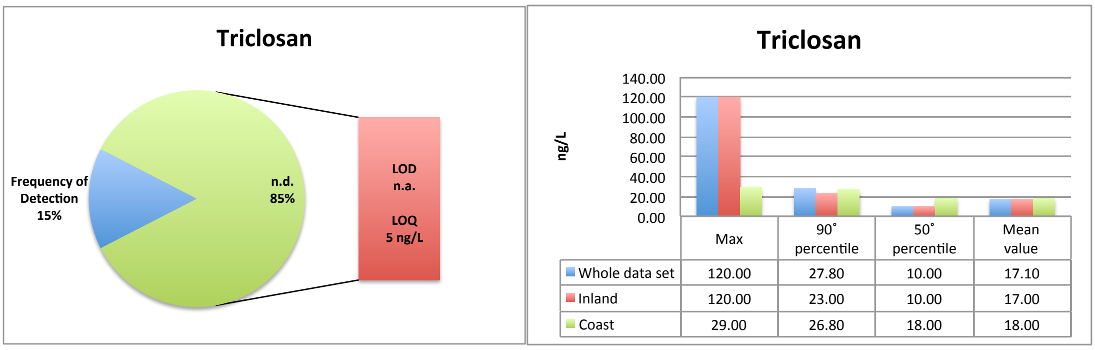
Location code	Sampling Station	Bisphenol A (ng/L)
0049_SWW_00017	Vltava Zelčin	12
0049_SWW_00019	Labe Valy	27
0049_SWW_00020	Jizera Nový Vestec	14
0049_SWW_00058	IX Xghajra	47
0049_SWW_00072	Jochenstein	6
0049_SWW_00076	Leverkusen-Rheindorf	8
0049_SWW_00078	Vreden	13
0049_SWW_00172	Umbria Tiber	14
0049_SWW_00204	STO 01.15.16	6

5.1.6 Findings for triclosan and triclocarban

Triclosan and triclocarban were both measured by BfG laboratories using a single analytical method featuring a LoD of 5 ng/L. Triclosan was detected in 33 of 218 analyzed samples (15%) at concentrations above the LoQ of 5 ng/L. Triclocarban was found only in two samples (0.9%). The maximum concentrations were 120 ng/L for triclosan and 81 ng/L for triclocarban and were both measured in the same sample (0049_SWW_00136). None of the nine field blanks tested featured any contamination with the analytes of interest.

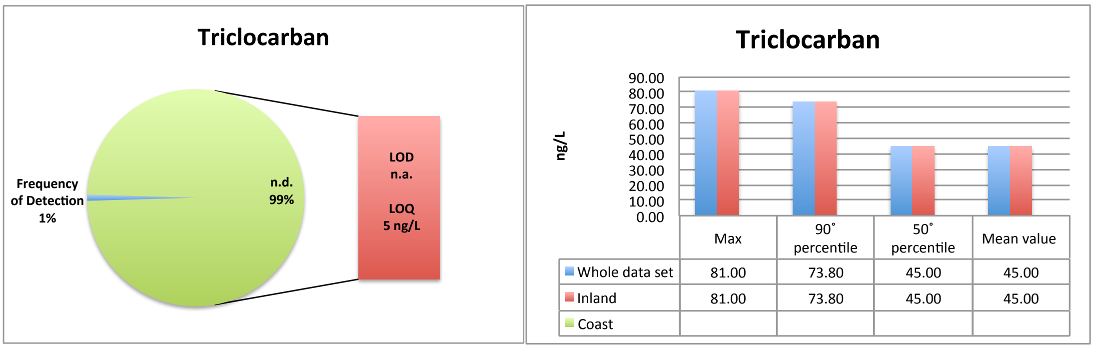
While triclocarban was not detectable in coastal waters, trichlosan appeared with almost identical mean values in both inland and coastal waters. Generally, concentrations appeared to be the same order for both water types. Both substances are related to personal care products.

Findings for the substances are summarized in Figure 13 and Figure 14, respectively. The proposed analytical approach can be assumed to be fit-for-purpose and the reported LoQ of 5 ng/L is suitable for ultratrace measurements.



	Max	90° percentile	50° percentile	Mean value
🟦 Whole data set	120.00	27.80	10.00	17.10
🟥 Inland	120.00	23.00	10.00	17.00
🟩 Coast	29.00	26.80	18.00	18.00

Figure 13 - Summary findings triclosan reported by BfG



	Max	90° percentile	50° percentile	Mean value
🟦 Whole data set	81.00	73.80	45.00	45.00
🟥 Inland	81.00	73.80	45.00	45.00
🟩 Coast				

Figure 14 - Summary findings triclocarban reported by BfG

5.1.7 Findings for carbamazepine and its metabolite

The analyses of carbamazepine and its metabolite are a typical example of what can be expected for future watch list monitoring. There is an increasing awareness that it might also be necessary to consider stable metabolites in environmental monitoring, in particular if formed quickly after application. The investigation of carbamazepine and its metabolite reflect this scenario. Both molecules were quantified in the premises of the European Commission's JRC. The validated method featured an excellent LoQ of 0.07 ng/L for carbamazepine and a slightly higher LoQ of 0.26 ng/L for its metabolite 10,11-dihydroxy-10, 11-dihydrocarbamazepine (CBZ-DiOH).

These very low detection limits allowed some interesting observations in the use of the field and laboratory blanks. 15 laboratory blanks were analysed in parallel, and none of these laboratory blanks returned a positive result. As regards the field blanks, 28 samples were analysed. In 4 of these samples, results indicated anomalies of the analytical methods, presumably due to a malfunctioning of the sample pre-treatment device used by the JRC. 5 field blank values were similar to values from the respective site. Consequently, the analyses were repeated upon corrective maintenance of the instrument. Furthermore, in 4 additional field blanks the analytes were detectable, indicating a cross-contamination caused in the field. However, no corrective action was taken as the concentrations were 1/100th of the observed concentration.

The substances were found in quantifiable amounts in almost all samples investigated. Concentrations in coastal waters were one order of magnitude lower than inland waters, where peak concentration of several hundreds of ng/L could be observed for carbamazepine and its metabolite. Concentrations of the two substances were closely correlated as expected. The findings are summarised in the figures below.

Figure 15 - Summary findings for carbamazepine reported by JRC

The findings illustrate the need and usefulness of field and laboratory blanks. The observed field blank contaminants could be clearly attributed to a wrong understanding of the instructions received. The applied methodology is fit-for-purpose and the achievable performance characteristics of the method are suitable to investigate compounds similar to carbamazepine and its metabolite at pictogram levels.

Figure 16 - Summary findings for metabolite of carbamazepine reported by JRC

5.1.8 *Findings for sulfamethoxazole*

Sulfamethoxazole was analysed using the same analytical method used for carbamazepine. Similar performance characteristics were observed. Thus, the method featured a LoD of 0.05 ng/L and a LoQ of 0.26 ng/L. The blank issues reported above, were also observable in the case of sulfamethoxazole. The substance was detectable in 89% of the samples with highest concentrations in inland waters with a highest concentration of 656 ng/L in one sample. Concentrations in coastal water samples were ca. 20% compared to the values observed for inland waters. The results are summarised in Figure 17.

The analytical method results to be suitable for the purpose used.

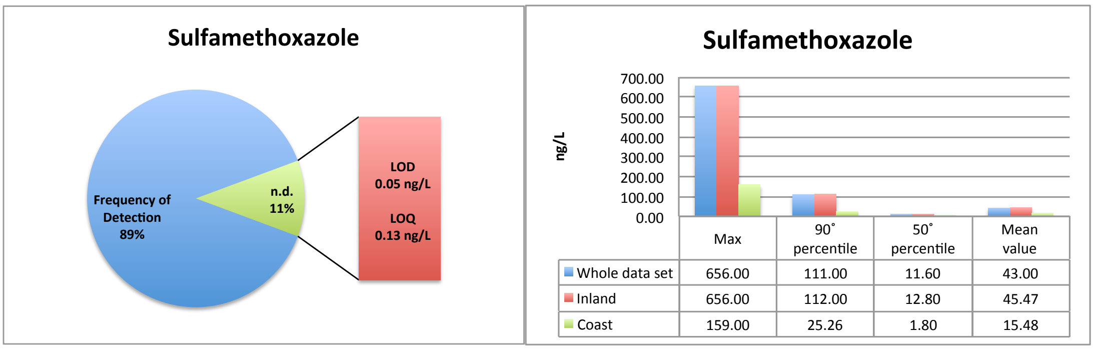


Figure 17 - Summary findings for sulfamethoxazole reported by JRC

5.1.9 Findings for perfluoropropionic acid (PFPrA)

Perfluoroproprionic acid was analysed by the JRC. Unlike the methods used by the JRC, in this case a re-validation of the method became necessary due to a breakdown of a sample pre-treatment device. As a consequence only 30% of total samples were analysed for the PFPrA. However, also in these cases the analyte was detectable only in very few samples. The LoD (0.05 ng/L) and LoQ (0.13 ng/L) demonstrated good performance of the analytical method. Blank samples tested after replacement of the SPE pre-treatment device were negative. The low number of detections in the limited dataset did not allow a statistical evaluation and the respective figures are omitted.

5.1.10 Findings for tris-2-chloropropyl phosphate (TCPP)

TCPP is a chemical compound used as a flame retardant, plasticizer, and viscosity regulator in various types of polymers including polyurethanes, polyester resins, and polyacrylates. The compound was analysed by the JRC using an in-house developed GC-MS method featuring a LoD of 2 ng/L and a LoQ of 4 ng/L based on experimental findings. The summary findings displayed in Figure 18 show that although highest concentrations are observed in inland waters, mean and median values are comparable between inland and seawaters. The high frequency of detection of 92% proofs the chosen analytical approach to be fit-for-purpose. In total, 30 field blanks were tested of which 1 field blank was found positive at 4. 17 ng/L i.e. slightly above the stated limit of quantification. Laboratory blanks all resulted as negative.

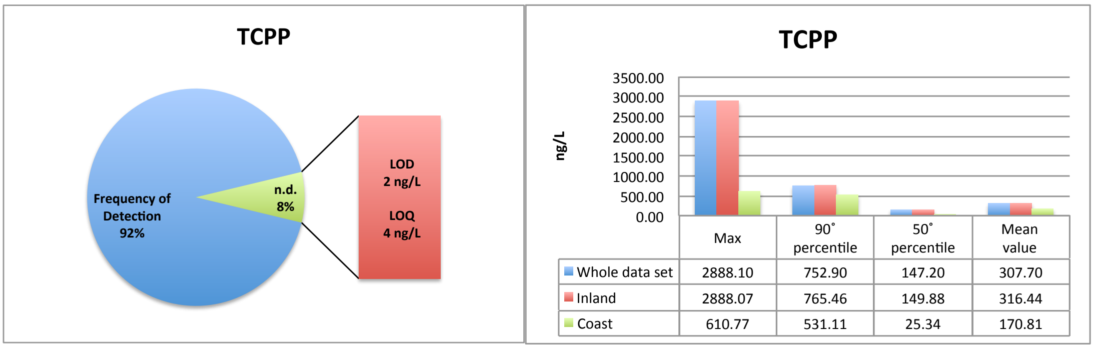


Figure 18 - Summary findings for TCPP reported by JRC

5.1.11 Findings for methyl tert-butyl ether (MTBE)

MTBE was selected as a representative for volatile compounds. Similar to glyphosate and AMPA, also MTBE was analysed in two laboratories, thus allowing us to compare analytical findings obtained on the same substance in two laboratories. While the Dutch laboratory of Rijkswaterstaat analysed the whole set of samples, the British NLS examined 130 of 219 samples. 4 samples shipped to the Netherlands were not usable due to leakage of the bottles.

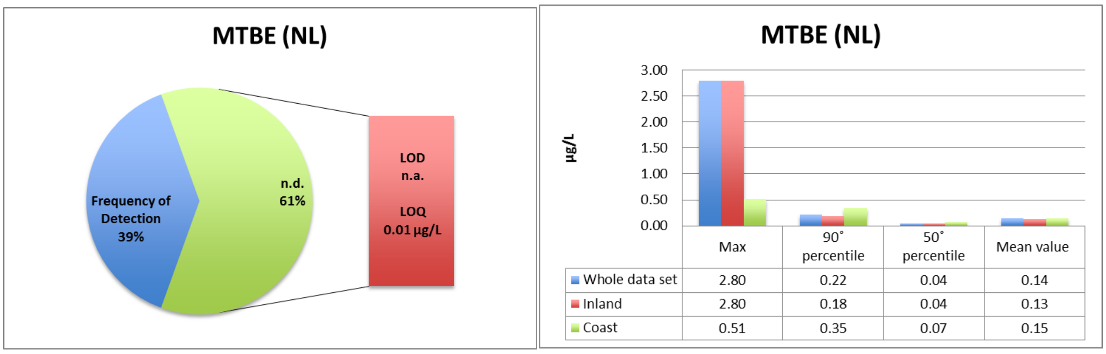


Figure 19 – Summary findings for MTBE reported by Rijkswaterstaat. The pie chart (left) refers to the common set of samples analysed by both laboratories, while the bar chart (right) included all the samples analysed by a single laboratory.

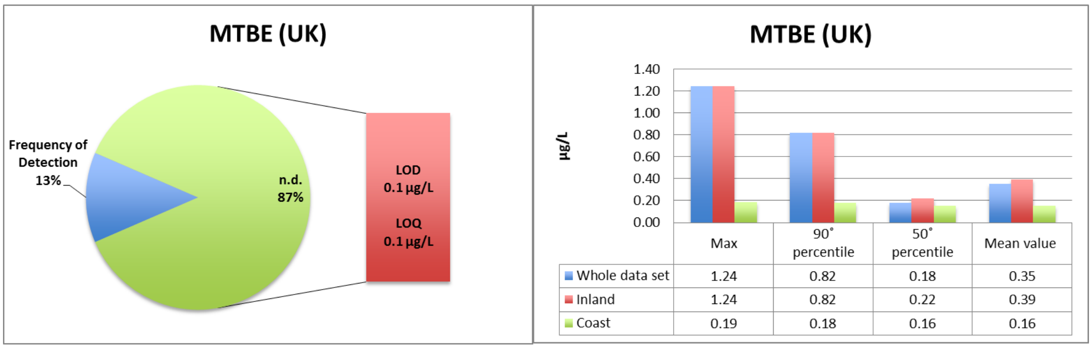


Figure 20 – Summary findings reported for MTB by National Laboratory Services. The pie chart (left) refers to the common set of samples analysed by both laboratories, while the bar chart (right) included all the samples analysed by a single laboratory.

The analytical method used by Rijkswaterstaat reported a LoQ of 10 ng/L compared to a 10 fold higher LoQ of the method used by NLS. The summary findings for both laboratories are shown in Figure 19 and Figure 20, respectively. The data indicate a rather comparable distribution of MTBE concentrations between inland and coastal waters in both datasets. NLS tested 13 field blank samples, in none of which was found detectable amounts of MTBE. No data for blank samples were received from Rijkswaterstaat.

As regards the comparison between both laboratories, it has to be stressed that both use routine methods for MTBE determination, which are operated on a regular basis. While for a majority of samples analysed in both laboratories (85%, 108 samples) the reported findings agreed well, this was not the case in 15% (19 samples) of the cases. In these cases, concentrations differences were so significant (2 to 3 orders of magnitude), that it was enquired whether the results were reported correctly. The significantly higher concentrations in these 19 samples were all reported by the Dutch laboratory (Table 51).

Considering these results and anomalies, it has to be concluded that results produced for the same analyte in different laboratories are of limited comparability despite the fact that standardised methods have been used. The possible shortcomings may require the introduction of an accompanying analytical quality assurance programme, which may increase significantly the cost of the exercise.

Table 51 – Comparison of findings for MTBE analysed by NLS (UK) and Rijkswaterstaat (NL). The highlighted lines indicate anomalies. Issues were found with the project logistics which made track and tracing of sample IDs difficult. Calculation errors were identified in the reporting phase and corrected.

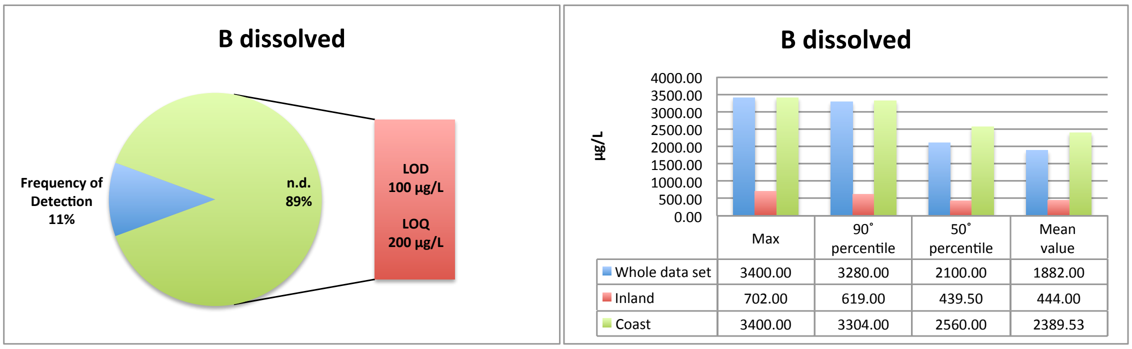
Location code	UK MTBE (µg/L)	MTBE (µg/L)
0049_SWW_00001	< LOQ	< LOQ
0049_SWW_00002	< LOQ	< LOQ
0049_SWW_00003	< LOQ	< LOQ
0049_SWW_00005	< LOQ	< LOQ
0049_SWW_00006	< LOQ	< LOQ
0049_SWW_00007	< LOQ	< LOQ
0049_SWW_00009	< LOQ	< LOQ
0049_SWW_00013	< LOQ	< LOQ
0049_SWW_00014	< LOQ	< LOQ
0049_SWW_00015	< LOQ	0,0439
0049_SWW_00016	< LOQ	< LOQ
0049_SWW_00017	0,734	0,838
0049_SWW_00018	0,219	0,206
0049_SWW_00019	0,101	0,0824
0049_SWW_00020	< LOQ	< LOQ
0049_SWW_00022	0,124	0,0981
0049_SWW_00023	0,156	0,508
0049_SWW_00024	< LOQ	< LOQ
0049_SWW_00025	< LOQ	0,0266
0049_SWW_00026	< LOQ	< LOQ
0049_SWW_00027	< LOQ	0,0228
0049_SWW_00030	< LOQ	0,0413
0049_SWW_00031	< LOQ	0.0148
0049_SWW_00032	< LOQ	0,0326
0049_SWW_00033	0,167	0,145
0049_SWW_00034	< LOQ	0,0261
0049_SWW_00039	< LOQ	0,015
0049_SWW_00040	< LOQ	0,012
0049_SWW_00041	< LOQ	0,0934
0049_SWW_00042	< LOQ	0,0216
0049_SWW_00045	< LOQ	0,0289
0049_SWW_00046	< LOQ	0,0379
0049_SWW_00047	< LOQ	0,0968
0049_SWW_00049	< LOQ	0,0239
0049_SWW_00050	< LOQ	< LOQ
0049_SWW_00051	< LOQ	0,015
0049_SWW_00052	< LOQ	< LOQ
0049_SWW_00054	< LOQ	< LOQ
0049_SWW_00055	< LOQ	< LOQ
0049_SWW_00057	< LOQ	0,0238
0049_SWW_00058	< LOQ	< LOQ
0049_SWW_00059	< LOQ	< LOQ
0049_SWW_00064	< LOQ	< LOQ
0049_SWW_00065	< LOQ	< LOQ
0049_SWW_00066	< LOQ	< LOQ
0049_SWW_00067	< LOQ	< LOQ
0049_SWW_00068	< LOQ	< LOQ
0049_SWW_00070	< LOQ	< LOQ
0049_SWW_00071	< LOQ	< LOQ
0049_SWW_00072	< LOQ	< LOQ
0049_SWW_00073	< LOQ	0,0758
0049_SWW_00076	< LOQ	< LOQ
0049_SWW_00077	< LOQ	0,03
0049_SWW_00078	< LOQ	0,0226
0049_SWW_00079	0,818	0,458
0049_SWW_00080	< LOQ	0,0256
0049_SWW_00081	< LOQ	0,0445
0049_SWW_00082	< LOQ	0,0574
0049_SWW_00083	< LOQ	< LOQ
0049_SWW_00084	< LOQ	< LOQ
0049_SWW_00085	< LOQ	< LOQ
0049_SWW_00086	< LOQ	0,0567
0049_SWW_00087	0,117	0,0428
0049_SWW_00088	< LOQ	0,0282
0049_SWW_00089	< LOQ	< LOQ
0049_SWW_00090	< LOQ	< LOQ
0049_SWW_00091	< LOQ	< LOQ
0049_SWW_00092	< LOQ	0,044
0049_SWW_00093	0,23	0,255
0049_SWW_00094	< LOQ	< LOQ
0049_SWW_00095	< LOQ	< LOQ
0049_SWW_00098	< LOQ	< LOQ
0049_SWW_00099	< LOQ	< LOQ
0049_SWW_00100	0,186	0,251
0049_SWW_00101	< LOQ	0,0189
0049_SWW_00103	< LOQ	0,0456
0049_SWW_00104	1,24	1,33
0049_SWW_00110	< LOQ	< LOQ
0049_SWW_00113	< LOQ	< LOQ
0049_SWW_00121	< LOQ	< LOQ
0049_SWW_00122	< LOQ	< LOQ
0049_SWW_00123	< LOQ	0,0437
0049_SWW_00124	< LOQ	< LOQ
0049_SWW_00125	< LOQ	< LOQ
0049_SWW_00126	< LOQ	< LOQ
0049_SWW_00127	< LOQ	< LOQ
0049_SWW_00128	0,116	0,130
0049_SWW_00129	< LOQ	< LOQ
0049_SWW_00130	< LOQ	< LOQ
0049_SWW_00131	< LOQ	< LOQ
0049_SWW_00132	0,125	< LOQ
0049_SWW_00133	0,158	0,146
0049_SWW_00139	< LOQ	< LOQ
0049_SWW_00141	< LOQ	< LOQ
0049_SWW_00143	0,219	0,218
0049_SWW_00146	< LOQ	0,0918
0049_SWW_00147	< LOQ	0,0770
0049_SWW_00148	0,817	0,542
0049_SWW_00149	< LOQ	< LOQ
0049_SWW_00150	< LOQ	< LOQ
0049_SWW_00151	< LOQ	< LOQ
0049_SWW_00152	< LOQ	< LOQ
0049_SWW_00153	< LOQ	< LOQ
0049_SWW_00154	< LOQ	< LOQ
0049_SWW_00155	< LOQ	< LOQ
0049_SWW_00159	< LOQ	< LOQ
0049_SWW_00160	< LOQ	< LOQ
0049_SWW_00161	< LOQ	< LOQ
0049_SWW_00162	< LOQ	< LOQ
0049_SWW_00163	< LOQ	0,0703
0049_SWW_00164	< LOQ	< LOQ
0049_SWW_00170	< LOQ	0,0465
0049_SWW_00171	< LOQ	0,0153
0049_SWW_00172	< LOQ	< LOQ
0049_SWW_00181	< LOQ	< LOQ
0049_SWW_00182	< LOQ	< LOQ
0049_SWW_00194	< LOQ	< LOQ
0049_SWW_00199	< LOQ	< LOQ
0049_SWW_00200	< LOQ	< LOQ
0049_SWW_00201	< LOQ	< LOQ
0049_SWW_00202	< LOQ	< LOQ
0049_SWW_00203	< LOQ	< LOQ
0049_SWW_00204	< LOQ	< LOQ
0049_SWW_00205	< LOQ	< LOQ
0049_SWW_00209	< LOQ	< LOQ
0049_SWW_00218	< LOQ	< LOQ

5.1.12 *Findings for silver (Ag)*

The tentative analyses of silver was introduced into the feasibility study in order to investigate the mechanism's applicability to non-organic compounds. All measurements were done with a routine method using ICP-MS operated by the Flemish VMM laboratories. Unfortunately, the method's performance characteristics (LoD = 150 ng/L, LoQ = 390 ng/L) did not allow the detection of Ag ions in the samples taken. Consequently, no conclusive statement can be made.

5.1.13 *Findings for boron (B)*

Boron, as a non-metallic element, was analysed by the same ICP-MS setup used for Ag by VMM. With the limitations of the method used, boron was detected and quantified in 11% of the samples, with concentrations in coastal water samples being obviously much higher compared to inland water samples, due to the natural salinity. Results are summarised in Figure 21. The findings indicate an applicability of the mechanism.



	Max	90° percentile	50° percentile	Mean value
Whole data set	3400.00	3280.00	2100.00	1882.00
Inland	702.00	619.00	439.50	444.00
Coast	3400.00	3304.00	2560.00	2389.53

Figure 21 – Summary findings reported for born by VMM

5.2 Sediment and biota samples

It is commonly agreed that monitoring of sediment and/or biota can be used together with the water matrix to provide a coherent and comprehensive picture of the status of the water bodies within each river basin district. The initial screening of certain chemicals in the monitoring programme will help to identify areas of concern and areas where additional effort is needed, such as increased intensity of sediment, biota, or water monitoring or direct measurements.

According to this guidance, sediment is a recommended matrix for the assessment of the chemical status for some metals and hydrophobic compounds in marine and lentic water bodies. For the purpose of trend monitoring, sediment, or alternatively SPM, and biota are the most suitable matrices for many substances because they integrate, in time and space, the pollution in a specific water body; the changes of pollution in these compartments are not as fast as in the water column and long-term comparisons can be made.

The choice of the matrix to be monitored depends firstly on the physico-chemical properties of the substances and it in the context of this feasibility study it had to be assessed whether the monitoring mechanisms could be used also for sediment and biota samples.

5.2.1 *Observations from feasibility study*

In total only 7 biota samples were received. Given the limited number of samples and the variety of tissues, it was decided that an analysis of the biota samples could be omitted. However, it was concluded that retrieval of biota samples by the tested mechanism would be possible, but would require further instructions.

In the same context, 23 sediment samples were received and processed by the JRC for analysis by means of GC-MS for two selected PBDE compounds. The results are summarised in the figures below. The two substances were detectable in 22% of the samples for BDE-209 and in half of the samples for DBDPE, which proves the appropriateness of the analytical method for the study purpose. No contamination issues were reported. The mechanism can be used for sediment samples.

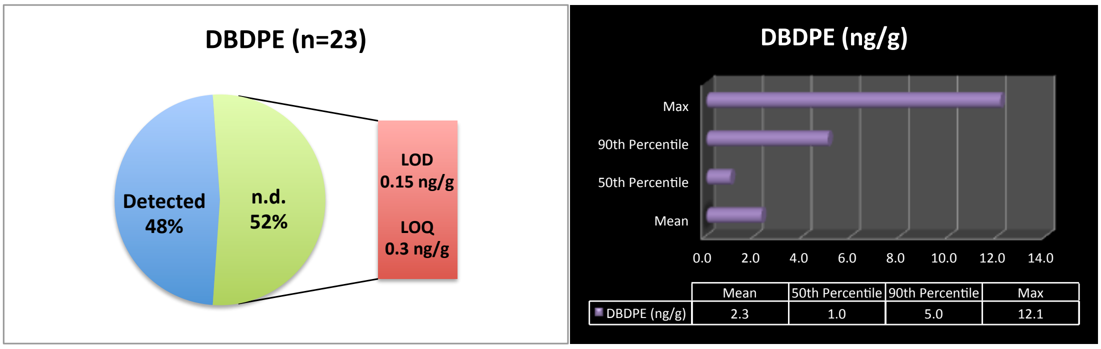


Figure 22 – Summary findings for decabromodiphenylethane (DBDPE) in sediments reported by JRC

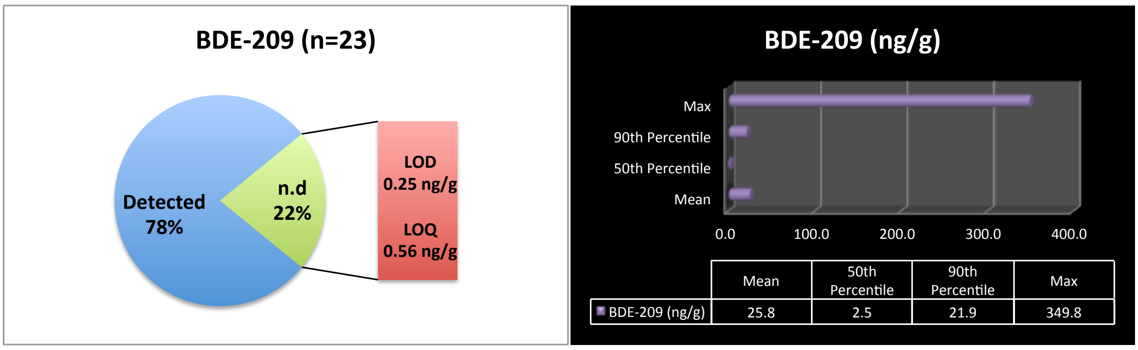


Figure 23- Summary findings for decabromodiphenyl ether (BDE-209) in sediments reported by JRC

5.2.2 *Applicability of Environmental Specimen Banks*

The difficulty in obtaining representative biota samples lead to a consultation with various partners and contact persons involved in the study if there are suitable alternatives. In this context, the existence of the European Specimen Bank Network has to be cited.

There are 17 environmental specimen banks (ESBs) in Europe with many millions of samples from different ecosystem types in ultra-low temperature archives. Ten ESBs systematically collect and store specific samples to provide long term chemical trends in support of chemical regulation. Among these are the German ESB and the UK Fish Tissue Bank in central Europe. Scandinavian countries have a long tradition of maintaining ESBs. This includes Sweden where time trends go back to the late 1960s. France and Spain operate ESBs in Southern Europe. An EU funded INTERREG programme just started between Spain, France and Portugal with the aim to foster systematic monitoring and specimen banking in this European region.

Traditionally, ESBs focus on samples from the marine and limnic compartment, e.g. fish, mussels, suspended particles and fish eating predators. However, larger ESBs also sample specimens from terrestrial ecosystems and human populations. ESBs have analysed temporal trends for a range of metals and organic compounds, e.g. legacy POPs, flame retardants, PFCs, PAHs, organotin compounds, siloxanes, personal care products and pharmaceuticals. Recently, spatial and temporal trend data were reported on mercury in fish from four European ESBs, i.e. in Germany (Lepom, 2012), Sweden and Finland (Miller, 2013) and in the UK ESB (Jürgens, 2013 submitted).

Figure 24 – Impressions from the German Environmental Specimen Bank hosted by the Fraunhofer Institute for Molecular Biology and Applied Ecology, Schmallenberg Germany. H. Rüdel explaining the storage of time series of sediment samples.

Environmental specimen banks (ESBs) provide human and environmental samples for the retrospective analysis of chemicals. Typical ESB features are:

- Environmental samples are routinely collected in a highly standardised manner and all procedures are strictly documented. This greatly reduces the risk that inaccurate sampling and processing of wildlife samples flaw analytical results;
- Retrospective analysis can be initiated with archived samples at any given time to unravel the environmental and human contamination of the past. This enables fast regional or even global geographical monitoring of emerging substances;
- The samples reflect the actual contamination levels and pattern at the time of sampling. Ultra-low temperatures ensure that the chemical and biological information within the samples does not change over time. A time series may therefore cover a large range of historical contamination levels and patterns;
- Regulators can use results from ESBs as authentic evidence for the contamination of the environment. Typical questions from chemical regulation to ESBs are:
    - Is chemical management effective; are contamination levels in general decreasing?
    - Are specific risk management options effective; are contamination levels of those substances decreasing that have been restricted or totally banned from markets?
    - What are the trends for emerging chemicals of concern: are they increasing or decreasing?
    - Can we improve our understanding of environmental contamination by investigating historical samples with state of the art analytical methods?

In view of the scope of this exercise and the upcoming watch list mechanism it is concluded that Environmental Specimen Banks can provide knowledge and data from biota and sediment/SPM monitoring. These data may support existing and upcoming monitoring obligations for substances in these matrices. Existing trend data from retrospective monitoring may feed into the WFD prioritisation process for priority substances candidates.

In addition, it was concluded that a crossover of knowledge may be useful by

- sharing ESBs vast experience on systematic and continuous sampling of biota and sediment/SPM;
- providing recommendations for the statistical evaluation of trend data including trend and species comparisons;
- providing spatial data and time trends from retrospective analysis to the European chemical database IPCHEM;
- foster capacity building for preserving specimens at ultra-low temperatures.

5.3 *Cost assessment and analytical methods*

In order to put Member States and the Commission into a position to decide on the applicability of a monitoring mechanism it was necessary to establish a careful analysis of the underlying ADDITIONAL costs compared to normal monitoring operations. To this end, the following calculation was made.

First, it was assumed that the costs of occurring operations for sampling at each monitoring station are negligible as it was agreed to assess only those monitoring stations which are already part of routine chemical monitoring under the Water Framework Directive.

Costs for dispatch of material and samples as well as packaging materials were easily retrievable from the JRC accounting system. In order to realistically estimate the cost of the analytical measurements, it was decided to tender the analyses of the compounds of interest. For this purpose, four commercial providers of analytical services were contacted outside the study. The companies were not informed about the use or context of the measurements, but were invited to send price quotations for the analytes of interest in 200 water samples. Four European laboratories offering analytical services on a commercial basis, among which one research institute, were invited to submit a price quotation.

The summary results of the tendering are shown in Table 52.

Table 52 – Evaluation of tendering for analytical measurements

Parameter	Minimum cost per sample (€)	Maximum cost per sample (€)	Average cost (€)	Maximum cost*/sample (€)	Average cost (€)
Acesulfame, 1H-Benzotriazole and Tolyltriazoles	25	230	127,5	161	93
AMPA/Glyphosate	25	155	90	108,5	66,75
Bisphenol A	25	293	159	205,1	115,05
Triclosan	25	191	108	133,7	79,35
Triclocarban	25	229	127	160,3	92,65
Carbamazepine + metabolite, Sulfamethoxazole	25	244	134,5	170,8	97,9
Pentafluoroproprionic acid	25				25
Tris-2-chloropropyl phosphate	25	375	200	262,5	143,75
Methyl *tert*-butyl ether	20	146	83	102,2	61,1
Decabromodiphenylethane	25	436	230,5	305,2	165,1
Boron	5	67	36	46,9	25,95
Chloride	5	35	20	24,5	14,75
MTBE					
Total costs/sample (€)	**255**	**2401**	**1315,5**	**1680,7**	**980,35**
Total costs of Pilot Exercise (€)	**56100**	**528220**	**289410**	**369754**	**215677**

*: discounted of about 30% for a batch of 220 samples

Based on the evaluation of the costs for dispatch operations using the European Commission’s current Framework Contract for dispatching operations using a private courier service a sum of 50610 € were spent for the feasibility study. This includes the dispatch of empty packaging containers as well as the pick-up from the sampling storage facilities in the Member States.

To these figures, a realistic cost estimate in terms of work time of the organisation of the study has to be added. Furthermore, the analytical cost estimate for the development and validation of new methods for the purpose of this exercise have to be considered. Based on the staff tariffs applied by the EC JRC for Commission support activities the figures in the table below are obtained.

Table 53 – Additional workforce not covered by price quotations

Operation	Man Months	Grade of staff	cost evaluation according to AA TARIFF in €
Samples dispatch	2	AST 3	12736
Full validation of analytical methods (4 analytes)	3	AST 3/ FG IV	19785
Real sample preparation	4	AST 3	25472
Reporting (Analytical Validation Reports)	2	AST 3/ FG IV	13190
Reporting (Study report)	2	AST 3 / AD 11 (50/50)	18823

Summing the costs of analyses (Table 52) and additional staff costs (Table 53) plus the dispatch costs, the total costs of this feasibility study can be estimated at 356.293, - € based on these figures.

If one considers, in addition, a certain need for contingency as well as other costs, which are difficult to quantify in the context of this study, e.g. overheads, devalorisation of instrumentations, and so forth it is realistic to estimate the cost of such an exercise in the range of 500 to 550 k€ if only water samples are analysed. The estimate may reach up to 1000 k€, if sediment and biota measurements are to be included. Furthermore, costs are significantly higher if QA/QC measures are to be implemented (same parameter in different labs).

6 Conclusions

Based on the feedback received from this study and the experiences gained, a number of important conclusions and recommendations can be made. To begin with, there is an obvious need for a careful documentation of sites and the respective point of contact in order to properly organise the various logistical operations. Although this seems to be trivial, the importance of this step can only be stressed once more. During the pilot study, as on many other occasions, direct communication issues are often the source of delays and problems which in the worst case may lead to loss of the samples to be investigated. The selection of sites should be done in function of likely emission scenarios for the substance to be investigated. It is therefore recommended to build up a sufficiently large number of sampling stations, e.g. 300 to 400. The *ad hoc* selection of sites is not recommended as this will lead to an unnecessary duplication of information gathering when preparing such an exercise for a future watch list.

The example of bisphenol A has clearly underlined the need for a careful protocol for sample container conditioning. Similarly, the use of field blanks and laboratory blanks was very useful to better identify "unexplainable" findings. Although not done in this particular study, it is recommended strongly to perform a stability check of the analytes of interest prior to the actual experiment. Mechanisms and approaches as being used for instance for similar investigations in the field of reference materials have been shown to be useful for this purpose.

As regards the issue of biota and sediment sampling, the mechanism tested seems to be applicable. However, for biota measurements a careful standardisation and harmonisation effort is needed. The use of existing environmental specimen banks has been identified as a useful and viable additional option. Although the ESBs samples will not feature the same degree of spatial representativity, they do allow the establishment of time series and trend analyses.

The study clearly showed the limited comparability of data if measurements are performed in different laboratories for the same analyte. As usual for these cases, a proper programme for analytical quality assurance is needed. Standardised methods, which were also used in this study for glyphosate or MTBE, are not a guarantee per se that the analytical findings are comparable.

As regards the questions raised at the origin of this study (see p. 14) the following answers can be provided

Question 1

Is it possible to collect and centrally analyse a set of samples from 200-250 sampling stations across the EU and within a narrow range of time?

A centrally coordinated approach is possible and could be conducted once or twice per year.

Question 2

What are the limitations of the EU wide snapshot mechanism developed by the JRC in terms of sample capacity, stability and in view of the analytes to be investigated?

Some limitations exist in terms of the number of samples which can be handled by the JRC in a single exercise. We estimate that samples from up to 300 stations is a logistic limit for the current infrastructure. Based on the targeted substances it is recommended, however, to build a larger network of monitoring stations (1000 or so), and to make a sub-selection for specific scenarios.

The issue of analyte stability has to be considered too, in particular if water samples are to be shipped. On-going technological developments using in-situ solid-phase extraction devices, as being investigated by the JRC, may offer a solution to this issue. Within these limits the mechanism can be applied to all analytes of interest.

Question 3

Is it possible to apply the mechanisms to sediment and biota samples?

Although not studied in detail, first findings of this pilot and similar experiences obtained with matrices such as treated biowastes and sewage sludges imply applicability to sediment and biota samples. Synergies with existing infrastructure for environmental specimen banking are strongly suggested.

Question 4

Can the study design deliver analytical method developed on purpose for this exercise in a way that it can be the basis for further normative work and standardization?

The study design can deliver analytical methods as a basis for or input to further normative work. To this end methods need to be targeted to specific compounds and a careful validation and uncertainty budgeting are needed.

Question 5

Are data for the same analyte obtained in different laboratories comparable?

Data for the same analyte obtained in different laboratories are of limited comparability, yet possible. In these cases, the costs for an appropriate QA/QC programme may become significant.

Question 6

What is the cost of such an exercise and which resources are needed?

The estimated costs of this pilot exercise as a whole range from 500 k€ to 1000 k€, which is a reliable basis to extrapolate to future watch list monitoring. However, actual costs of watch list monitoring will be influenced by the matrix/analyte combination, and by how far the monitoring can "piggy back" on existing sampling and analysis. Biota monitoring will cost more per sample compared with water monitoring. The precise costs in the individual member states will depend upon whether they choose to do the analyses in house, in which case there would be an element of method validation and analytical quality control to cover, even though the analysis costs might otherwise be cheaper per sample than if contracting out. Member states might choose to share the "overheads" of the analytical burden. The intended guidance on analytical methods for the substances would be expected to ensure reasonable comparability between member states' results.

Question 7

What information can be obtained from such an exercise?

The accessible data are useful scientific information including pan-European concentrations of the investigated analytes. The tool as such should be made accessible to research activities, e.g. via the Science-Policy Interface. If so, a significantly greater amount of information and knowledge could be generated.

Additional observations and comments

Considerations forwarded and raised after consultation of findings

The following considerations and annotation were received from Germany as an additional input to this section and are complimentary to the above-made statements. Since they form an additional valuable input to the design of watch list monitoring, the authors decided to include them in this chapter:

- The occurrence of substances in surface water is determined by human activities and hydrological characteristics. The selection of sites [in an actual watch list monitoring] depends not only on the emission scenario and use pattern, but also on the run-off, which influences in return also the timing of sampling.
- There is a need for a clear protocol for conditioning the sample container, which itself needs to be made of suitable material for the subsequent analyses. In addition, the sampling procedure itself should be described in detail – including ideally recommendations for suitable sampling devices and pre-cleaning of the samplers. Precautions to be taken by the personnel executing the sampling operations should be described in detail. Any possible source of contamination should be highlighted. Thus, use of plastic buckets, rubber boats, rubber clothes or hand creams should be avoided, when appropriate.
- Methods used for watch list monitoring should be described and documented to a level that they can be used as pre-normative input to standardization or for direct implementation in the laboratories. Guidelines should address also sampling and pre-treatment for which advice should be provided. Aspects of occupational health and hygiene as well as quality assurance and control measures are to be considered.
- Suitable QA/QC measures, in particular for novel and not commonly monitored substances are essential and should be provided. Such information should include

inter alia substance specific requirements on validated analytical methods (minimum performance criteria). Laboratories should be of proven competence and it has to be assessed whether one or more laboratories should be involved in the analyses.

The pilot exercise triggered considerable innovation in monitoring technology to decrease the cost of analyses. Thus, a novel SPE extraction device was developed and tested. Results of this will be presented in a separate technical report of the Commission's in-house science service. This innovative potential of the mechanism could be developed further, e.g. by integrating the previously organised onsite exercises into the watch list monitoring.

As a concluding remark the authors of this report wish to thank all contributing persons involved directly and indirectly in this pilot. The pilot exercise as described here is a result of a considerable commitment of all laboratories participating and should be brought to the attention of a larger audience.

7 Acknowledgements

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9 Annex 1 – Analytical results

The entry of analytical results in Table 1A, 1B and 1C has been harmonized considering the following set of parameters:

- < *LOD*: lower than the limit of detection
- < *LOQ*: lower than the limit of quantification
- *n.a.*: not analysed

Note 1: due to the fact that different calculation methods for LOD/LOQ were applied in the various laboratories, data below these thresholds are of limited comparability.

Note 2: in Table 1B, the highlighted lines indicate anomalies. Issues were found with the project logistics which made track and tracing of samples IDs difficult. Calculation errors were identified in the reporting phase and corrected.

Annex I: Table 1A - Analytical results for silver, boron, chloride, acesulfame, ^{1}H-benzotroazole, 4-tolyltriazole and 5-tolytriazole. Units of measurement are specified in the table

Location code	**Sampling Station**	Ag $_{dissolved}$ (µg/L)	B $_{dissolved}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00001	Devin	< LOD	< LOD	40.7	3.9	0.57	0.24	0.18
0049_SWW_00002	Bratislava	< LOD	< LOD	11.5	0.66	0.14	0.072	0.038
0049_SWW_00003	Bratislava	< LOD	< LOD	11.3	0.76	0.18	0.1	0.058
0049_SWW_00005	Medvedov	< LOD	< LOD	11.7	0.63	0.17	0.083	0.042
0049_SWW_00006	Komarno	< LOD	< LOD	25.2	2.3	1.4	0.32	0.098
0049_SWW_00007	Kamenica nad Hronom	< LOD	< LOD	12.5	1.4	0.18	0.077	0.091
0049_SWW_00008	Salka	< LOD	< LOQ	42.2	6.8	0.11	0.052	0.058
0049_SWW_00009	Ettelbruck	< LOD	< LOD	46.9	4.1	0.86	0.75	0.16
0049_SWW_00010	Wasserbillig	< LOD	< LOD	28.1	2	0.17	0.26	0.12
0049_SWW_00011	Rodange pont à Athus	< LOD	< LOQ	41.9	4.4	2.3	1.9	0.34
0049_SWW_00012	Kautenbach	< LOD	< LOD	26.3	0.97	0.071	0.1	0.065
0049_SWW_00013	Berounka Lahovice	< LOD	< LOD	27.7	2.6	0.27	0.26	0.15
0049_SWW_00014	Lužickà Nisa Hrádek nad Nisou	< LOD	< LOD	58.5	5.5	0.86	0.53	0.36
0049_SWW_00015	Morava Lanžhot	< LOD	< LOD	33.7	3.3	0.8	0.18	0.14
0049_SWW_00016	Odra Bohumin	< LOD	< LOD	86.9	3.3	0.25	0.19	0.14
0049_SWW_00017	Vltava Zelčin	< LOD	< LOD	23.3	1.8	0.13	0.14	0.098
0049_SWW_00018	Labe Obříství	< LOD	< LOD	29.6	2.2	0.21	0.22	0.12
0049_SWW_00019	Labe Valy	< LOD	< LOD	26.4	1.7	0.096	0.14	0.093
0049_SWW_00020	Jizera Nový Vestec	< LOD	< LOD	19.3	1.6	0.056	0.18	0.047
0049_SWW_00021	Orlice Nepasice	< LOD	< LOD	11.8	0.99	0.046	0.27	0.055
0049_SWW_00022	Kristianand	< LOD	2850	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00023	Bømlo			n.a.	< LOQ	< LOQ	< LOD	< LOD
0049_SWW_00024	Trondheimsfjorden	< LOD	1610	n.a.	< LOD	< LOD	< LOD	< LOD

Location code	Sampling Station	Ag dissolved (µg/L)	B dissolved (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00025	Oslofjorden	< LOD	2100	n.a.	0.12	0.018	< LOQ	< LOQ
0049_SWW_00026	Skogsfjordevatnet	< LOD	< LOD	8.5	< LOD	< LOD	< LOD	< LOD
0049_SWW_00027	Mjøsa				< LOD	< LOQ	< LOD	< LOD
0049_SWW_00029	Femunden	< LOD	< LOD	0.7				
0049_SWW_00030	Vansjø				0.075	< LOD	< LOD	< LOD
0049_SWW_00031	Budapest upstream	< LOD	< LOD	10.9	0.73	0.22	0.066	0.038
0049_SWW_00032	Budapest downstream	< LOD	< LOD	11.3	0.78	0.22	0.073	0.043
0049_SWW_00033	Kenyérmezei-patak downstream	< LOD	< LOQ	73.4	32	0.48	0.5	0.39
0049_SWW_00034	Mosoni-Duna at Vének downstream	< LOD	< LOD	28.4	2.3	0.27	0.14	0.079
0049_SWW_00035	Babony-patak at Sajoecseg downstream	< LOD	< LOQ	466.5	16	0.066	0.27	0.25
0049_SWW_00036	Sajo at Sajolad downstream	< LOD	< LOD	58.8	6.4	0.25	0.57	0.16
0049_SWW_00037	Hortobagy-Berettyo at Mezotur	< LOD	< LOQ	26.8	3	0.1	0.12	0.057
0049_SWW_00038	Zagyva at Ujszast	< LOD	< LOQ	65.8	20	0.27	0.55	0.47
0049_SWW_00039	Nemunas zemiau Kaun ties Kulautuva	< LOD	< LOD	16.6	0.16	0.02	0.029	0.024
0049_SWW_00040	Nemunas aukščiau Rusnes	< LOD	< LOD	15.9	0.14	< LOQ	< LOQ	< LOQ
0049_SWW_00041	Akmena-Dane ziotyse	< LOD	< LOD	167.1	0.28	< LOQ	0.05	0.037
0049_SWW_00042	Neris aukščiau Paneriu	< LOD	< LOD	11.7	0.22	< LOQ	< LOQ	< LOQ
0049_SWW_00043	Venta zemiau Mazeikiu	< LOD	< LOD	12.6	0.18	< LOQ	< LOQ	< LOQ
0049_SWW_00044	Kulpe ties Kryziu kalnu	< LOD	< LOQ	94.8	4.6	0.094	0.12	0.18
0049_SWW_00045	Meuse	< LOD	< LOD	14.3	0.54	0.024	0.067	0.049
0049_SWW_00046	Meuse	< LOD	< LOD	30.5	1.9	0.16	0.36	0.21
0049_SWW_00047	Escaut	< LOD	< LOD	53.4	7	0.45	0.77	0.48
0049_SWW_00048	Amblève	< LOD	< LOD	15.2	0.78	0.037	0.028	0.036

Location code	Sampling Station	Ag dissolved (µg/L)	B dissolved (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00049	Garyllis R.				14	0.29	0.17	0.21
0049_SWW_00050	Kouris R.				< LOD	< LOQ	< LOD	< LOD
0049_SWW_00051	Kargotis R.	< LOD	< LOQ	43.5	0.1	< LOD	< LOD	< LOD
0049_SWW_00052	Bolungarvik	< LOD	< LOD	15.3	< LOD	< LOD	< LOD	< LOD
0049_SWW_00053	Eyjafjörður	< LOD	3310	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00054	Ölfusá/ Ölfusárós				< LOD	< LOQ	< LOD	< LOD
0049_SWW_00055	Lake Thingvallavatn				< LOD	< LOD	< LOD	< LOD
0049_SWW_00056	Kollafiörður			n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00057	II Port il Kbir	< LOD	3200	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00058	IX Xghajra	< LOD	3300	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00059	II Port ta' Marsaxlokk	< LOD	3400	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00060	Kinrooi	< LOD	< LOD	34.4	2.9	0.2	0.26	0.15
0049_SWW_00061	Antwerpen	< LOD	702	n.a.	8.5	0.59	0.64	0.29
0049_SWW_00062	Zwalm	< LOD	< LOQ	75.0	9.6	0.48	0.93	0.47
0049_SWW_00063	Poperinge				5.4	0.42	0.44	0.35
0049_SWW_00064	Mannswörth	< LOD	< LOD	48.2	4.9	0.83	0.73	0.2
0049_SWW_00065	Absdorf, uh ARA	< LOD	< LOD	60.9	3.7	0.58	0.29	0.18
0049_SWW_00066	Hainburg	< LOD	< LOD	11.3	0.45	0.17	0.091	0.047
0049_SWW_00067	Antiesen Antiesenhofen	< LOD	< LOD	8.1	< LOQ	0.042	< LOQ	< LOQ
0049_SWW_00068	Jochenstein	< LOD	< LOD	9.2	0.31	0.12	0.05	0.031
0049_SWW_00069	Krems Ansfelden	< LOD	< LOD	17.0	0.88	0.19	0.33	0.13
0049_SWW_00070	Autobahnbrücke Spielfeld	< LOD	< LOD	8.3	0.57	0.22	0.073	0.04
0049_SWW_00071	Lauterach	< LOD	< LOD	29.3	1.4	0.66	0.2	0.17
0049_SWW_00072	Jochenstein	< LOD	< LOD	8.9	0.42	0.1	0.046	0.027
0049_SWW_00073	Bischofsheim	< LOD	< LOD	61.9	3.8	1.5	0.54	0.3
0049_SWW_00074	Mannheim/Neckar	< LOD	< LOQ	65.5	7.1	2.4	0.95	0.35

Location code	Sampling Station	Ag dissolved (µg/L)	B dissolved (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00075	Kleve-Bimmen	< LOD	< LOD	59.7	1.6	0.56	0.27	0.15
0049_SWW_00076	Leverkusen-Rheindorf	< LOD	< LOD	44.4	6.1	3.3	1.2	0.38
0049_SWW_00077	Goch	< LOD	< LOD	56.3	14	3.3	0.63	0.4
0049_SWW_00078	Vreden	< LOD	< LOD	52.0	4.4	1.4	0.84	0.27
0049_SWW_00079	Schmilka, rechts	< LOD	< LOD	35.8	1.9	0.24	0.23	0.14
0049_SWW_00080	Koblenz	< LOD	< LOD	157.6	2.9	0.43	0.49	0.25
0049_SWW_00081	Herbrum	< LOD	< LOD	225.0	2.7	0.67	0.32	0.15
0049_SWW_00082	Seemannshöft				3.5	0.6	0.41	0.16
0049_SWW_00083	Hohenwutzen				2.4	0.23	0.43	0.11
0049_SWW_00084	Lübeck-Moisling	< LOD	< LOD	163.6	3.9	0.4	0.19	0.081
0049_SWW_00085	Anklam	< LOD	< LOD	57.2	0.72	0.087	0.037	< LOQ
0049_SWW_00086	Bremen	< LOD	< LOD	273.0	4.3	0.7	0.43	0.14
0049_SWW_00087	Friedrichstadt	< LOD	< LOD	38.6	0.89	0.085	0.023	0.024
0049_SWW_00088	Groß Rosenburg	< LOD	< LOQ	n.a.	5.1	0.94	0.37	0.18
0049_SWW_00089	101A station	< LOD	560	n.a.	< LOQ	< LOQ	< LOD	< LOD
0049_SWW_00090	Daugava	< LOD	< LOD	3.8	< LOD	< LOD	< LOD	< LOD
0049_SWW_00091	Musa	< LOD	< LOD	24.0	0.36	< LOQ	< LOQ	< LOQ
0049_SWW_00092	Lake Kisezers	< LOD	< LOD	36.1	< LOD	0.04	< LOD	< LOD
0049_SWW_00093	Misa River	< LOD	< LOD	31.9	0.25	0.065	0.031	< LOQ
0049_SWW_00094	Lielupe River	< LOD	< LOD	9.6	0.073	< LOD	< LOD	< LOD
0049_SWW_00095	P004	< LOD	< LOD	10.7	0.077	< LOD	< LOD	< LOD
0049_SWW_00096	PROMAXON				1.8	< LOD	< LOQ	< LOQ
0049_SWW_00097	EVROS_UP				4.3	< LOQ	< LOQ	< LOQ
0049_SWW_00098	Limni Pamvotida	< LOD	< LOD	31.4	0.13	< LOD	< LOQ	< LOD
0049_SWW_00099	Ekvoles Loudia Aliakmona	< LOD	< LOD	13.5	0.18	< LOQ	0.023	< LOQ
0049_SWW_00100	S1	< LOD	3030	n.a.	< LOQ	0.02	0.071	< LOQ

Location code	Sampling Station	Ag $_{\text{dissolved}}$ (µg/L)	B $_{\text{dissolved}}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00101	Ekvoles Spercheiou	< LOD	< LOD	124.7	3.1	0.084	0.094	0.14
0049_SWW_00102	Messara	< LOD	3040	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00103	Narva			n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00104	Kavastu				0.094	< LOQ	< LOQ	< LOQ
0049_SWW_00105	Purtse	< LOD	< LOQ	13.9	< LOD	0.49	0.37	< LOQ
0049_SWW_00106	Oreküla HP	< LOD	< LOD	5.6	< LOD	< LOD	< LOD	< LOD
0049_SWW_00107	Vääna	< LOD	< LOD	10.3	0.071	< LOQ	< LOQ	< LOQ
0049_SWW_00108	Red Burn Bridge	< LOD	< LOD	6.2	< LOD	< LOD	< LOD	< LOD
0049_SWW_00109	Slane Br	< LOD	< LOD	14.7	0.49	0.018	0.02	< LOQ
0049_SWW_00110	Lucan Br	< LOD	< LOD	14.8	1.3	0.083	0.062	0.041
0049_SWW_00111	Graiguenamanagh Br	< LOD	< LOD	18.8	0.54	0.017	0.028	< LOQ
0049_SWW_00112	Leemount Br	< LOD	< LOD	14.3	0.15	< LOQ	< LOQ	< LOQ
0049_SWW_00113	Ford 2 km u/s Gweestion River	< LOD	< LOD	12.1	0.14	< LOD	< LOD	< LOD
0049_SWW_00114	Br. at Killaloe	< LOD	< LOD	13.6	0.17	< LOD	< LOQ	< LOD
0049_SWW_00115	River Lagan	< LOD	< LOD	39.6	6	0.066	0.12	0.069
0049_SWW_00116	River Quoile	< LOD	< LOD	24.1	1.5	0.022	0.025	0.028
0049_SWW_00117	River Clyde at tidal weir	< LOD	< LOD	18.8	5.2	0.1	0.068	0.063
0049_SWW_00118	River North Esk	< LOD	< LOD	10.9	0.14	< LOQ	< LOD	< LOQ
0049_SWW_00119	River Almond	< LOD	< LOD	45.1	9.5	0.99	0.2	0.07
0049_SWW_00120	River Ugie	< LOD	< LOD	35.1	0.69	0.026	0.023	0.025
0049_SWW_00121	River Dee	< LOD	< LOD	19.1	1.7	0.22	0.067	0.042
0049_SWW_00122	River Usk	< LOD	< LOD	11.8	0.87	0.042	< LOQ	< LOQ
0049_SWW_00123	River Humber	< LOD	1440	n.a.	4.6	0.73	0.32	0.22
0049_SWW_00124	Mersey Estuary	< LOD	2390	n.a.	1.7	0.32	0.15	0.11
0049_SWW_00125	Thames	< LOD	2170	n.a.	5.6	0.69	0.47	0.38
0049_SWW_00126	River Ouse	< LOD	< LOD	22.1	1.2	0.076	0.039	0.032

Location code	Sampling Station	Ag$_{\text{dissolved}}$ (µg/L)	B$_{\text{dissolved}}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00127	River Wensum	< LOD	< LOD	53.1	4.1	0.17	0.088	0.044
0049_SWW_00128	River Tame	< LOD	394	102.2	57	5.7	2.7	0.65
0049_SWW_00129	Hampshire Avon	< LOD	< LOD	20.4	1.5	0.097	0.054	0.05
0049_SWW_00130	Cicarlau RO24300	< LOD	< LOD	201.9	2.3	0.066	< LOQ	< LOQ
0049_SWW_00131	Cheresig RO33400	< LOD	< LOD	16.7	1.7	0.053	< LOQ	< LOQ
0049_SWW_00132	Ungheni RO40900	< LOD	< LOD	45.0	1.7	0.12	0.057	0.2
0049_SWW_00133	Otelec locality RO50400	< LOD	< LOD	22.6	0.4	0.083	0.08	0.051
0049_SWW_00134	Bazias RO14011	< LOD	< LOD	18.3	0.85	0.15	0.094	0.045
0049_SWW_00135	Islaz RO87600	< LOD	< LOD	73.7	0.32	0.017	< LOQ	< LOQ
0049_SWW_00136	Clatesti RO107600	< LOD	< LOD	47.9	6.7	0.26	0.21	0.19
0049_SWW_00137	downstream Tandareni RO114220	< LOD	< LOQ	270.9	1.4	0.08	0.15	0.19
0049_SWW_00138	Vranceni RO12500	< LOD	< LOQ	329.2	0.74	0.052	< LOQ	< LOQ
0049_SWW_00139	Oroftiana RO130100	< LOD	< LOD	48.7	0.48	< LOD	< LOQ	< LOQ
0049_SWW_00140	Reni RO14390	< LOD	< LOD	21.1	0.82	0.15	0.072	0.037
0049_SWW_00141	Rijn/Bovenrijn (Bijilands Kanaal) LOBPTN	< LOD	< LOD	92.2	2.7	0.57	0.4	0.13
0049_SWW_00142	Maas IJSDPTN	< LOD	< LOD	49.9	3.2	0.27	0.45	0.18
0049_SWW_00143	Nieuwe Waterweg MAASSS	< LOD	536	n.a.	2.5	0.6	0.36	0.13
0049_SWW_00144	Ijsselmeer VROUWDZ	< LOD	< LOD	115.7	2.9	0.31	0.21	0.11
0049_SWW_00145	Noordwijk NOORDWK	< LOD	2560	n.a.	0.36	0.072	0.053	0.027
0049_SWW_00146	Penide Areias de Vilar	< LOD	< LOD	7.4	0.65	0.046	0.034	0.052
0049_SWW_00147	Barca d'Alva	< LOD	< LOD	16.8	0.83	0.038	0.046	0.047
0049_SWW_00148	Alb. Crestuma	< LOD	< LOD	20.0	0.77	0.051	0.045	0.046
0049_SWW_00149	Ponte Formoselha	< LOD	< LOD	18.3	1.2	0.052	0.051	0.081
0049_SWW_00150	Perais	< LOD	< LOD	78.4	4.9	0.11	0.15	0.14
0049_SWW_00151	Valada_Tejo	< LOD	< LOD	78.1	3.4	0.066	0.17	0.083

Location code	**Sampling Station**	Ag $_{dissolved}$ (µg/L)	B $_{dissolved}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00152	Alb. Roxo	< LOD	< LOD	231.3	0.31	< LOQ	< LOD	< LOQ
0049_SWW_00153	Monte da Vinha	< LOD	< LOD	64.5	2.2	0.052	0.057	0.047
0049_SWW_00154	Vastuupuomi	< LOD	< LOD	3.3	0.069	< LOD	< LOD	< LOQ
0049_SWW_00155	Huruksela	< LOD	< LOD	4.7	0.13	< LOQ	< LOQ	< LOD
0049_SWW_00156	Kalkkistenkoski	< LOD	< LOD	4.9	0.13	< LOQ	< LOQ	< LOQ
0049_SWW_00157	Porvoonjoki	< LOD	< LOD	20.4	7.8	0.95	0.36	0.25
0049_SWW_00158	Vantaa	< LOD	< LOD	22.5	3.3	0.089	0.098	0.076
0049_SWW_00159	Aura 54 ohikulku	< LOD	< LOD	11.0	0.43	0.016	< LOQ	< LOQ
0049_SWW_00160	Nokiankoski 8200 ala	< LOD	< LOD	4.0	0.3	0.034	< LOQ	< LOQ
0049_SWW_00161	Kojo 35 Pori-Tre	< LOD	< LOD	5.5	0.33	0.024	< LOQ	< LOQ
0049_SWW_00162	Oulujoki	< LOD	< LOD	1.1	< LOQ	< LOD	< LOD	< LOD
0049_SWW_00163	ISOHAARA	< LOD	< LOD	1.0	< LOQ	< LOD	< LOD	< LOD
0049_SWW_00164	KUKKOLA	< LOD	< LOD	0.9	< LOD	< LOD	< LOD	< LOD
0049_SWW_00165	Ouche à Crimolois	< LOD	< LOD	46.5	6.3	1.4	0.32	0.31
0049_SWW_00166	Reyssouze à Viriat	< LOD	< LOD	80.7	12	4.6	0.73	0.7
0049_SWW_00167	Ardières à Saint Jean d'Ardières	< LOD	< LOD	21.9	1.9	0.11	0.054	0.045
0049_SWW_00168	Azergues à Lucenay	< LOD	< LOD	66.6	4.7	0.62	0.36	0.17
0049_SWW_00169	Guiers à Saint Genix sur Guiers	< LOD	< LOD	8.8	0.5	0.058	0.026	< LOQ
0049_SWW_00170	L'Yser à Bambecque (CHANGE)	< LOD	< LOD	64.5	7.8	0.29	1.1	0.36
0049_SWW_00171	Les Évoissons à Bergicourt (CHANGE)	< LOD	< LOD	62.3	8.1	0.47	0.46	0.25
0049_SWW_00172	Umbria Tiber	< LOD	< LOD	29.2	1.1	0.16	0.19	0.14
0049_SWW_00173	Toscana Arno 1	< LOD	485	n.a.	5	2.3	0.68	0.56
0049_SWW_00174	Toscana Arno 2	< LOD	< LOQ	50.4	2.2	0.57	0.19	0.16
0049_SWW_00175	Emilia Po Ferrara	< LOD	< LOD	21.9	0.63	0.13	0.049	0.036

Location code	Sampling Station	Ag $_{\text{dissolved}}$ (µg/L)	B $_{\text{dissolved}}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00176	Emilia Reno Ravenna 1	< LOD	< LOQ	64.4	5.2	1	0.62	0.38
0049_SWW_00177	Emilia Reno Ravenna 2	< LOD	< LOQ	55.8	3.8	0.52	0.41	0.35
0049_SWW_00178	Bolzano Adige	< LOD	< LOD	4.5	0.091	0.025	< LOQ	< LOQ
0049_SWW_00179	Lombardia Lambro	< LOD	< LOD	39.1	3	0.69	0.26	0.22
0049_SWW_00180	Veneto Adige	< LOD	< LOD	4.7	0.38	0.036	0.034	0.029
0049_SWW_00181	Piemonte Tanaro	< LOD	< LOD	9.6	0.069	0.029	< LOQ	< LOQ
0049_SWW_00182	Piemonte Po	< LOD	< LOD	10.8	0.18	0.11	0.058	0.05
0049_SWW_00183	IT18Amato3	< LOD	< LOD	15.2	< LOQ	< LOD	< LOD	< LOD
0049_SWW_00184	IT18RC39	< LOD	2980	n.a.	< LOD	< LOD	< LOD	< LOD
0049_SWW_00185	Stockholm Centralbron	< LOD	< LOD	15.0	0.71	0.022	0.026	< LOQ
0049_SWW_00186	Åsbro	< LOD	< LOD	12.1	0.35	< LOQ	< LOQ	< LOQ
0049_SWW_00187	Alelyckan	< LOD	< LOD	76.6	0.11	< LOQ	< LOD	< LOD
0049_SWW_00188	Norrköping	< LOD	< LOD	11.9	0.28	< LOQ	0.025	< LOQ
0049_SWW_00189	Älvkarleby	< LOD	< LOD	2.0	< LOQ	< LOD	< LOQ	< LOQ
0049_SWW_00190	Emsfors	< LOD	< LOD	10.2	0.25	< LOQ	< LOQ	< LOQ
0049_SWW_00191	Fyrisån Flottsund	< LOD	< LOD	24.3	2.1	0.084	0.057	0.05
0049_SWW_00192	Struma	< LOD	< LOD	18.6	16	0.029	0.027	0.027
0049_SWW_00193	Maritsa 1	< LOD	< LOD	13.9	4.5	< LOQ	< LOQ	< LOQ
0049_SWW_00194	Maritsa 2	< LOD	< LOD	20.0	5.6	0.032	0.027	< LOQ
0049_SWW_00195	Timok	< LOD	< LOD	20.0	1.4	< LOD	< LOD	< LOD
0049_SWW_00196	Iskar	< LOD	< LOD	37.8	27	0.26	0.24	0.36
0049_SWW_00197	Devnenska	< LOD	< LOD	45.0	1.5	< LOD	< LOD	< LOD
0049_SWW_00198	Burgas	< LOD	< LOQ	310.2	23	0.24	0.11	0.13
0049_SWW_00199	ARH230902	< LOD	782	n.a.	0.83	0.032	0.085	0.042
0049_SWW_00200	Fyn6900017	< LOD	1900	n.a.	0.76	0.047	0.064	0.032
0049_SWW_00201	RKB5010	< LOD	< LOD	35.4	1.4	0.094	0.11	0.093

Location code	Sampling Station	$Ag_{dissolved}$ (µg/L)	$B_{dissolved}$ (µg/L)	Chloride (mg/L)	Acesulfame (µg/L)	^{1}H-Benzotriazole (µg/L)	4-Tolyltriazole (µg/L)	5-Tolyltirazole (µg/L)
0049_SWW_00202	RKB8290	< LOD	330	n.a.	0.083	< LOD	< LOD	< LOD
0049_SWW_00203	ARH 90293	< LOD	< LOD	36.7	0.12	< LOD	< LOQ	< LOQ
0049_SWW_00204	STO 01.15.16	< LOD	< LOD	78.2	0.22	< LOD	0.02	0.025
0049_SWW_00205	ARH 110114	< LOD	< LOD	46.5	6.2	0.16	0.33	0.096
0049_SWW_00206	R. Guadiana-E.A. Balbuena	< LOD	< LOD	54.0	0.79	< LOQ	< LOQ	< LOQ
0049_SWW_00207	Captacion Bochanza	< LOD	< LOQ	441.7	0.81	< LOQ	< LOQ	< LOQ
0049_SWW_00208	Guadiana en Azud de Benavides	< LOD	< LOD	66.2	2.9	0.045	0.059	0.038
0049_SWW_00209	E. Puente Navarro-Presa	< LOD	217	330.3	2.5	< LOQ	< LOQ	< LOD
0049_SWW_00210	Ebro / Tortosa	< LOD	< LOD	176.9	1.3	0.06	0.072	0.065
0049_SWW_00211	Zadorra / Vitoria - Trespuentes	< LOD	< LOQ	62.0	4.9	0.4	0.83	0.22
0049_SWW_00212	Ebro / Presa Pina	< LOD	< LOD	418.8	3.8	0.15	0.12	0.15
0049_SWW_00213	Arga / Ororbia	< LOD	< LOQ	202.7	20	1.7	1.4	0.31
0049_SWW_00214	Alcalà - Henares	< LOD	< LOD	178.6	8.6	0.6	0.27	0.27
0049_SWW_00215	E. Presa del Rey-Jarama	< LOD	< LOD	130.7	9.2	2.9	1.3	1
0049_SWW_00216	Rivas-Vaciamadrid-Manzanares	< LOD	< LOD	100.6	7.5	4	1.6	0.74
0049_SWW_00217	Aranjuez-Jarama	< LOD	< LOQ	178.8	8.2	1.2	0.62	0.65
0049_SWW_00218	Bargas-Guadarrama	< LOD	< LOD	120.2	1.7	1.8	1.2	< LOQ
0049_SWW_00219	Toledo1-Tajo	< LOD	< LOD	212.6	9.1	0.5	0.33	0.31
0049_SWW_00220	Arlanzon en Villavieja	< LOD	< LOQ	77.7	10	0.76	0.67	0.66
0049_SWW_00221	Pisuerga en Simancas	< LOD	< LOD	31.6	3.5	0.33	0.23	0.18
0049_SWW_00222	Duero en Zamora	< LOD	< LOD	38.3	3	0.23	0.15	0.15

Annex I: Table IB - Analytical results for glyphosate, AMPA and MTBE. Units of measurement are specified in the table

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00001	Devin	< LOD	853	0.52	< LOQ	< LOQ	< LOD
0049_SWW_00002	Bratislava	< LOD	144	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00003	Bratislava	< LOD	132	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00005	Medvedov	< LOD	122	0.11	< LOQ	< LOQ	< LOD
0049_SWW_00006	Komarno	< LOD	485	0.35	< LOQ	< LOQ	< LOD
0049_SWW_00007	Kamenica nad Hronom	< LOD	1460	0.96	< LOQ	< LOQ	< LOD
0049_SWW_00008	Salka		469			< LOQ	
0049_SWW_00009	Ettelbruck	0.16	1170	0.76	< LOQ	< LOQ	0.16
0049_SWW_00010	Wasserbillig		721			< LOQ	
0049_SWW_00011	Rodange pont à Athus		2240			0.0318	
0049_SWW_00012	Kautenbach		867			< LOQ	
0049_SWW_00013	Berounka Lahovice	< LOD	516	0.35	< LOQ	< LOQ	< LOD
0049_SWW_00014	Lužickà Nisa Hrádek nad Nisou	< LOD	464	0.36	< LOQ	< LOQ	< LOD
0049_SWW_00015	Morava Lanžhot	< LOD	711	0.69	< LOQ	0.0439	< LOD
0049_SWW_00016	Odra Bohumin	0.3	11400	9	< LOQ	< LOQ	0.3
0049_SWW_00017	Vltava Zelčin	< LOD	310	0.18	0.734	0.838	< LOD
0049_SWW_00018	Labe Obříství	< LOD	1010	0.68	0.219	0.206	< LOD
0049_SWW_00019	Labe Valy	0.1	610	0.41	0.101	0.0824	0.1
0049_SWW_00020	Jizera Nový Vestec	< LOD	262	0.21	< LOQ	< LOQ	< LOD
0049_SWW_00021	Orlice Nepasice		370			0.0252	
0049_SWW_00022	Kristianand	< LOD	< LOQ	< LOD	0.124	0.0981	< LOD
0049_SWW_00023	Bømlo	< LOD	< LOQ	< LOD	0.156	0.508	< LOD
0049_SWW_00024	Trondheimsfjorden	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00025	Oslofjorden	< LOD	< LOQ	< LOD	< LOQ	0.0266	< LOD
0049_SWW_00026	Skogsfjordevatnet	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00027	Mjøsa	< LOD	< LOQ	< LOD	< LOQ	0.0228	< LOD
0049_SWW_00029	Femunden						
0049_SWW_00030	Vansjø	< LOD	< LOQ	< LOD	< LOQ	0.0413	< LOD
0049_SWW_00031	Budapest upstream	< LOD	155	0.13	< LOQ	0.0148	< LOD
0049_SWW_00032	Budapest downstream	< LOD	204	0.13	< LOQ	0.0326	< LOD
0049_SWW_00033	Kenyérmezei-patak downstream	0.44	5070	3.55	0.167	0.145	0.44
0049_SWW_00034	Mosoni-Duna at Vének downstream	< LOD	543	0.36	< LOQ	0.0261	< LOD
0049_SWW_00035	Babony-patak at Sajoecseg downstream		722			< LOQ	
0049_SWW_00036	Sajo at Sajolad downstream		1840			< LOQ	
0049_SWW_00037	Hortobagy-Berettyo at Mezotur		1040			< LOQ	
0049_SWW_00038	Zagyva at Ujszast		1800			< LOQ	
0049_SWW_00039	Nemunas zemiau Kaun ties Kulautuva	< LOD	119	< LOD	< LOQ	0.015	< LOD
0049_SWW_00040	Nemunas aukščiau Rusnes	< LOD	126	< LOD	< LOQ	0.012	< LOD
0049_SWW_00041	Akmena-Dane ziotyse	< LOD	246	0.2	< LOQ	0.0934	< LOD
0049_SWW_00042	Neris aukščiau Paneriu	< LOD	40	< LOD	< LOQ	0.0216	< LOD
0049_SWW_00043	Venta zemiau Mazeikiu		90			0.0231	
0049_SWW_00044	Kulpe ties Kryziu kalnu		613			0.146	
0049_SWW_00045	Meuse	< LOD	297	0.23	< LOQ	0.0289	< LOD
0049_SWW_00046	Meuse	0.12	996	0.73	< LOQ	0.0379	0.12
0049_SWW_00047	Escaut	1.08	3730	2.4	< LOQ	0.0968	1.08

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00048	Amblève	< LOD	226	0.12	< LOQ		< LOD
0049_SWW_00049	Garyllis R.	0.16	1110	0.86	< LOQ	0.0239	0.16
0049_SWW_00050	Kouris R.	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00051	Kargotis R.	0.12	143	< LOD	< LOQ	0.015	0.12
0049_SWW_00052	Bolungarvik	< LOD	56	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00053	Eyjafjörður		< LOQ			< LOQ	
0049_SWW_00054	Ölfusá/ Ölfusárós	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00055	Lake Thingvallavatn	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00056	Kollafiörður	< LOD	< LOQ	< LOD	< LOQ		< LOD
0049_SWW_00057	II Port il Kbir	< LOD	< LOQ	< LOD	< LOQ	0.0238	< LOD
0049_SWW_00058	IX Xghajra	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00059	II Port ta' Marsaxlokk	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00060	Kinrooi		2820			0.115	
0049_SWW_00061	Antwerpen		1490			0.0881	
0049_SWW_00062	Zwalm		7970			0.0973	
0049_SWW_00063	Poperinge		7990			< LOQ	
0049_SWW_00064	Mannswörth	< LOD	869	0.67	< LOQ	< LOQ	< LOD
0049_SWW_00065	Absdorf, uh ARA	0.33	1150	0.9	< LOQ	< LOQ	0.33
0049_SWW_00066	Hainburg	< LOD	183	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00067	Antiesen Antiesenhofen	< LOD	196	0.12	< LOQ	< LOQ	< LOD
0049_SWW_00068	Jochenstein	< LOD	132	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00069	Krems Ansfelden		180			< LOQ	
0049_SWW_00070	Autobahnbrücke Spielfeld	< LOD	167	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00071	Lauterach	< LOD	630	0.49	< LOQ	< LOQ	< LOD
0049_SWW_00072	Jochenstein	< LOD	158	< LOD	< LOQ	< LOQ	< LOD

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00073	Bischofsheim	< LOD	1080	0.74	< LOQ	0.0758	< LOD
0049_SWW_00074	Mannheim/Neckar		1590			< LOQ	
0049_SWW_00075	Kleve-Bimmen		330			0.0655	
0049_SWW_00076	Leverkusen-Rheindorf	< LOD	329	0.25	< LOQ	< LOQ	< LOD
0049_SWW_00077	Goch	0.13	2250	1.55	< LOQ	0.03	0.13
0049_SWW_00078	Vreden	0.18	1540	1.03	< LOQ	0.0226	0.18
0049_SWW_00079	Schmilka, rechts	< LOD	514	0.39	0.818	0.458	< LOD
0049_SWW_00080	Koblenz	< LOD	843	0.6	< LOQ	0.0256	< LOD
0049_SWW_00081	Herbrum	< LOD	459	0.29	< LOQ	0.0445	< LOD
0049_SWW_00082	Seemannshöft	< LOD	904	0.56	< LOQ	0.0574	< LOD
0049_SWW_00083	Hohenwutzen	< LOD	1310	1.06	< LOQ	< LOQ	< LOD
0049_SWW_00084	Lübeck-Moisling	< LOD	434	0.33	< LOQ	< LOQ	< LOD
0049_SWW_00085	Anklam	< LOD	247	0.17	< LOQ	< LOQ	< LOD
0049_SWW_00086	Bremen	< LOD	855	0.4	< LOQ	0.0567	< LOD
0049_SWW_00087	Friedrichstadt	< LOD	151	0.11	0.117	0.0428	< LOD
0049_SWW_00088	Groß Rosenburg	< LOD	2110	1.53	< LOQ	0.0282	< LOD
0049_SWW_00089	101A station	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00090	Daugava	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00091	Musa	< LOD	74	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00092	Lake Kisezers	< LOD	< LOQ	< LOD	< LOQ	0.044	< LOD
0049_SWW_00093	Misa River	0.25	417	0.29	0.23	0.255	0.25
0049_SWW_00094	Lielupe River	< LOD	63	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00095	P004	< LOD	36	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00096	PROMAXON	< LOD	129	< LOD	< LOQ		< LOD
0049_SWW_00097	EVROS_UP	< LOD	346	0.28	< LOQ		< LOD
0049_SWW_00098	Limni Pamvotida	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD

Location code	Sampling Station	**Glyphosate** **(CZ data in ng/L)**	**Glyphosate** **(UK data in µg/L)**	**AMPA** **(CZ data in ng/L)**	**AMPA** **(UK data in µg/L)**	**MTBE** **(NL data in µg/L)**	MTBE (UK data in µg/L)
0049_SWW_00099	Ekvoles Loudia Aliakmona	< LOD	169	0.12	< LOQ	< LOQ	< LOD
0049_SWW_00100	S1	< LOD	< LOQ	< LOD	0.186	0.251	< LOD
0049_SWW_00101	Ekvoles Spercheiou	< LOD	2630	1.68	< LOQ	0.0189	< LOD
0049_SWW_00102	Messara		< LOQ			0.0737	
0049_SWW_00103	Narva	< LOD	< LOQ	< LOD	< LOQ	0.0456	< LOD
0049_SWW_00104	Kavastu	< LOD	< LOQ	< LOD	1.24	1.329	< LOD
0049_SWW_00105	Purtse		< LOQ				
0049_SWW_00106	Oreküla HP		< LOQ			< LOQ	
0049_SWW_00107	Vääna		72			0.0262	
0049_SWW_00108	Red Burn Bridge		< LOQ			0.0211	
0049_SWW_00109	Slane Br		270			0.0178	
0049_SWW_00110	Lucan Br	< LOD	155	0.11	< LOQ	< LOQ	< LOD
0049_SWW_00111	Graiguenamanagh Br		167			0.0668	
0049_SWW_00112	Leemount Br		55			< LOQ	
0049_SWW_00113	Ford 2 km u/s Gweestion River	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00114	Br. at Killaloe		27			< LOQ	
0049_SWW_00115	River Lagan		1070			< LOQ	
0049_SWW_00116	River Quoile		263			< LOQ	
0049_SWW_00117	River Clyde at tidal weir		287			< LOQ	
0049_SWW_00118	River North Esk		< LOQ			0.0352	
0049_SWW_00119	River Almond		411			< LOQ	
0049_SWW_00120	River Ugie		108			< LOQ	
0049_SWW_00121	River Dee	< LOD	283	0.17	< LOQ	< LOQ	< LOD
0049_SWW_00122	River Usk	< LOD	115	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00123	River Humber	< LOD	1610	1.01	< LOQ	0.0437	< LOD

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00124	Mersey Estuary	< LOD	1260	0.77	< LOQ	< LOQ	< LOD
0049_SWW_00125	Thames	< LOD	1120	0.78	< LOQ	< LOQ	< LOD
0049_SWW_00126	River Ouse	0.14	320	0.17	< LOQ	< LOQ	0.14
0049_SWW_00127	River Wensum	0.14	541	0.33	< LOQ	< LOQ	0.14
0049_SWW_00128	River Tame	0.4	8900	6.75	0.116	0.130	0.4
0049_SWW_00129	Hampshire Avon	< LOD	144	0.11	< LOQ	< LOQ	< LOD
0049_SWW_00130	Cicarlau RO24300	< LOD	53	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00131	Cheresig RO33400	< LOD	210	0.16	< LOQ	< LOQ	< LOD
0049_SWW_00132	Ungheni RO40900	< LOD	771	0.59	0.125	< LOQ	< LOD
0049_SWW_00133	Otelec locality RO50400	< LOD	1180	0.8	0.158	0.146	< LOD
0049_SWW_00134	Bazias RO14011		333				
0049_SWW_00135	Islaz RO87600		< LOQ			< LOQ	
0049_SWW_00136	Clatesti RO107600		1820			0.104	
0049_SWW_00137	downstream Tandareni RO114220		3140			< LOQ	
0049_SWW_00138	Vranceni RO12500		227			2.80	
0049_SWW_00139	Oroftiana RO130100	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00140	Reni RO14390		289			0.0373	
0049_SWW_00141	Rijn/Bovenrijn (Bijilands Kanaal) LOBPTN	< LOD	771	0.47	< LOQ	< LOQ	< LOD
0049_SWW_00142	Maas IJSDPTN		1680			0.151	
0049_SWW_00143	Nieuwe Waterweg MAASSS	< LOD	734	0.48	0.219	0.218	< LOD
0049_SWW_00144	Ijsselmeer VROUWDZ		< LOQ			< LOQ	
0049_SWW_00145	Noordwijk NOORDWK		118			< LOQ	
0049_SWW_00146	Penide Areias de Vilar	< LOD	280	0.26	< LOQ	0.0918	< LOD
0049_SWW_00147	Barca d'Alva	< LOD	239	0.26	< LOQ	0.0770	< LOD

Location code	Sampling Station	**Glyphosate (CZ data in ng/L)**	**Glyphosate (UK data in µg/L)**	**AMPA (CZ data in ng/L)**	**AMPA (UK data in µg/L)**	**MTBE (NL data in µg/L)**	MTBE (UK data in µg/L)
0049_SWW_00148	Alb. Crestuma	< LOD	342	0.26	0.817	0.542	< LOD
0049_SWW_00149	Ponte Formoselha	< LOD	1160	0.74	< LOQ	< LOQ	< LOD
0049_SWW_00150	Perais	< LOD	442	0.28	< LOQ	< LOQ	< LOD
0049_SWW_00151	Valada_Tejo	< LOD	620	0.53	< LOQ	< LOQ	< LOD
0049_SWW_00152	Alb. Roxo	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00153	Monte da Vinha	< LOD	1830	1.1	< LOQ	< LOQ	< LOD
0049_SWW_00154	Vastuupuomi	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00155	Huruksela	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00156	Kalkkistenkoski		< LOQ			< LOQ	
0049_SWW_00157	Porvoonjoki		160			< LOQ	
0049_SWW_00158	Vantaa		73			< LOQ	
0049_SWW_00159	Aura 54 ohikulku	0.18	209	0.13	< LOQ	< LOQ	0.18
0049_SWW_00160	Nokiankoski 8200 ala	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00161	Kojo 35 Pori-Tre	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00162	Oulujoki	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00163	ISOHAARA	< LOD	< LOQ	< LOD	< LOQ	0.0703	< LOD
0049_SWW_00164	KUKKOLA	< LOD	< LOQ	0.13	< LOQ	< LOQ	< LOD
0049_SWW_00165	Ouche à Crimolois		1200			< LOQ	
0049_SWW_00166	Reyssouze à Viriat		1880			0.0364	
0049_SWW_00167	Ardières à Saint Jean d'Ardières		1220			< LOQ	
0049_SWW_00168	Azergues à Lucenay		1710			< LOQ	
0049_SWW_00169	Guiers à Saint Genix sur Guiers		178			< LOQ	
0049_SWW_00170	L'Yser à Bambecque (CHANGE)	0.71	1730	1.52	< LOQ	0.0465	0.71
0049_SWW_00171	Les Évoissons à Bergicourt	0.35	2030	1.87	< LOQ	0.0153	0.35

Location code	**Sampling Station**	**Glyphosate (CZ data in ng/L)**	**Glyphosate (UK data in µg/L)**	**AMPA (CZ data in ng/L)**	**AMPA (UK data in µg/L)**	**MTBE (NL data in µg/L)**	MTBE (UK data in µg/L)
	(CHANGE)						
0049_SWW_00172	Umbria Tiber	0.11	1720	1.31	< LOQ	< LOQ	0.11
0049_SWW_00173	Toscana Arno 1		9530			0.190	
0049_SWW_00174	Toscana Arno 2		2330			< LOQ	
0049_SWW_00175	Emilia Po Ferrara		703			0.0299	
0049_SWW_00176	Emilia Reno Ravenna 1		2540			< LOQ	
0049_SWW_00177	Emilia Reno Ravenna 2		2090			< LOQ	
0049_SWW_00178	Bolzano Adige		< LOQ			0.0142	
0049_SWW_00179	Lombardia Lambro		2270			0.0707	
0049_SWW_00180	Veneto Adige		207			< LOQ	
0049_SWW_00181	Piemonte Tanaro	< LOD	237	0.15	< LOQ	< LOQ	< LOD
0049_SWW_00182	Piemonte Po	< LOD	331	0.2	< LOQ	< LOQ	< LOD
0049_SWW_00183	IT18Amato3		< LOQ			< LOQ	
0049_SWW_00184	IT18RC39		< LOQ			< LOQ	
0049_SWW_00185	Stockholm Centralbron		< LOQ			0.0392	
0049_SWW_00186	Åsbro		< LOQ			< LOQ	
0049_SWW_00187	Alelyckan		< LOQ			< LOQ	
0049_SWW_00188	Norrköping		< LOQ			< LOQ	
0049_SWW_00189	Älvkarleby		< LOQ			< LOQ	
0049_SWW_00190	Emsfors		< LOQ			< LOQ	
0049_SWW_00191	Fyrisån Flottsund		< LOQ			< LOQ	
0049_SWW_00192	Struma		581			0.0254	
0049_SWW_00193	Maritsa 1		479			0.0213	
0049_SWW_00194	Maritsa 2	< LOD	472	0.34	< LOQ	< LOQ	< LOD
0049_SWW_00195	Timok		< LOQ			< LOQ	

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00196	Iskar		873			0.145	
0049_SWW_00197	Devnenska		31			0.0408	
0049_SWW_00198	Burgas		< LOQ			0.0633	
0049_SWW_00199	ARH230902	< LOD	68	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00200	Fyn6900017	< LOD	47	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00201	RKB5010	< LOD	208	0.17	< LOQ	< LOQ	< LOD
0049_SWW_00202	RKB8290	< LOD	< LOQ	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00203	ARH 90293	< LOD	159	0.11	< LOQ	< LOQ	< LOD
0049_SWW_00204	STO 01.15.16	0.15	251	0.19	< LOQ	< LOQ	0.15
0049_SWW_00205	ARH 110114	< LOD	53	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00206	R. Guadiana-E.A. Balbuena		429			0.0148	
0049_SWW_00207	Captacion Bochanza		153			< LOQ	
0049_SWW_00208	Guadiana en Azud de Benavides		1510			< LOQ	
0049_SWW_00209	E. Puente Navarro-Presa	< LOD	34	< LOD	< LOQ	< LOQ	< LOD
0049_SWW_00210	Ebro / Tortosa		< LOQ			< LOQ	
0049_SWW_00211	Zadorra / Vitoria - Trespuentes		1460			0.0165	
0049_SWW_00212	Ebro / Presa Pina		1510			< LOQ	
0049_SWW_00213	Arga / Ororbia		7150			< LOQ	
0049_SWW_00214	Alcalà - Henares		5600			< LOQ	
0049_SWW_00215	E. Presa del Rey-Jarama		8300			< LOQ	
0049_SWW_00216	Rivas-Vaciamadrid-Manzanares		8070			0.0169	
0049_SWW_00217	Aranjuez-Jarama		3950			< LOQ	
0049_SWW_00218	Bargas-Guadarrama	< LOD	4250	2.95	< LOQ	< LOQ	< LOD

Location code	Sampling Station	Glyphosate (CZ data in ng/L)	Glyphosate (UK data in µg/L)	AMPA (CZ data in ng/L)	AMPA (UK data in µg/L)	MTBE (NL data in µg/L)	MTBE (UK data in µg/L)
0049_SWW_00219	Toledo1-Tajo		4670			< LOQ	
0049_SWW_00220	Arlanzon en Villavieja		9450			< LOQ	
0049_SWW_00221	Pisuerga en Simancas		2060			< LOQ	
0049_SWW_00222	Duero en Zamora		1600			< LOQ	

Annex I: Table 1C - Analytical results for TCPP, carbamazepine, 10,11-dihydroxy-10,11-dihydrocarbamazepine, sulfamethoxazole, PFPrA, triclosan and triclocarban
Units of measurement are specified in the table

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00001	Devin	373	202	266	85.7		< LOQ	< LOQ
0049_SWW_00002	Bratislava	69.1	33.7	51.2	<LOQ		< LOQ	< LOQ
0049_SWW_00003	Bratislava	25.5	128	250	14.9		< LOQ	< LOQ
0049_SWW_00005	Medvedov	59.1	34.4	45	9.7		< LOQ	< LOQ
0049_SWW_00006	Komarno	145	87.0	140	28.4		< LOQ	< LOQ
0049_SWW_00007	Kamenica nad Hronom	170	58.8	84.9	13.5		< LOQ	< LOQ
0049_SWW_00008	Salka	212	228	330	34.3		< LOQ	< LOQ
0049_SWW_00009	Ettelbruck	1022	135	245	51.2		10	< LOQ
0049_SWW_00010	Wasserbillig	158	57.3	102	21.3	4.68	< LOQ	< LOQ
0049_SWW_00011	Rodange pont à Athus	548	226	306	25.6		< LOQ	< LOQ
0049_SWW_00012	Kautenbach	231	38.3	40.5	7.9	2.35	< LOQ	< LOQ
0049_SWW_00013	Berounka Lahovice	481	76.9	117	27.3		< LOQ	< LOQ
0049_SWW_00014	Lužickà Nisa Hrádek nad Nisou	521	290	372	187		< LOQ	< LOQ
0049_SWW_00015	Morava Lanžhot	204	139	150	59.0		< LOQ	< LOQ
0049_SWW_00016	Odra Bohumin	297	191	281	39.7	24.5	< LOQ	< LOQ
0049_SWW_00017	Vltava Zelčin	199	69.1	115	42.3		< LOQ	< LOQ
0049_SWW_00018	Labe Obříství	466	87.5	129	49.4		< LOQ	< LOQ
0049_SWW_00019	Labe Valy	195	78.9	109	40.8		< LOQ	< LOQ
0049_SWW_00020	Jizera Nový Vestec	133	55.7	58.1	1.4		< LOQ	< LOQ
0049_SWW_00021	Orlice Nepasice	74.9	50.3	56.7	24.2		< LOQ	< LOQ
0049_SWW_00022	Kristianand	n.a.	4.3	7.75	0.5		< LOQ	< LOQ
0049_SWW_00023	Bømlo	n.a.	4.6	3.1	< LOQ		< LOQ	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00024	Trondheimsfjorden	< LOQ	1.1	0.951	< LOQ		< LOQ	< LOQ
0049_SWW_00025	Oslofjorden	24.7	5.3	8.84	1.1		< LOQ	< LOQ
0049_SWW_00026	Skogsfjordevatnet	< LOQ	< LOQ	< LOQ	0.0		< LOQ	< LOQ
0049_SWW_00027	Mjøsa	6.50	2.1	4.66	0.3		< LOQ	< LOQ
0049_SWW_00029	Femunden	< LOQ	< LOQ	< LOQ	< LOQ			
0049_SWW_00030	Vansjø	17.3	29.8	19.2	< LOQ		< LOQ	< LOQ
0049_SWW_00031	Budapest upstream						< LOQ	< LOQ
0049_SWW_00032	Budapest downstream	73.5	37.3	48.4	8.6		< LOQ	< LOQ
0049_SWW_00033	Kenyérmezei-patak downstream	873	1830	181	241		14	< LOQ
0049_SWW_00034	Mosoni-Duna at Vének downstream	142	110	157	9.6		< LOQ	< LOQ
0049_SWW_00035	Babony-patak at Sajoecseg downstream	465	1340	1930	49.9	45	< LOQ	< LOQ
0049_SWW_00036	Sajo at Sajolad downstream	1199	347	459	74.1	1.46	5	< LOQ
0049_SWW_00037	Hortobagy-Berettyo at Mezotur	84.9	134	176	65.7	5.62	< LOQ	< LOQ
0049_SWW_00038	Zagyva at Ujszast	410	932	834	91.4	44.2	< LOQ	< LOQ
0049_SWW_00039	Nemunas zemiau Kaun ties Kulautuva	81.0	16.0	28.3	6.9		19	< LOQ
0049_SWW_00040	Nemunas aukščiau Rusnes	27.2	13.3	24.9	6.1		< LOQ	< LOQ
0049_SWW_00041	Akmena-Dane ziotyse	90.9	26.5	70.7	12.3		< LOQ	< LOQ
0049_SWW_00042	Neris aukščiau Paneriu	33.0	18.4	43	8.6		< LOQ	< LOQ
0049_SWW_00043	Venta zemiau Mazeikiu	56.5	13.4	37	5.9		< LOQ	< LOQ
0049_SWW_00044	Kulpe ties Kryziu kalnu	586	402	844	152		5	< LOQ
0049_SWW_00045	Meuse	50.1	13.6	26.1	4.4		< LOQ	< LOQ
0049_SWW_00046	Meuse	153	38.1	56.9	10.7		< LOQ	< LOQ

Location code	Sampling Station	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00047	Escaut	2701	209	409	52.8		18	< LOQ
0049_SWW_00048	Amblève	23.2	14.4	15.2	2.1		< LOQ	< LOQ
0049_SWW_00049	Garyllis R.	815	3670	530	200		11	< LOQ
0049_SWW_00050	Kouris R.	< LOQ	< LOQ	0.4	3.3		5	< LOQ
0049_SWW_00051	Kargotis R.	10.9	1.4	1.04	0.4		< LOQ	< LOQ
0049_SWW_00052	Bolungarvik	5.53	< LOQ	< LOQ	< LOQ		< LOQ	< LOQ
0049_SWW_00053	Eyjafjörður	8.79	0.7	0.879	1.0	< LOQ	< LOQ	< LOQ
0049_SWW_00054	Ölfusá/ Ölfusárós	< LOQ	17.1	12.7	< LOQ		< LOQ	< LOQ
0049_SWW_00055	Lake Thingvallavatn	< LOQ	17.6	13.4	< LOQ		< LOQ	< LOQ
0049_SWW_00056	Kollafiörður	< LOQ	1.2	0.503	< LOQ		< LOQ	< LOQ
0049_SWW_00057	II Port il Kbir	< LOQ	0.1	0.263	0.1		< LOQ	< LOQ
0049_SWW_00058	IX Xghajra		2.1	54.6	0.7		< LOQ	< LOQ
0049_SWW_00059	II Port ta' Marsaxlokk	4.12	0.1	0.218	0.2		29	< LOQ
0049_SWW_00060	Kinrooi	149.5	48.7	76.9	15.4	4.56	< LOQ	< LOQ
0049_SWW_00061	Antwerpen					105	5	< LOQ
0049_SWW_00062	Zwalm					38.8	15	< LOQ
0049_SWW_00063	Poperinge	355	76.8	139	14.5		6	< LOQ
0049_SWW_00064	Mannswörth	137	21.6	43.2	8.2		< LOQ	< LOQ
0049_SWW_00065	Absdorf, uh ARA	227	231	190	8.3		< LOQ	< LOQ
0049_SWW_00066	Hainburg	59.0	33.8	44.4	8.7		< LOQ	< LOQ
0049_SWW_00067	Antiesen Antiesenhofen	46.4	6.1	4.97	0.5		< LOQ	< LOQ
0049_SWW_00068	Jochenstein	68.3	26.0	29.1	7.1		< LOQ	< LOQ
0049_SWW_00069	Krems Ansfelden	67.7	41.6	54	6.7	16.2	< LOQ	< LOQ
0049_SWW_00070	Autobahnbrücke Spielfeld						< LOQ	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00071	Lauterach	301	64.5	110	8.2		< LOQ	< LOQ
0049_SWW_00072	Jochenstein	9.45	21.0	26.3	7.2		< LOQ	< LOQ
0049_SWW_00073	Bischofsheim	522	231	321	111		5	< LOQ
0049_SWW_00074	Mannheim/Neckar	604	310	358	160		6	< LOQ
0049_SWW_00075	Kleve-Bimmen						< LOQ	< LOQ
0049_SWW_00076	Leverkusen-Rheindorf						< LOQ	< LOQ
0049_SWW_00077	Goch	872	508	877.0	136		23	< LOQ
0049_SWW_00078	Vreden	436	325	419.0	137		5	< LOQ
0049_SWW_00079	Schmilka, rechts		0.09	< LOQ	< LOQ		< LOQ	< LOQ
0049_SWW_00080	Koblenz						< LOQ	< LOQ
0049_SWW_00081	Herbrum	397	193	335	80.1		< LOQ	< LOQ
0049_SWW_00082	Seemannshöft	290	187	159	40.8		< LOQ	< LOQ
0049_SWW_00083	Hohenwutzen	480	152	165	26.7		< LOQ	< LOQ
0049_SWW_00084	Lübeck-Moisling	331	170	299	60.6		< LOQ	< LOQ
0049_SWW_00085	Anklam	63.2	83.0	138	3.8		< LOQ	< LOQ
0049_SWW_00086	Bremen	352	198	305	64.6		< LOQ	< LOQ
0049_SWW_00087	Friedrichstadt	48.2	30.4	48.7	12.0		< LOQ	< LOQ
0049_SWW_00088	Groß Rosenburg	744	419	533	76.2		< LOQ	< LOQ
0049_SWW_00089	101A station	15.9	5.9	14.8	3.2		< LOQ	< LOQ
0049_SWW_00090	Daugava	4.04	0.8	4.03	0.5		< LOQ	< LOQ
0049_SWW_00091	Musa	69.2	24.9	64	9.8		< LOQ	< LOQ
0049_SWW_00092	Lake Kisezers	33.5	5.6	5.34	3.3		< LOQ	< LOQ
0049_SWW_00093	Misa River	138	53.8	108	17.7		< LOQ	< LOQ
0049_SWW_00094	Lielupe River	18.8	7.5	1.9	3.0		< LOQ	< LOQ
0049_SWW_00095	P004	25.5	4.9	9.91	2.4		< LOQ	< LOQ

Location code	Sampling Station	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00096	PROMAXON						< LOQ	< LOQ
0049_SWW_00097	EVROS_UP						< LOQ	< LOQ
0049_SWW_00098	Limni Pamvotida	37.3	4.8	9.73	0.4		< LOQ	< LOQ
0049_SWW_00099	Ekvoles Loudia Aliakmona	31.6	7.3	24.4	4.6	5.26	< LOQ	< LOQ
0049_SWW_00100	S1	20.5	1.2	3.56	16.8	0.716	< LOQ	< LOQ
0049_SWW_00101	Ekvoles Spercheiou	349	11.3	331	7.2	2.02	< LOQ	< LOQ
0049_SWW_00102	Messara	< LOQ	0.2	0.761	1.1	3.8	< LOQ	< LOQ
0049_SWW_00103	Narva	7.45	2.4	5.43	0.3		13	< LOQ
0049_SWW_00104	Kavastu	52.1	19.4	25.3	3.1		9	< LOQ
0049_SWW_00105	Purtse	43.3	1.5	3.05	2.8	1.85	< LOQ	< LOQ
0049_SWW_00106	Oreküla HP	10.3	9.5	10.3	4.2	1.83	< LOQ	< LOQ
0049_SWW_00107	Vääna	17.7	5.5	3.61	4.5	1.79	< LOQ	< LOQ
0049_SWW_00108	Red Burn Bridge	12.6	27.1	15	< LOQ		< LOQ	< LOQ
0049_SWW_00109	Slane Br	110	27.1	22.2	< LOQ		< LOQ	< LOQ
0049_SWW_00110	Lucan Br	199	30.8	36.6	< LOQ		< LOQ	< LOQ
0049_SWW_00111	Graiguenamanagh Br	109	30.2	24.7	< LOQ		< LOQ	< LOQ
0049_SWW_00112	Leemount Br	42.1	2.0	4.59	< LOQ		< LOQ	< LOQ
0049_SWW_00113	Ford 2 km u/s Gweestion River	43.4	30.3	18.4	< LOQ		< LOQ	< LOQ
0049_SWW_00114	Br. at Killaloe	47.7	3.0	6.66	0.3		< LOQ	< LOQ
0049_SWW_00115	River Lagan	768	108	65.7	4.1		< LOQ	< LOQ
0049_SWW_00116	River Quoile	331	44.0	71	0.4		< LOQ	< LOQ
0049_SWW_00117	River Clyde at tidal weir	897	56.6	101	1.6			
0049_SWW_00118	River North Esk	66.3	23.8	14	< LOQ		< LOQ	< LOQ
0049_SWW_00119	River Almond	1420	105	115	8.5		< LOQ	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00120	River Ugie	308	25.9	18.7	< LOQ		< LOQ	< LOQ
0049_SWW_00121	River Dee	282	23.3	59.9	1.8		< LOQ	< LOQ
0049_SWW_00122	River Usk	149	9.6	30.8	0.5		< LOQ	< LOQ
0049_SWW_00123	River Humber	611	58.4	126	6.9		< LOQ	< LOQ
0049_SWW_00124	Mersey Estuary	531	19.3	23.2	< LOQ		< LOQ	< LOQ
0049_SWW_00125	Thames	456	118	166	30.9		7	< LOQ
0049_SWW_00126	River Ouse	340	11.9	9.1	0.7		< LOQ	< LOQ
0049_SWW_00127	River Wensum	468	71.5	125	5.8		< LOQ	< LOQ
0049_SWW_00128	River Tame	2879	650	260	25.8		< LOQ	< LOQ
0049_SWW_00129	Hampshire Avon	619	26.0	63.9	3.1		< LOQ	< LOQ
0049_SWW_00130	Cicarlau RO24300	247	168	436	48.0	11.8	< LOQ	< LOQ
0049_SWW_00131	Cheresig RO33400	150	82.9	181	57.0	0.971	< LOQ	< LOQ
0049_SWW_00132	Ungheni RO40900	110	218	441	71.0	< LOQ	< LOQ	< LOQ
0049_SWW_00133	Otelec locality RO50400	203	156	285	53.8	1.85	< LOQ	< LOQ
0049_SWW_00134	Bazias RO14011	63.5	46.0	76.1	17.8	94.3	< LOQ	< LOQ
0049_SWW_00135	Islaz RO87600	117	9.1	21	7.2		< LOQ	< LOQ
0049_SWW_00136	Clatesti RO107600	768	295	460	173		120	81
0049_SWW_00137	downstream Tandareni RO114220	135	34.8	163	7.8		< LOQ	< LOQ
0049_SWW_00138	Vranceni RO12500	29.6	63.6	86.4	24.9		< LOQ	< LOQ
0049_SWW_00139	Oroftiana RO130100	35.4	32.5	47	11.6		< LOQ	< LOQ
0049_SWW_00140	Reni RO14390	74.1	29.8	38.5	12.2		< LOQ	< LOQ
0049_SWW_00141	Rijn/Bovenrijn (Bijilands Kanaal) LOBPTN	411	158	233	60.8	2.88	< LOQ	< LOQ
0049_SWW_00142	Maas IJSDPTN	605	79.7	120	22.9	3.26	< LOQ	< LOQ
0049_SWW_00143	Nieuwe Waterweg MAASSS	200	105	161	48.3	< LOQ	< LOQ	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00144	Ijsselmeer VROUWDZ	178	77.6	155	27.5	6.69	< LOQ	< LOQ
0049_SWW_00145	Noordwijk NOORDWK	25.3	11.7	17.2	6.0	< LOQ	< LOQ	< LOQ
0049_SWW_00146	Penide Areias de Vilar	112	48.4	69.8	11.5		7	< LOQ
0049_SWW_00147	Barca d'Alva	103	26.4	47.6	2.2		< LOQ	< LOQ
0049_SWW_00148	Alb. Crestuma	142	28.4	54.7	8.9		< LOQ	< LOQ
0049_SWW_00149	Ponte Formoselha	119	86.9	245	30.8		< LOQ	< LOQ
0049_SWW_00150	Perais	411	45.2	124	13.5		< LOQ	< LOQ
0049_SWW_00151	Valada_Tejo	255	21.4	92.1	13.3		< LOQ	< LOQ
0049_SWW_00152	Alb. Roxo	37.0	39.5	33.9	< LOQ		< LOQ	< LOQ
0049_SWW_00153	Monte da Vinha	155	24.2	178	8.6		< LOQ	< LOQ
0049_SWW_00154	Vastuupuomi	11.1	26.1	19.2	< LOQ		< LOQ	< LOQ
0049_SWW_00155	Huruksela	10.1	4.5	16.4	0.6		< LOQ	< LOQ
0049_SWW_00156	Kalkkistenkoski	5.53	1.4	14.4	0.9	< LOQ	< LOQ	< LOQ
0049_SWW_00157	Porvoonjoki	318	185	621	18.4	1.54	< LOQ	< LOQ
0049_SWW_00158	Vantaa	170	75.1	325	6.0		< LOQ	< LOQ
0049_SWW_00159	Aura 54 ohikulku	44.9	39.9	41.8	< LOQ		< LOQ	< LOQ
0049_SWW_00160	Nokiankoski 8200 ala	24.6	7.3	31.6	1.3	< LOQ	< LOQ	< LOQ
0049_SWW_00161	Kojo 35 Pori-Tre	27.6	31.8	35.7	< LOQ		< LOQ	< LOQ
0049_SWW_00162	Oulujoki	6.22	21.9	13.1	< LOQ		< LOQ	< LOQ
0049_SWW_00163	ISOHAARA	< LOQ	0.8	3.8	1.9	< LOQ	< LOQ	< LOQ
0049_SWW_00164	KUKKOLA	< LOQ	0.4	0.9	1.8	45.5	< LOQ	< LOQ
0049_SWW_00165	Ouche à Crimolois	418	189	346.7	104	6.06	< LOQ	< LOQ
0049_SWW_00166	Reyssouze à Viriat	1037	432	597	113	2.8	< LOQ	< LOQ
0049_SWW_00167	Ardières à Saint Jean d'Ardières	80.2	88.3	145	96.3	7.36	< LOQ	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00168	Azergues à Lucenay	287	159	274	49.4	8.49	< LOQ	< LOQ
0049_SWW_00169	Guiers à Saint Genix sur Guiers	43.1	22.5	38.8	7.8	2.65	< LOQ	< LOQ
0049_SWW_00170	L'Yser à Bambecque (CHANGE)	907	224	413	81.1		8	< LOQ
0049_SWW_00171	Les Évoissons à Bergicourt (CHANGE)	577	296	378	69.2		10	< LOQ
0049_SWW_00172	Umbria Tiber						< LOQ	< LOQ
0049_SWW_00173	Toscana Arno 1	564	221	624	66.0		< LOQ	< LOQ
0049_SWW_00174	Toscana Arno 2	n.a.	162.0	372	34.3		5	< LOQ
0049_SWW_00175	Emilia Po Ferrara	89.4	29.2	48.1	10.2	104	< LOQ	< LOQ
0049_SWW_00176	Emilia Reno Ravenna 1	327	145	473	121	46.1	5	< LOQ
0049_SWW_00177	Emilia Reno Ravenna 2	403	85.0	356	19.6	0.784	< LOQ	< LOQ
0049_SWW_00178	Bolzano Adige					< LOQ	< LOQ	< LOQ
0049_SWW_00179	Lombardia Lambro	484	150.0	299	62.7	9.66	10	< LOQ
0049_SWW_00180	Veneto Adige	92.2	18.8	28.9	10.6	1.59	< LOQ	< LOQ
0049_SWW_00181	Piemonte Tanaro	29.5	7.0	13	3.2	9.27	< LOQ	< LOQ
0049_SWW_00182	Piemonte Po	59.9	16.7	32.9	8.0	< LOQ	< LOQ	< LOQ
0049_SWW_00183	IT18Amato3	< LOQ	0.4	0.6	6.8	4.58	< LOQ	< LOQ
0049_SWW_00184	IT18RC39	< LOQ	0.7	0.494	159	< LOQ	< LOQ	< LOQ
0049_SWW_00185	Stockholm Centralbron	68.6	15.4	47.2	1.9		< LOQ	< LOQ
0049_SWW_00186	Åsbro	43.4	29.6	52.7	4.8		< LOQ	< LOQ
0049_SWW_00187	Alelyckan	< LOQ	4.5	12	2.8		< LOQ	< LOQ
0049_SWW_00188	Norrköping	39.6	12.3	30.7	1.2		< LOQ	< LOQ
0049_SWW_00189	Älvkarleby	< LOQ	< LOQ	9.29	0.9		< LOQ	< LOQ
0049_SWW_00190	Emsfors	24.9	20.8	46	1.7		< LOQ	< LOQ

Location code	Sampling Station	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00191	Fyrisån Flottsund	162	53.0	112	7.6		< LOQ	< LOQ
0049_SWW_00192	Struma	333	151	388	83.8	1.45	< LOQ	< LOQ
0049_SWW_00193	Maritsa 1	138	78.6	82.6	27.0	0.894	< LOQ	< LOQ
0049_SWW_00194	Maritsa 2	113	56.1	73.7	38.2		< LOQ	< LOQ
0049_SWW_00195	Timok	86.6	80.4	188	48.2	< LOQ	< LOQ	< LOQ
0049_SWW_00196	Iskar	1191	485	811	355	< LOQ	22	9
0049_SWW_00197	Devnenska	97.3	10.0	11.2	9.3	< LOQ	< LOQ	< LOQ
0049_SWW_00198	Burgas	491	125	691	70.7	23	< LOQ	< LOQ
0049_SWW_00199	ARH230902	118	21.4	50.5	1.8		< LOQ	< LOQ
0049_SWW_00200	Fyn6900017	63.3	13.4	36.5	2.7		< LOQ	< LOQ
0049_SWW_00201	RKB5010	188	36.5	94.3	1.9		< LOQ	< LOQ
0049_SWW_00202	RKB8290	23.8	0.7	1.59	< LOQ		< LOQ	< LOQ
0049_SWW_00203	ARH 90293						< LOQ	< LOQ
0049_SWW_00204	STO 01.15.16						< LOQ	< LOQ
0049_SWW_00205	ARH 110114	290	73.1	132	13.7	< LOQ	< LOQ	< LOQ
0049_SWW_00206	R. Guadiana-E.A. Balbuena						< LOQ	< LOQ
0049_SWW_00207	Captacion Bochanza						< LOQ	< LOQ
0049_SWW_00208	Guadiana en Azud de Benavides	92.0	23.0	172	9.6		< LOQ	< LOQ
0049_SWW_00209	E. Puente Navarro-Presa	20.2	6.7	40	0.3		< LOQ	< LOQ
0049_SWW_00210	Ebro / Tortosa	186	10.3	49.2	11.9		< LOQ	< LOQ
0049_SWW_00211	Zadorra / Vitoria - Trespuentes	732	149	1010	87.7		< LOQ	< LOQ
0049_SWW_00212	Ebro / Presa Pina	222	18.6	150	32.2		< LOQ	< LOQ
0049_SWW_00213	Arga / Ororbia	1146	222.	1600	148		7	< LOQ

Location code	**Sampling Station**	TCPP (ng/L)	Carbamazepine (ng/L)	10,11-dihydroxy-10, 11-dihydro-carbamazepine (ng/L)	Sulfamethoxazole (ng/L)	PFPrA (ng/L)	Triclosan (ng/L)	Triclocarban (ng/L)
0049_SWW_00214	Alcalà - Henares	757	68.3	627	185.0		12	< LOQ
0049_SWW_00215	E. Presa del Rey-Jarama	1691	346	2200	632.0		36	< LOQ
0049_SWW_00216	Rivas-Vaciamadrid-Manzanares	2888	4240	2320	656.0		91	< LOQ
0049_SWW_00217	Aranjuez-Jarama	1070	213	1170	212.0		11	< LOQ
0049_SWW_00218	Bargas-Guadarrama	734	231	145	182.0		9	< LOQ
0049_SWW_00219	Toledo1-Tajo	n.a.	118	596	79.3		< LOQ	< LOQ
0049_SWW_00220	Arlanzon en Villavieja	435	106	935	71.8		< LOQ	< LOQ
0049_SWW_00221	Pisuerga en Simancas	552	63.7	298	45.5		< LOQ	< LOQ
0049_SWW_00222	Duero en Zamora	273	39.1	237	19.6		< LOQ	< LOQ

10 Annex 2 – Sampling station location cards

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Morava/Devín**	*CODE*	**0049_SWW_00001**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
1.6. 2012	**River/Lake**	**11:00**	**Sampling 30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.87	**Not reported**	**18.7**	**Not reported**

Comments:

Sampling was performed using the provided bottles and a telescopic pole from the shore. Bottles were rinsed with river water. Sampling was performed by immersion of the bottles upside down to 30 cm depth below the surface and there the bottle was turned to fill with river water. Samples was transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube/ Bratislava left**	*CODE*	**0049_SWW_00002**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
11.6.2012	**River**	**11:45**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.07	**Not reported**	**15.5**	**Not reported**

Comments:

Sampling was performed using the provided bottles and a telescopic pole from the shore. Bottles were rinsed with river water. Sampling was performed by immersion of the bottles upside down to 30 cm depth below the surface and there the bottle was turned to fill with river water. Samples was transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube/ Bratislava right**	*CODE*	**0049_SWW_00003**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
11.6.2012	**River**	**10:00**	**30 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.07	**Not reported**	**14.5**	**Not reported**

Comments:

Sampling was performed using a bucket on a rope from a bridge. Bottles were rinsed with river water. Samples were transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube/ Medvedov middle**	*CODE*	**0049_SWW_00005**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
12.6.2012	**River/Lake**	**10:45**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.10	**Not reported**	**15.3**	**Not reported**

Comments:

Sampling was performed using a bucket on a rope from a bridge. Bottles were rinsed with river water. Samples were transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise
Sampling Location card

STATION IDENTIFICATION

River/Station	**Váh/Komárno**	*CODE*	**0049_SWW_00006**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **11.6.2012**	*Sample type* **River/Lake**	Sampling time **9:30**	Water Depth: **Not reported**
Water pH **8.03**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **19.7**	*Salinity* **Not reported**

Comments:

Sampling was performed using a bucket on a rope from the shore. Bottles were rinsed with river water. Samples were transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Hron/Kamenica nad Hronom**	*CODE*	**0049_SWW_00007**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **11.6.2012**	*Sample type* **River/Lake**	Sampling time **10:50**	Water Depth: **30 cm**
Water pH **8.05**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **19.9**	*Salinity* **Not reported**

Comments:

Sampling was performed using a bucket on a rope from the shore. Bottles were rinsed with river water. Samples were transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ipel/Salka**	*CODE*	**0049_SWW_00008**
City	**Bratislava**	*Geographic coordinate system*	***UTM/UPS***
Country	**SLOVAKIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
11.6.2012	**River/Lake**	**11:30**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.1	**Not reported**	**19.7**	**Not reported**

Comments:

Sampling was performed using a bucket on a rope from the shore. Bottles were rinsed with river water. Samples were transported cooled to the Water Research Institute in the provided polystyrene box with cooling elements. Until dispatch to JRC it was stored at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Alzette**	*CODE*	**0049_SWW_00009**
City	**Ettelbrück**	*Geographic coordinate system*	***UTM/UPS***
Country	**LUXEMBOURG**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **26.6.2012**	*Sample type* **River/Lake**	Sampling time **9:00**	Water Depth: **Not reported**
Water pH **8.0**	*Water Conductivity (µS/cm)* **559 @ 20 ºC**	*Water temperature (°C)* **15**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Sûre**	*CODE*	**0049_SWW_00010**
City	**Wasserbillig amont**	*Geographic coordinate system*	***UTM/UPS***
Country	**LUXEMBOURG**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **26.6.2012**	*Sample type* **River/Lake**	Sampling time **10:30**	Water Depth: **Not reported**
Water pH **7.2**	*Water Conductivity (µS/cm)* **375 @ 20 ºC**	*Water temperature (°C)* **16.7**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Chiers**	*CODE*	**0049_SWW_00011**
City	**Rodange Pont à Athus**	*Geographic coordinate system*	***UTM/UPS***
Country	**LUXEMBOURG**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **26.6.2012**	*Sample type* **River/Lake**	Sampling time **11:30**	Water Depth: **Not reported**
Water pH **7.2**	*Water Conductivity (µS/cm)* **600 @ 20 ºC**	*Water temperature (°C)* **21**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Wiltz**	*CODE*	**0049_SWW_00012**
City	**Kautenbach aval embouchure Clerf**	*Geographic coordinate system*	***UTM/UPS***
Country	**LUXEMBOURG**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
26.6.2012	**River/Lake**	**10:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**213 @ 20 °C**	**13.6**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Berounka Lahovice**	*CODE*	**0049_SWW_00013**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **25.6.2012**	*Sample type* **River/Lake**	Sampling time **12:00**	Water Depth: **Not reported**
Water pH **7.65**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **21.3**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Lužická Nisa Hrádek**	*CODE*	**0049_SWW_00014**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: **25.6.2012**	*Sample type* **River/Lake**	Sampling time **11:45**	Water Depth: **Not reported**
Water pH **7.7**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **16.9**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Morava Lanžhot**	*CODE*	**0049_SWW_00015**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
26.6.2012	**River/Lake**	**10:40**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.8	**Not reported**	**23.1**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Odra Bohumín**	*CODE*	**0049_SWW_00016**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

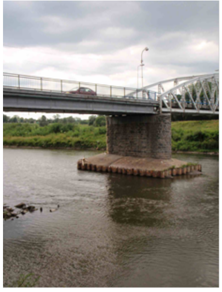
SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
26.6.2012	**River/Lake**	**14:15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.0	**Not reported**	**18.9**	**Not reported**

Comments:

None.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Vltava Zelčín**	*CODE*	**0049_SWW_00017**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date:	*Sample type*	Sampling time	Water Depth:
25.6.2012	**River/Lake**	**10:15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.45	**Not reported**	**16.1**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Labe Obříství**	*CODE*	**0049_SWW_00018**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	Sampling time	Water Depth
25.6.2012	**River/Lake**	**09:15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.80	**Not reported**	**21.3**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Labe Valy**	*CODE*	**0049_SWW_00019**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
26.6.2012	**River/Lake**	**Not reported**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.66	**Not reported**	**20.2**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Jizera Nový Vestec**	*CODE*	**0049_SWW_00020**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**River/Lake**	**8:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.75	**Not reported**	**19.0**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Orlice Nepasice**	*CODE*	**0049_SWW_00021**
City	**Hradec Králové**	*Geographic coordinate system*	***UTM/UPS***
Country	**CZECH REPUBLIC**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
26.6.2012	**River/Lake**	**12:15**	**Not reported**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.75	**Not reported**	**17.3**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kristiansand**	*CODE*	**0049_SWW_00022**
City	**Oslo**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.6.2012	**Sea**	**8:50 CET (6:50 UTC)**	**75 cm to 125 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

The water samples were taken with a 5 L Niskin water sampler bottle, with the center of the bottle at 1 m depth. The samples were then drained through the sampler drainplug into the bottle. The sample bottles were NOT conditioned with the sample water. The Niskin bottle does not contain Teflon.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Bømlo**	*CODE*	**0049_SWW_00023**
City	**Oslo**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
12.6.2012	**Sea**	**10:00-10:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

The bottles were opened above water and quickly pushed down to 20 cm twice. The first time to condition the bottle the second time to fill the bottle with sample. Unfortunately the blank was also filled.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Trondheimsfjorden**	*CODE*	**0049_SWW_00024**
City	**Trondheim**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.6.2012	**Sea**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**13**	**Not reported**

Comments:

Water collector may contain Teflon. The water samples were transferred from the water sampler to the bottles using a silicone tube attached to the water sampler. The water sampler is normally used for sea water sampling. The sampler was not pre cleaned. The cap was put upside down to avoid contamination. The bottles were not conditioned with the sample matrix. Gloves were not used. The samples were collected onboard a boat.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Oslofjorden**	*CODE*	**0049_SWW_00025**
City	**Oslo**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
21.5.2012	**Sea**	**11:00**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

The water samples were taken with a 5L Niskin water sampler. The sample was taken at 25-75 cm depth (average 0.5 m).The water was drained through the sampler's plug. The bottles were conditioned twice with sample water. The bottles does not contain Teflon. There was no blank bottle provided in the shipment!!

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Skogsfjordevatnet**	*CODE*	**0049_SWW_00026**
City	**Tromsö**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **24.7.2012**	*Sample type* **River/Lake**	*Sampling time* **Not reported**	*Water Depth* **Not reported**
Water pH ***Not reported***	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Mjøsa**	*CODE*	**0049_SWW_00027**
City	**Oslo**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
18.6.2012	**River/Lake**	**12:00**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

20 cm by immersing bottles, no sampler was used.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Femunden**	*CODE*	**0049_SWW_00029**
City	**Dreusjco**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Dept*
25.6.2012	**Sea**	**10:00**	**20-30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Vansjø**	*CODE*	**0049_SWW_00030**
City	**Oslo**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORWAY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date:	*Sample type*	Sampling time	Water Depth:
18.6.2012	**River/Lake**	**14:00**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

At 20 cm by immersing bottles no sampler was used.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube Upsstream**	*CODE*	**0049_SWW_00031**
City	**Budapest**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.6.2012	**River**	**10:20**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.15	**303**	**20**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube downstream**	*CODE*	**0049_SWW_00032**
City	**Budapest**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.06.2012	**River**	**11:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.17	**302**	**20.2**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Kenyérmezei-patak downstream**	*CODE*	**0049_SWW_00033**
City	**Györ**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.6.2012	**River**	**12:30**	**14 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.67	**1097**	**18.5**	**Not reported**

Comments:

Unfortunately the water level of Kenyérmezei-patak was too low. We show it on the enclosed photos. So we didn't know sampling from suitable depth. First we opened the bottle of fieldblank. Then we conditioned the bottles shipped to us by the JRC with the sample. Next we took the samples into each bottle (10 L). The sampling method was : we immersed the stainless steel sampler upside down, and turned below the surface of the river. We filled the bottles leaving a small air headspace. We didn't use Teflon during sampling. Afterwards we took the bottles in the cooling boxes shipped to us by JRC. Then we closed the bottle of fieldblank. We transported the cooled samples in the Laboratory. We stored the samples in the dark at 4°C until dispatch. We refreeze the cooling elements for the shipping

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Mosoni-Duna at Vének downstream**	*CODE*	**0049_SWW_00034**
City	**Györ**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
26.6.2012	**River**	**13:15**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.13	**361**	**22.2**	**Not reported**

Comments:

First we opened the bottle of fieldblank. Then we conditioned the bottles shipped to us by the JRC with the sample. Next we took the samples into each bottle (10 L). The sampling method was: we immersed the stainless steel sampler upside down, and turned below the surface of the river. We filled the bottles leaving a small air headspace. We didn't use Teflon during sampling. Afterwards we took the bottles in the cooling boxes shipped to us by JRC. Then we closed the bottle of fieldblank. We transported the cooled samples in the Laboratory. We stored the samples in the dark at 4°C until dispatch. We refreeze the cooling elements for the shipping.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Bábony-patak / Sajóecseg**	*CODE*	**0049_SWW_00035**
City	**Miskolc**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.06.2012	**River/Lake**	**9:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.24	**Not reported**	**21**	**Not reported**

Comments:

Sampling procedure MSZ EN ISO 5667-1:2007, MSZ ISO 5667-6:1995

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Sajó / Sajólád**	*CODE*	**0049_SWW_00036**
City	**Miskolc**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.06.2012	**River/Lake**	**10:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.39	**Not reported**	**23.3**	**Not reported**

Comments:

Sampling procedure MSZ EN ISO 5667-1:2007, MSZ ISO 5667-6:1995

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Hortobágy-Berettyó / Mezőtúr**	*CODE*	**0049_SWW_00037**
City	**Miskolc**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.06.2012	**River/Lake**	**9:20**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**Not reported**	**23.3**	**Not reported**

Comments:

Sampling procedure MSZ EN ISO 5667-1:2007, MSZ ISO 5667-6:1995

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Zagyva / Újszász**	*CODE*	**0049_SWW_00038**
City	**Miskolc**	*Geographic coordinate system*	***UTM/UPS***
Country	**HUNGARY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.6.2012	**River/Lake**	**10:45**	**Not reported**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.0	**Not reported**	**21.5**	**Not reported**

Comments:

Sampling procedure MSZ EN ISO 5667-1:2007, MSZ ISO 5667-6:1995

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Nemunas žemiau Kauno ties Kulautuva**	*CODE*	**0049_SWW_00039**
City	**Kaunas**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.5.2012	**River/Lake**	**09.30**	**35 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.28	**505**	**17.8**	**Not reported**

Comments:

6 plastic bottles 1 L filled with water, 4 aluminium 1L bottles filled with water, and 1 plastic 1L bottle empty (blank). Sampling spot is aprx. 20 km from Kaunas city centre. Sampling procedure: ISO 5667-6:2005 Water quality. Sampling - Part 6: Guidance on sampling of rivers and streams.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Nemunas zemiau Rusnes, zemiau Leites**	*CODE*	**0049_SWW_00040**
City	**Klaipeda**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.5.2012	**River/Lake**	**11.35**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.4	**439**	**18**	**Not reported**

Comments:

Sampling protocol: ISO 5667-6:2005. Water quality-Sampling- Part 6: Guidance on sampling of rivers and streams

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Akmena – Dane ziotyse**	*CODE*	**0049_SWW_00041**
City	**Klaipeda**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

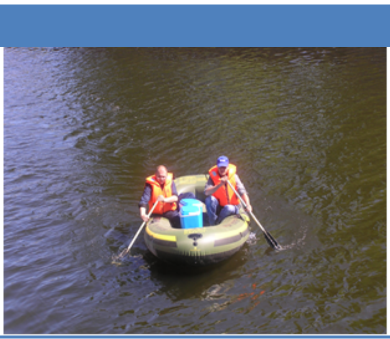
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.5.2012	**River/Lake**	**13.50**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.7	**942**	**19**	**Not reported**

Comments:

Sampling protocol: ISO 5667-6:2005. Water quality-Sampling- Part 6: Guidance on sampling of rivers and streams

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Neris aukščiau Paneriu žemiau Grigiškiu**	*CODE*	**0049_SWW_00042**
City	**Vilnius**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **28.5.2012**	*Sample type* **River/Lake**	Sampling time **12.30**	Water Depth: **20 cm**
Water pH **7.82**	*Water Conductivity (μS/cm)* **419**	*Water temperature (°C)* **17.5**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Venta zemiau Mazeikiu**	*CODE*	**0049_SWW_00043**
City	**Siauliai**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.5.2012	**River**	**8.15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.15	**524**	**16.9**	**Not reported**

Comments:

ISO 5667-6:2005

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kulpe ties Kryziu kalnu**	*CODE*	**0049_SWW_00044**
City	**Siauliai**	*Geographic coordinate system*	***UTM/UPS***
Country	**LITHUANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.5.2012	**River/Lake**	**13.35**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.15	**1069**	**15.3**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Meuse**	*CODE*	**0049_SWW_00045**
City	**Liege**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Wallonie)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
26.6.2012	**River/Lake**	**8:45**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.78	**346**	**17.2**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Meuse**	*CODE*	**0049_SWW_00046**
City	**Liege**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Wallonie)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.6.2012	**River/Lake**	**9:50**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.89	**396**	**19.4**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Escaut**	*CODE*	**0049_SWW_00047**
City	**Liege**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Wallonie)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **19.6.2012**	*Sample type* **River/Lake**	*Sampling time* **11:30**	*Water Depth* **20 cm**
Water pH **7.5**	*Water Conductivity (μS/cm)* **661**	*Water temperature (°C)* **17.7**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Amblève**	*CODE*	**0049_SWW_00048**
City	**Liege**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Wallonie)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
12.6.2012	**River/Lake**	**11:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.88	**151**	**15.7**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Garyllis R**	*CODE*	**0049_SWW_00049**
City	**Limassol**	*Geographic coordinate system*	***UTM/UPS***
Country	**CYPRUS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date: ***Not reported***	*Sample type* **River/Lake**	Sampling time **Not reported**	Water Depth: **Not reported**
Water pH **8.234**	*Water Conductivity (µS/cm)* **233**	*Water temperature (°C)* **21.1**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kouris R**	*CODE*	**0049_SWW_00050**
City	**Limassol**	*Geographic coordinate system*	***UTM/UPS***
Country	**CYPRUS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
Not reported	**River/Lake**	**Not reported**	**Not reported**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.957	**1144**	**19.3**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kargotis/Evrychou**	*CODE*	**0049_SWW_00051**
City	**Nicosia**	*Geographic coordinate system*	***UTM/UPS***
Country	**CYPRUS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.6.2012	**River/Lake**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.6	**710**	**17.1**	**Not reported**

Comments:

Sampling procedure as required in the watch list pilot exercise instructions was followed.

-clothing of sampling personnel was according to point 4d of instructions

-bottles were conditioned with the sample (rinsed)

-bottles were immersed upside down, and turned below the surface

-samples were stored in the dark and @ 4 C until the courier pick up.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Hliðardalsá**	*CODE*	**0049_SWW_00052**
City	**Bolungarvik**	*Geographic coordinate system*	***UTM/UPS***
Country	**ICELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
18.6.2012	**River/Lake**	**Not reported**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.61	**78.3**	**4.9**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Eyjafjörður fjord**	*CODE*	**0049_SWW_00053**
City	**Akulreyri**	*Geographic coordinate system*	***UTM/UPS***
Country	**ICELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**Sea**	**11:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.2	**31.9 mS/cm**	**8.5**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ölfusá/ Ölfusárós**	*CODE*	**0049_SWW_00054**
City	**Reykjavik**	*Geographic coordinate system*	***UTM/UPS***
Country	**ICELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**River/Lake**	**8:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Sampling bottle mounted at a Nasco sampling pole. The sampling pole is about 2 m and extendable. Bottles immersed upside down from the shore and turned below the surface.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Lake Þingvallavatn**	*CODE*	**0049_SWW_00055**
City	**Reykjavik**	*Geographic coordinate system*	***UTM/UPS***
Country	**ICELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**Lake**	**9:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.5-8.0	**76**	**9.5**	**Not reported**

Comments:

The sampling station is at the lake outlet. Sampling bottle mounted at a Nasco sampling pole. The sampling pole is about 2 m and extendable. Bottles immersed upside down from the shore and turned below the surface.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kollafiörður**	*CODE*	**0049_SWW_00056**
City	**Reykjavik**	*Geographic coordinate system*	***UTM/UPS***
Country	**ICELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**Sea**	**11:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

The sampling station is within the Reykjavik metropolitan area. Sampling bottle mounted at a Nasco sampling pole. The sampling pole is about 2 m and extendable. Bottles immersed upside down from the shore and turned below the surface.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Il-Port il-Kbir**	*CODE*	**0049_SWW_00057**
City	**Il-Port il-Kbir**	*Geographic coordinate system*	***UTM/UPS***
Country	**MALTA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.6.2012	**Sea**	**9:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.16	**53.62**	**21.43**	**38.43**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ix-Xghajra**	*CODE*	**0049_SWW_00058**
City	**Ix-Xghajra**	*Geographic coordinate system*	***UTM/UPS***
Country	**MALTA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.6.2012	**Sea**	**11:10**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.11	**53.87**	**21.51**	**38.54**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Il-Port ta' Marsaxlokk**	*CODE*	**0049_SWW_00059**
City	**Il-Port ta' Marsaxlokk**	*Geographic coordinate system*	***UTM/UPS***
Country	**MALTA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.6.2012	**Sea**	**11:35**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.15	**53.64**	**21.32**	**38.51**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Maas, Kinrooi – Ophoven, T&T-meetpunt Maas**	*CODE*	**0049_SWW_00060**
City	**Ghent**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Flemish Region)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
2.7.2012	**River/Lake**	**10:25**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.95	**444**	**20.4**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Beneden Zeeschelde, Antwerpen, eindpunt Schelde**	*CODE*	**0049_SWW_00061**
City	**Ghent**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Flemish Region)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
2.7.2012	**River/Lake**	**9:35**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.88	**11910**	**19.4**	**7.63**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Bovenschelde, Zwalm, T&T-meetpunt op de Schelde**	*CODE*	**0049_SWW_00062**
City	**Ghent**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Flemish Region)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.7.2012	**River/Lake**	**8:40**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.69	**Not reported**	**21.3**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**IJzer, Poperinge, Roesbrugge, Bergenstraat**	*CODE*	**0049_SWW_00063**
City	**Ghent**	*Geographic coordinate system*	***UTM/UPS***
Country	**BELGIUM (Flemish Region)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
2.7.2012	**River/Lake**	**9:40**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.33	**1004**	**17.9**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Mannswörth**	*CODE*	**0049_SWW_00064**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.6.2012	**River/Lake**	**6:05**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.4	**662**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Schmida/Absdorf**	*CODE*	**0049_SWW_00065**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
5.6.2012	**River/Lake**	**6:40**	**15 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.4	**753**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Hainburg/Donau**	*CODE*	**0049_SWW_00066**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.6.2012	**River**	**8:35**	**15 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.5	**310**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Antiesen Antiesenhofen**	*CODE*	**0049_SWW_00067**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
14.6.2012	**River/Lake**	**7:55**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Jochenstein**	*CODE*	**0049_SWW_00068**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
14.6.2012	**River/Lake**	**11:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Krems Ansfelden**	*CODE*	**0049_SWW_00069**
City	**Vienna**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.6.2012	**River/Lake**	**12:20**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Mur – Straßenbrücke Spielfeld**	*CODE*	**0049_SWW_00070**
City	**Graz**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
20.06.2012	**River/Lake**	**12:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.0	**255**	**21**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Dornbirner Ach; Lauterach**	*CODE*	**0049_SWW_00071**
City	**Feldkirch**	*Geographic coordinate system*	***UTM/UPS***
Country	**AUSTRIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
21.6.2012	**River/Lake**	**8:45**	**15 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.80	**567**	**17.3**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Danube/jochenstein**	*CODE*	**0049_SWW_00072**
City	**Deggendorf**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **13.06.2012**	*Sample type* **River**	*Sampling time* **9:30**	*Water Depth* **Not reported**
Water pH **8.2**	*Water Conductivity (µS/cm)* **260**	*Water temperature (°C)* **13.7**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Main , Km 4**	*CODE*	**0049_SWW_00073**
City	**Hessen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**River**	**7.10-7.26**	**150 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.5	**631**	**20.9**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Neckar/Mannheim**	*CODE*	**0049_SWW_00074**
City	**Karlsruhe**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.06.2012	**River**	**12:50**	**30-40 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.6	**865**	**20.9**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Rhinel/Kleve-Bimmen**	*CODE*	**0049_SWW_00075**
City	**Recklinghausen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
13.6.2012	**River/Lake**	**12:45-12:55**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.95	**535**	**8.6**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Wupper /Opladen**	*CODE*	**0049_SWW_00076**
City	**Recklinghausen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
14.6.2012	**River/Lake**	**8:40**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.72	**449**	**14.8**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Niers**	*CODE*	**0049_SWW_00077**
City	**Recklinghausen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
14.6.2012	**River/Lake**	**10:24**	**100 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.6	**691**	**15.5**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Berkel/BS 26, Landesgrenze**	*CODE*	**0049_SWW_00078**
City	**Recklinghausen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
19.6.2012	**River/Lake**	**8:25**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.92	**60 ms/m**	**15.9**	**Not reported**

Comments:

Entnahme von Brücke mit Eimer.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Elbe/ Schmilka**	*CODE*	**0049_SWW_00079**
City	**Nossen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
20.06.2012	**River**	**15:45**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**421**	**20**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Moselle at Koblenz**	*CODE*	**0049_SWW_00080**
City	**Koblenz**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
13.06.2012	**River/Lake**	**10:30**	**100 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.7	**962 (at 25°C)**	**19**	**Not reported**

Comments:

Only 3 aluminium bottles had been available. We filled our own additional aluminium bottle and gave it direct to our BfG-laboratory, which is involved in the watch list analysis programme with the two organic pollutants Triclosan and Bisphenol A. The code number is taken from the 7. (surplus) plastic bottle: 0049_SWW_00080_10_00 Koblenz, with barcode Nr. AA21295.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ems / Herbrum**	*CODE*	**0049_SWW_00081**
City	**Meppen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
21.06.2012	**River**	**12:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.6	**1075**	**18.4**	**Not reported**

Comments:

Die Blank-Flasche wurde in die Ems geweht und kann daher nicht geliefert werden

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Elbe Seemannshöft**	*CODE*	**0049_SWW_00082**
City	**Hamburg**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

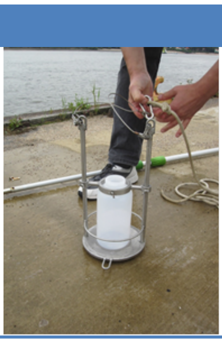
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.7.2012	**River/Lake**	**10:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.8	**945**	**19.7**	**Not reported**

Comments:

None.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Oder/ Hohenwutzen**	*CODE*	**0049_SWW_00083**
City	**Frankfurt (Oder)**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.08.2012	**River**	**12:25**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.72	**985**	**20.7**	**Not reported**

Comments:

We took the water samples corresponding to your instruction.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Trave / Lübeck - Moisling**	*CODE*	**0049_SWW_00084**
City	**Flintbek**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
18.06.2012	**River**	**12:50**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.08	**955**	**18.1**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Peene/Anklam**	*CODE*	**0049_SWW_00085**
City	**Güstrow**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
19.06.2012	**River**	**9:54**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.78	**738**	**20.1**	**0.3**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Weser, Bremen Hemelingen**	*CODE*	**0049_SWW_00086**
City	**Bremen**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
11.06.2012	**River/Lake**	**9:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.8	**1325**	**17.7**	**Not reported**

Comments:

Sampling procedure: I throw a 15 l stainless steel bucket with a rope approximately 5 meters over the water. The bucket immerse 1 m under the water and I haul in the bucket. I wash the bottle once and then I dive the bottle under the water (20 cm) and fill it. I use one bucket filling for two bottles, so throw the bucket 5 times over the water. The bottles stood over night in the refrigerator.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Treene / Friedrichstadt**	*CODE*	**0049_SWW_00087**
City	**Flintbek**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
18.06.2012	**River**	**9:40**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.51	**523**	**17.3**	**Not reported**

Comments:

Each sample bottle was conditioned with the sample. The bottles were filled leaving a small air headspace. The bottles were immersed upside down and turned below the surface.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Saale, Groß Rosenburg**	*CODE*	**0049_SWW_00088**
City	**Halle**	*Geographic coordinate system*	***UTM/UPS***
Country	**GERMANY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
20.06.2012	**River**	**09:38 – 09:55**	**20 – 50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.0	**1880**	**20.3**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Station 101A. Transitional waters in the Gulf of Riga**	*CODE*	**0049_SWW_00089**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
19.5.2012	**Sea**	**11:30**	**10 m**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.8 (at 6.0 °C)	**8300**	**6.0**	**4.5 PSU**

Comments:

Air temperature 18.0 °C. Thermocline water level.
!!! Seems like that oily products cover insertion of the aluminium bottles.
Sampling was done with "Niskin" type PVC bathometer (KC Denmark) from the vessel.
Before dispatch the samples were stored in the dark at 4°C

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Daugava River on border of Belarus**	*CODE*	**0049_SWW_00090**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
07.5.2012	**River**	**14:00**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.58	**168.8**	**14.3**	**Not reported**

Comments:

Measurement of water depth is not possible due to strong currents 0.9 m/s. Foam on the water surface was observed; the origin or source was unknown. Air temperature 10.1 °C.!!! We discover that one insertion of the aluminium bottle was contaminated at receiving moment. Seems like oily product. Sampling was done with telescopic rod equipped with sampling bottle holder (contains plastic) from the riverside. Bottles were immersed with upside down and turned under water. Before dispatch the samples were stored in the dark at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Musa River on border with Lithuania**	*CODE*	**0049_SWW_00091**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.5.2012	**River**	**12.20**	**30 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.03	**840**	**18.4**	**Not reported**

Comments:

Air temperature 14.3 °C. Slow water current. Sampling was done from inflatable boat without engine. Bottles were immersed with upside down and turned under water by hands. Glows were used. Before dispatch the samples were stored in the dark at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kisezers Lake**	*CODE*	**0049_SWW_00092**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
08.5.2012	**Lake**	**11.00**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.16	**420**	**14.3**	**Not reported**

Comments:

Lake can be affected by brackish water.
Air temperature 16.7 °C

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Misa River downward to Olaine town**	*CODE*	**0049_SWW_00093**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
19.5.2012	**River**	**11.40**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.43	**579**	**13.5**	**Not reported**

Comments:

River width at sampling site 7 m. Currents 0.5 m/s.
Air temperature 23.0°C.
!!! Seems like that oily products cover insertion of the aluminium bottles.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Lielupe River above Jelgava town**	*CODE*	**0049_SWW_00094**
City	**Riga**	*Geographic coordinate system*	***UTM/UPS***
Country	**LATVIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.5.2012	**River**	**14.30**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.93	**546**	**7.93**	**Not reported**

Comments:

Air temperature 13.8°C. Water current 0.3 m/s.Sampling was done from inflatable boat without engine. Bottles were immersed with upside down and turned under water by hands. Glows were used. Before dispatch the samples were stored in the dark at 4°C.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Pinios River**	*CODE*	**0049_SWW_00095**
City	**Larissa**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.06.2012	**River**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

The samples have been collected with the shipped bottles. The bottles have been immersed in the water below the surface, around 20 cm, and turned upside down. Then, they have been opened, water sample has been collected and they have been finally closed beneath the water surface. The bottles were not conditioned.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Strymonas/Promaxon**	*CODE*	**0049_SWW_00096**
City	**Sindon Thessaloniki**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.7.2012	**River**	**11:00**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Sampling took place without problem, approx. 300m downstream the default point. Shifting the actual sampling point was imperative to achieve appropriate access to the river and safe conditions for the field team. No confluence or potential pollutant discharge occurs between the default and the shifted sampling point. The actual coordinates of the shifted point are: Latitude: 41.2227767 Longitude: 23.716568. Air temperature during transportation varied from 25-35 °C, (approx. 32°C during sampling), whilst average temperature in the transportation vehicle was in the range of 22-24 °C. All procedures and sampling instructions provided by the JRC in the framework of the Watch List exercise were followed. The person conducting sampling woe single use latex gloves and a watertight uniform made of PVC. Sampling was initiated opening the blank sample bottle, which was tapped after the sampling procedure was terminated. During the sampling procedure the blank bottle and its lid were kept by one of the field team members to avoid accidental cross contamination. The field operator conducted the sampling from within the river, immersed the bottles upside down and then turned the bottle upside, below the surface at 20 cm depth. No contact of the sampling bottles to the watertight uniform occurred at any time. The same procedure was followed for 10 bottles, which were stored temporarily in the cooling boxes which contained freshly cooled cooling elements. Sampling bottles were kept in the cooling boxes containing cooling elements throughout the entire field operation and until samples were transported to the institute's headquarters (maximum transportation time under the defined conditions 12 hours). Collected samples were stored overnight at 4°C. Before shipment to the JRC all samples were placed again in the cooling boxes with new cooling elements, which were then placed in the carton boxes for shipment.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Evros**	*CODE*	**0049_SWW_00097**
City	**Sindos-Thessaloniki**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.7.2012	**River/Lake**	**11:30**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Sampling took place without problem, approx. 100m downstream the default point. Shifting the actual sampling point was imperative to achieve appropriate access to the river and safe conditions for the field team. No confluence or potential pollutant discharge occurs between the default and the shifted sampling point. The actual coordinates of the shifted point are: Latitude: 41.7087634 Longitude: 26.3044162. Air temperature during transportation varied from 25-35 °C, (approx. 32°C during sampling), whilst average temperature in the transportation vehicle was in the range of 22-24 °C. All procedures and sampling instructions provided by the JRC in the framework of the Watch List exercise were followed. The person conducting sampling woe single use latex gloves and a watertight uniform made of PVC. Sampling was initiated opening the blank sample bottle, which was tapped after the sampling procedure was terminated. During the sampling procedure the blank bottle and its lid were kept by one of the field team members to avoid accidental cross contamination. The field operator conducted the sampling from within the river, immersed the bottles upside down and then turned the bottle upside, below the surface at 20 cm depth. No contact of the sampling bottles to the watertight uniform occurred at any time. The same procedure was followed for 10 bottles, which were stored temporarily in the cooling boxes which contained freshly cooled cooling elements. Sampling bottles were kept in the cooling boxes containing cooling elements throughout the entire field operation and until samples were transported to the institute's headquarters (maximum transportation time under the defined conditions 12 hours). Collected samples were stored overnight at 4°C. Before shipment to the JRC all samples were placed again in the cooling boxes with new cooling elements, which were then placed in the carton boxes for shipment.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Limni Pamvotida**	*CODE*	**0049_SWW_00098**
City	**Thermi, Thessaloniki**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
19.06.2012	**Lake**	**11:40**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Due to the bad weather conditions (wind), it was not possible to receive the samples from the predetermined sampling point (center of the lake).

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ekvoles Loudia Aliakmona**	*CODE*	**0049_SWW_00099**
City	**Athens**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

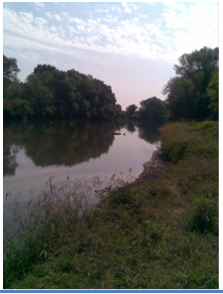
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
9.7.2012	**River**	**12:00**	**Not reported**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**52.5**	**20**	**38.5**

Comments:

Sampling with Niskin bottles with Teflon tap. After sampling the samples were kept in a cold room with 4^0C temperature.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Saronicus Gulf**	*CODE*	**0049_SWW_00100**
City	**Athens**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.7.2012	**Sea**	**12:00**	**60 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**52.5**	**20**	**38.5**

Comments:

Sampling with R/V AEGEO (HCMR ownership) with NISKIN bottle with Teflon tap. After sampling the samples were kept in a cold room with 4^{0}C temperature.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ekvoles Spercheiou**	*CODE*	**0049_SWW_00101**
City	**Athens**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**River**	**12:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**52.5**	**20**	**38.5**

Comments:

Sampling with Niskin bottles with Teflon tap. After sampling the samples were kept in a cold room with 4^0C temperature.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Messara -Crete**	*CODE*	**0049_SWW_00102**
City	**Athens**	*Geographic coordinate system*	***UTM/UPS***
Country	**GREECE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
12.7.2012	**Sea**	**13:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**58.8 (mS/cm)**	**24.65**	**39.61**

Comments:

Water samples were collected using the Niskin 5 liter water sampler at a depth of 50 cm. Subsamples were drawn and immediately preserved in an ice box. Samples were transferred to the HCMR laboratory refrigerator (4°C) until the date shipped to Ispra.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Narva station N32**	*CODE*	**0049_SWW_00103**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**ESTONIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River/Lake**	**13:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.3	**281**	**19.3**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kavatsu Station n. 13**	*CODE*	**0049_SWW_00104**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**ESTONIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.8.2012	**River/Lake**	**14:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**393**	**17.9**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Purtse river**	*CODE*	**0049_SWW_00105**
City	**Tallinn**	*Geographic coordinate system*	***UTM/UPS***
Country	**ESTONIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River**	**15:12**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.5	**824**	**16.6**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Pärnu, Oore**	*CODE*	**0049_SWW_00106**
City	**Tallinn**	*Geographic coordinate system*	***UTM/UPS***
Country	**ESTONIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
22.8.2012	**River**	**11:50**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.87	**379**	**15.7**	**Not reported**

Comments:

Weather + 16 °C, cloudy without rain.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Väänа, lower reach**	*CODE*	**0049_SWW_00107**
City	**Tallinn**	*Geographic coordinate system*	***UTM/UPS***
Country	**ESTONIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
22.8.2012	**River/Lake**	**15:30**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.98	**499**	**14.5**	**Not reported**

Comments:

Weather + 16 °C, cloudy without rain.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Red Burn Bridge/ Mourne Beg**	*CODE*	**0049_SWW_00108**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River**	**13:45**	**Not reported**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**15.7**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Slane Bridge/ Boyne**	*CODE*	**0049_SWW_00109**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.8.2012	**River**	**12:15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Lucan Bridge/ River Liffey**	*CODE*	**0049_SWW_00110**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**8:50**	**22 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Clear sample. River shallow for time of year. Few suspended solids.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Graiguenamanagh Bridge/ River Barrow**	*CODE*	**0049_SWW_00111**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**10:45**	**85 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Yellow/brown tint. Some suspended solids. A lot of boat activity in area.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Leemount Bridge/ River Lee**	*CODE*	**0049_SWW_00112**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**13:05**	**120 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Slight yellow tint. No odour. Few suspended solids.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ford 2 km u/s Gweestion River/River Moy**	*CODE*	**0049_SWW_00113**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River**	**15:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Bridge at Killaloe/Derg Lake**	*CODE*	**0049_SWW_00114**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**17.9**	**Not reported**

Comments:

Sampling procedure: samples were taken 20 cm below the surface. Samples were kept at 4°C until shipment.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Lagan at Stranmills**	*CODE*	**0049_SWW_00115**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORTHERN IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
03.09.2012	**River**	**12:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.88	**404**	**16.1**	**Not reported**

Comments:

Low river Flow + Height

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Quoile at Quoile Bridge**	*CODE*	**0049_SWW_00116**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**NORTHERN IRELAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**11:15**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.35	**368**	**17.2**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Clyde at Tidal Weir**	*CODE*	**0049_SWW_00117**
City	**East Kilbride (Glasgow)**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Scotland)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**11:50**	**15 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**River North Esk at Marykirk**	*CODE*	**0049_SWW_00118**
City	**East Kilbride**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Scotland)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
20.8.2012	**River**	**14:20**	**15-20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**East Kilbride (Glasgow)**	*CODE*	**0049_SWW_00119**
City	**River Almond at Craigiehall**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Scotland)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **28.8.2012**	*Sample type* **River**	*Sampling time* **10:40**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**River Ugie at Inverugie**	*CODE*	**0049_SWW_00120**
City	**East Kilbride (Glasgow)**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Scotland)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
20.8.2012	**River**	**13:00**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**River Dee**	*CODE*	**0049_SWW_00121**
City	**Chester**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Wales)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**River**	**13:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.27	**221**	**17.05**	**0.10**

Comments:

Sample taken just off center of river-scaffolding in place for bridge refurbishment work.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**River Usk**	*CODE*	**0049_SWW_00122**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (Wales)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**River**	**9:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Have filled blank bottle; very sorry!

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Humber**	*CODE*	**0049_SWW_00123**
City	**Not reported**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
12.8.2012	**Sea**	**9:41**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.88	**21751**	**18.32**	**15.22**

Comments:

Samples collected at approx. depth of 50 cm (using Niskin bottle) from survey vessel MV Humber Guardian. After collection, the samples were refrigerated on board and stored in the provided cool boxes during transit.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Mersey@ Buoy C21**	*CODE*	**0049_SWW_00124**
City	**Liverpool**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.8.2012	**Sea**	**7:12**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.92	**36791**	**17.2**	**27.894**

Comments:

The bottle 0049_SWW_00124_09_00 was lost while sampling. An Organics sample bottle was used. A corresponding field blank was taken too. The bottles were attached to a sampling pole and then submerged horizontally 20 cm under the sea. The bottle was then inverted to collect the sample.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Thames at Mucking**	*CODE*	**0049_SWW_00125**
City	**Petersborough**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date **5.9.2012**	*Sample type* **Sea**	*Sampling time* **8:51**	*Water Depth* **20 cm**
Water pH **7.776**	*Water Conductivity (µS/cm)* **31582**	*Water temperature (°C)* **18.7**	*Salinity* **22.715**

Comments:

Sample N. 0049-SWW-00125-06-00 lost part of the label, therefore has no barcode but the sample code is attached and visible. Sample N. 0049-SWW-00125-05-00 lost the inner lid. Sampling procedure followed as stated in "watchlist_instructionsEN2(2).pdf".

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Ouse at Scarbourough Rail Bridge**	*CODE*	**0049_SWW_00126**
City	**York**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**10:50**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.95	**447**	**15.07**	**Not reported**

Comments:

Sampled using pole + bottle clamp. Bottles immersed upside down and turned at 20 cm depth.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Wensum/Taverham Bridge**	*CODE*	**0049_SWW_00127**
City	**Norwich**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.9.2012	**River**	**12:20**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.99	**757**	**15.06**	**0.37**

Comments:

Indirect sample. Stainless steel sampling can used.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Tame D/S Minworth Stw**	*CODE*	**0049_SWW_00128**
City	**Fradley**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**River**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.65	**896**	**18.1**	**Not reported**

Comments:

Bottles conditioned with sample. All were opened and closed 20 cm below water surface. Fieldblank sample container opened for 15 minutes.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Avon**	*CODE*	**0049_SWW_00129**
City	**Blandford**	*Geographic coordinate system*	***UTM/UPS***
Country	**UNITED KINGDOM (England)**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
31.8.2012	**River/Lake**	**11:32**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Samples taken at approx 20 cm depth using pole from left bank. Small amount of rust in stainless steel sampling can. Angler in water by right bank.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Somes / Cicarlau**	*CODE*	**0049_SWW_00130**
City	**Cluj-Napoca**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**15:45**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.18	**901**	**21**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Crisul Repede-Cheresig**	*CODE*	**0049_SWW_00131**
City	**Oradea**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
1.9.2012	**River/Lake**	**12:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.75	**330**	**20**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Mures/Ungheni**	*CODE*	**0049_SWW_00132**
City	**Targu Mures**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
7.9.2012	**River/Lake**	**10:20**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.48	**377**	**20.5**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Bega / Otelec**	*CODE*	**0049_SWW_00133**
City	**Timisoara**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**11:43**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.91	**359**	**20**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Danube - Bazias**	*CODE*	**0049_SWW_00134**
City	**Dr.Tr.-Severin**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.8.2012	**River/Lake**	**13:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.64	**365**	**24.2**	**Not reported**

Comments:

Blank sample has an aluminium container. Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**R. Olt - Islaz**	*CODE*	**0049_SWW_00135**
City	**Slatina**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River/Lake**	**12:20**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.68	**458**	**23.4**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Argeş Clăteşti**	*CODE*	**0049_SWW_00136**
City	**Giurgiu**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River/Lake**	**10:22**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.00	**Not reported**	**23**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Ialomita River/downstream Tandarei**	*CODE*	**0049_SWW_00137**
City	**Slobozia**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**10:20**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
9.96	**1385**	**23**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Trotus River - Vranceni**	*CODE*	**0049_SWW_00138**
City	**Bacau**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.9.2012	**River/Lake**	**11:22**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.36	**1247.6**	**19.91**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Prut**	*CODE*	**0049_SWW_00139**
City	**Botoşani**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**Not reported**	**10:45**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.05	**553**	**20.6**	**356**

Comments:

Enclosed sampling procedure.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Dunare River/Reni km 132**	*CODE*	**0049_SWW_00140**
City	**Tulcea**	*Geographic coordinate system*	***UTM/UPS***
Country	**ROMANIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River**	**11:15**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.09	**347**	**24.9**	**Not reported**

Comments:

Enclosed sampling procedure.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Lobptn**	*CODE*	**0049_SWW_00141**
City	**Lelystad**	*Geographic coordinate system*	***UTM/UPS***
Country	**THE NETHERLANDS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
22.8.2012	**River/Lake**	**8:00**	**100 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.01	**60.05**	**24.96**	**0.3**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Eijsdptn**	*CODE*	**0049_SWW_00142**
City	**Lelystad**	*Geographic coordinate system*	***UTM/UPS***
Country	**THE NETHERLANDS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River/Lake**	**8:00**	**100 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.62	**53.8**	**21.8**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Maasss**	*CODE*	**0049_SWW_00143**
City	**Lelystad**	*Geographic coordinate system*	***UTM/UPS***
Country	**THE NETHERLANDS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River/Lake**	**9:56**	**100 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.95	**949**	**21.5**	**5.95**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Vrouwzd**	*CODE*	**0049_SWW_00144**
City	**Lelystad**	*Geographic coordinate system*	***UTM/UPS***
Country	**THE NETHERLANDS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
15.8.2012	**River/Lake**	**10:28**	**100 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.99	**56**	**19.95**	**0.3**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Noordwk10**	*CODE*	**0049_SWW_00145**
City	**Lelystad**	*Geographic coordinate system*	***UTM/UPS***
Country	**THE NETHERLANDS**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.7.2012	**Sea**	**10:28**	**350 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.14	**4243**	**18.62**	**31.57**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Càvado/Penide-Areias de Vilar**	*CODE*	**0049_SWW_00146**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

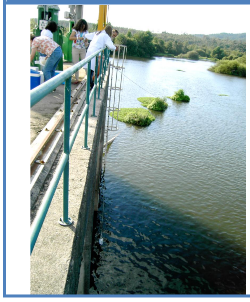
SAMPLING

Sampling date **29.8.2012**	*Sample type* **River**	*Sampling time* **17:55 – 18:15**	*Water Depth* **20 cm**
Water pH **6.7**	*Water Conductivity (µS/cm)* **57**	*Water temperature (°C)* **21.5**	*Salinity* **Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Douro/Barca D'Alva**	*CODE*	**0049_SWW_00147**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.8.2012	**River/Lake**	**13:20 – 13:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
9.3	**245**	**23.4**	**Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Douro/ Alb. Crestuma**	*CODE*	**0049_SWW_00148**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River/Lake**	**16:12 – 16:25**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.7	**275**	**25.9**	**Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Mondego/Ponte de Formoselha**	*CODE*	**0049_SWW_00149**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River/Lake**	**13:00 – 13:12**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**172**	**22.3**	**Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Tejo/Perais**	*CODE*	**0049_SWW_00150**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

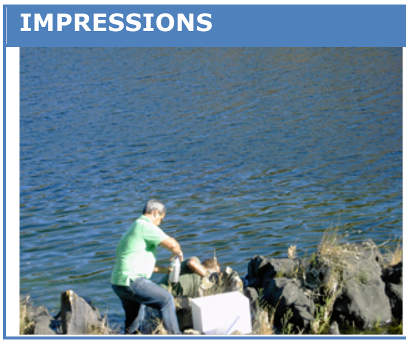
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.8.2012	**River/Lake**	**17:35 - 17:45**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.2	**624**	**20**	**Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

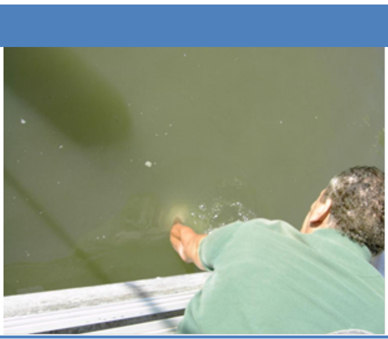
STATION IDENTIFICATION			
River/Station	**TEJO / Valada**	*CODE*	**0049_SWW_00151**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River/Lake**	**9:45 – 9:55**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**635**	**24.4**	**Not reported**

Comments:

Sampling according to ISO 5667 Part 3

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Sado/Alb.Roxo**	*CODE*	**0049_SWW_00152**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **31.8.2012**	*Sample type* **River/Lake**	*Sampling time* **14:40 – 14:50**	*Water Depth* **20 cm**
Water pH **8.3**	*Water Conductivity (µS/cm)* **928**	*Water temperature (°C)* **24.2**	*Salinity* **Not reported**

Comments:

Sampling according to ISO 5667 Part 3.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Guadiana/Monte da Vinha**	*CODE*	**0049_SWW_00153**
City	**Lisboa**	*Geographic coordinate system*	***UTM/UPS***
Country	**PORTUGAL**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
31.8.2012	**River/Lake**	**10:30 – 10:40**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.1	**522**	**24.4**	**Not reported**

Comments:

Sampling according to ISO 5667

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**VUOKSI/Vastuupuomi 061**	*CODE*	**0049_SWW_00154**
City	**Kouvola**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.9.2012	**River/Lake**	**9:20**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**KYMIJOKI/Huruksela 033 5600**	*CODE*	**0049_SWW_00155**
City	**Kouvola**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River/Lake**	**11:30**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kalkkistenkoski 4800**	*CODE*	**0049_SWW_00156**
City	**Asikkala**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **3.9.2012**	*Sample type* **River/Lake**	*Sampling time* **10:30**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **15.8**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Porvoonjoki River 11.4 6022**	*CODE*	**0049_SWW_00157**
City	**Porvoo**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
21.8.2012	**River**	**10:20**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**17.6**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Vantaa River 4.2 6040**	*CODE*	**0049_SWW_00158**
City	**Helsinki**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
21.8.2012	**River**	**11:40**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**17.4**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Aura 54 ohikulku va 6401**	*CODE*	**0049_SWW_00159**
City	**Turku**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River/Lake**	**14:16**	**50 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**15.7**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Nokiankoski 8200 ALAvirt**	*CODE*	**0049_SWW_00160**
City	**Nokia**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.9.2012	**River/Lake**	**10:00**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**16.6**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kojo 35 Pori-Tre**	*CODE*	**0049_SWW_00161**
City	**Turku**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
3.9.2012	**River/Lake**	**11:20**	**50 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**16.9**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Oulujoki**	*CODE*	**0049_SWW_00162**
City	**Oulu**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
03.9.2012	**River**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
6.7 (7.8.2012)	**3,1 mS/m (7.8.12)**	**14.3**	**Not reported**

Comments:

Sampling point is located below the hydroelectric power plant. Water is very hard flowing and turbulent. Water conductivity ja pH values are from samples taken 07.08.2012

Samples were taken directly to the bottles by hand.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Kemijoki, Isohaara**	*CODE*	**0049_SWW_00163**
City	**Rovaniemi**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
11.9.2012	**River**	**11:55**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**13.0**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Tornionjoki, Kukkola**	*CODE*	**0049_SWW_00164**
City	**Rovaniemi**	*Geographic coordinate system*	***UTM/UPS***
Country	**FINLAND**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
11.9.2012	**River**	**10:50**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**10.6**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ouche à Crimolois**	*CODE*	**0049_SWW_00165**
City	**Lyon**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**11:15**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Reyssouze à Viriat**	*CODE*	**0049_SWW_00166**
City	**Lyon**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**9:45**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ardières à Saint Jean d'Ardières**	*CODE*	**0049_SWW_00167**
City	**Lyon**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

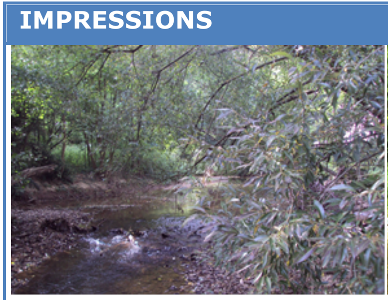
SAMPLING

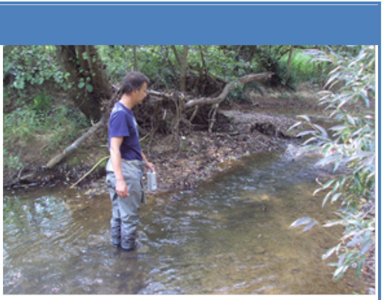
Sampling date **10.9.2012**	*Sample type* **River/Lake**	*Sampling time* **14:45**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS





JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Zergues à Lucenay**	*CODE*	**0049_SWW_00168**
City	**Lyon**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**16:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Guiers à Saint Genix sur Guiers**	*CODE*	**0049_SWW_00169**
City	**Lyon**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **10.9.2012**	*Sample type* **River/Lake**	*Sampling time* **13:30**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**L'Escaut canalisé à Mortagne du Nord**	*CODE*	**0049_SWW_00170**
City	**Doucu**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
22.5.2012	**River/Lake**	**9:45**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.04	**921**	**16**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Scarpe canalise à Raches**	*CODE*	**0049_SWW_00171**
City	**Doucu**	*Geographic coordinate system*	***UTM/UPS***
Country	**FRANCE**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
22.5.2012	**River/Lake**	**11:10**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.83	**842**	**15**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Tevere/Pontecuti Todi**	*CODE*	**0049_SWW_00172**
City	**Perugia**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.05.2012	**River**	**11:30**	**30 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.86	**577**	**20.2**	**Not reported**

Comments:

Eseguito il campionamento dalla sponda sx del fiume ad una profondità di circa 20 cm come richiesto. E' stata utilizzata una pinza per ancorare le bottiglie. Il campione in attesa del corriere e' stato conservato a 4°C.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Arno**	*CODE*	**0049_SWW_00173**
City	**Firenze**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.9.2012	**River**	**11:30**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.8	**8220**	**23**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Arno**	*CODE*	**0049_SWW_00174**
City	**Firenze**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
24.9.2012	**River**	**11:20**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.3	**506**	**20.6**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Emilia Po Ferrara**	*CODE*	**0049_SWW_00175**
City	**Ferrara (Pontelagoscuro)**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River**	**9:30**	**40 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**25.2**	**Not reported**

Comments:

SAMPLING PROCEDURE

1) 27/08/2012: I frozen cooling elements, received from JRC, into a -15°C refrigerated cell.
2) 28/08/2012: I brought cooling box (that contains empty bottles and cooling elements) on Po river platform.
3) I think I didn't wear anything that contains polymers, stain or water repelling agents
4) I opened the cooling box and I picked up fieldblank bottle. I opened it and I put it near to me during sample operation
5) I smelled smoke on platform; I think someone used barbecue grill recently (I told this for eventual IPA test)
6) I used Horizontal Beta Bottle, about at 40 cm under water surface
7) I closed fieldblank bottle and I put it into the cool box
8) I hold every bottle into a dark cold room (3°C) for 1 day into the opened cool boxes
9) 29/08/2012: I closed and packaged the cooling box with sample bottles and cooling elements
10) 29/08/2012: I delivered the cooling box to the courier as engaged with Mr.Locoro.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Reno/Ponte Bastia**	*CODE*	**0049_SWW_00**
City	**Ravenna**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
5.9.2012	**River**	**12:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Samples taken by submerging the open bottles upside down, and then reversing them at 20 cm depth.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Reno/Volta Scirocco**	*CODE*	**0049_SWW_00177**
City	**Ravenna**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
5.9.2012	**River**	**10:30**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Samples taken by submerging the open bottles upside down, and then reversing them at 20 cm depth.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Adige- Ponte per Vadena**	*CODE*	**0049_SWW_00178**
City	**Bolzano**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
30.8.2012	**River**	**9:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.01	**197**	**13.5**	**Not reported**

Comments:

At the river bank

4 aluminium bottles+ 6 plastic bottles: for the samples

1 aluminium bottle for the blank

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Lambro-Orio Litta**	*CODE*	**0049_SWW_00179**
City	**Milano**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
28.8.2012	**River**	**11:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.86	**579 at 25°C**	**21.1**	**Not reported**

Comments:

Bottles were immersed upside down and turned below the surface.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Adige/Cavarzere**	*CODE*	**0049_SWW_00180**
City	**Mestre**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
29.8.2012	**River**	**12:40**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.86	**228**	**19.6**	**Not reported**

Comments:

The bottle has been tied to a sample rod and the sample was taken from a catwalk to 1 meter from the same. The bottles were immersed upside down and turned 20 cm from the surface. By mistake it championship was also the fieldblank.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Tanaro – Bassignana (AL)**	*CODE*	**0049_SWW_00181**
City	**Asti**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.9.2012	**River**	**11:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.80	**225**	**17.5**	**Not reported**

Comments:

Rainfall the days before sampling.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Po – Isola Sant'Antonio (AL)**	*CODE*	**0049_SWW_00182**
City	**Asti**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.9.2012	**River**	**10.15**	**30 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.7	**292**	**19**	**Not reported**

Comments:

Rainfall the days before sampling.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**IT18Amato3**	*CODE*	**0049_SWW_00183**
City	**Soveria Mannelli**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**13:00**	**0 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Campionamento superficiale per mancanza di profondità del punto di prelievo prescelto.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**IT18RC39**	*CODE*	**0049_SWW_00184**
City	**Roccella Jonica**	*Geographic coordinate system*	***UTM/UPS***
Country	**ITALY**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date **Not reported**	*Sample type* **Sea**	*Sampling time* **Not reported**	*Water Depth* **25 cm**
Water pH **Not reported**	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Norrström/Stockholm Centralbron**	*CODE*	**0049_SWW_00185**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
17.9.2012	**River/Lake**	**10:00-10:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**
Comments: *(comments in Swedish, incomprehensible)*			

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Viskan/Åsbro**	*CODE*	**0049_SWW_00186**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **17.9.2012**	*Sample type* **River/Lake**	*Sampling time* **Not reported**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Göta älv/Alelyckan**	*CODE*	**0049_SWW_00187**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
11.9.2012	**River/Lake**	**8:30**	**3-4 m**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Prova ar tagna i vår provtagnengsstation vis intaget i Göta Älv.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Motala ström/Norrköping**	*CODE*	**0049_SWW_00188**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
17.9.2012	**River/Lake**	**9:30**	**Not reported**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Provet är taget I provkran på vattenverket Borg provtagare: Gittan Svensson 011-153656

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Dalälven/Älvkarleby**	*CODE*	**0049_SWW_00189**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
12.9.2012	**River/Lake**	**14:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Emån/Emsfors**	*CODE*	**0049_SWW_00190**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
17.9.2012	**River/Lake**	**10:00-11:00**	**15 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Ingen Teflon beklädnad

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Fyrisån/ Fyrisån Flottsund**	*CODE*	**0049_SWW_00191**
City	**Uppsala**	*Geographic coordinate system*	***UTM/UPS***
Country	**SWEDEN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
18.9.2012	**River/Lake**	**18:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

Vinyl gloves, also rinsed caps with sample water.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Struma after discharge of river Arkata before dam Pchelina**	*CODE*	**0049_SWW_00192**
City	**Sofia**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **27.08.2012**	*Sample type* **River**	*Sampling time* **11:40**	*Water Depth* **20 cm**
Water pH **7.65**	*Water Conductivity (µS/cm)* **859**	*Water temperature (°C)* **18.9**	*Salinity* **Not reported**

Comments:

Sampling procedure ISO 5667-6

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Maritsa- dam Manole village**	*CODE*	**0049_SWW_00193**
City	**Plovdiv**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **27.8.2012**	*Sample type* **River**	*Sampling time* **12:40**	*Water Depth* **20 cm**
Water pH **8.01**	*Water Conductivity (µS/cm)* **461**	*Water temperature (°C)* **21**	*Salinity* **Not reported**

Comments:

Sampling procedure: ISO 5667-6

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Maritsa / Svilengrad**	*CODE*	**0049_SWW_00194**
City	**Haskovo**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

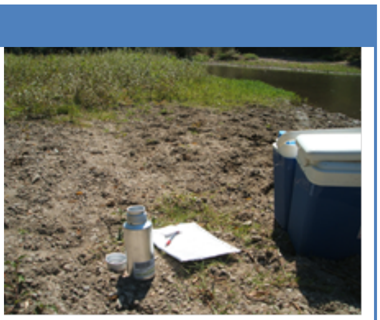
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
03.9.2012	**River**	**13:05**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
8.44	**582**	**24.1**	**Not reported**

Comments:

Sampling procedure: ISO 5667-6

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Timok**	*CODE*	**0049_SWW_00195**
City	**Montana**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.8.2012	**River**	**11:30**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.12	**1027**	**23.7**	**Not reported**

Comments:

Sampling procedure: ISO 5667-6; the river Timok is a border between Bulgaria and Serbia that's why we can't take pictures at this place.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**River Iskar – after Novi Iskar**	*CODE*	**0049_SWW_00196**
City	**Sofia**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.8.2012	**River**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
6.87	**465**	**19.1**	**Not reported**

Comments:

Sampling procedure: ISO 5667-6

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Devnenska river - estuary**	*CODE*	**0049_SWW_00197**
City	**Varna**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.08.2012	**River**	**11:00**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
8.19	**839**	**19.1**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	Burgas Lake - East	*CODE*	**0049_SWW_00198**
City	**Burgas**	*Geographic coordinate system*	***UTM/UPS***
Country	**BULGARIA**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
27.8.2012	**Lake**	**13:40**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
10.08	**1502**	**28.6**	**0.6**

Comments:

Sampling procedure: ISO 5667-4

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Randers Fjord**	*CODE*	**0049_SWW_00199**
City	**Hojbjerg**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
26.6.2012	**Sea**	**10:26**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**9420**	**15.71**	**6.67 ‰**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Odense Fjord**	*CODE*	**0049_SWW_00200**
City	**Odense**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **18.6.2012**	*Sample type* **Sea**	*Sampling time* **8:30**	*Water Depth* **Not reported**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **26050**	*Water temperature (°C)* **14.84**	*Salinity* **20.14 ‰**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Vandkraftsøen**	*CODE*	**0049_SWW_00201**
City	**Ringkøbing**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
25.6.2012	**River/Lake**	**12:30**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.32	**307**	**13.9**	**<0.1‰**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Horn Sø**	*CODE*	**0049_SWW_00202**
City	**Ringkøbing**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
Not reported	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
9.12	**5710**	**14.5**	**3.10‰**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Knud å Sofiendal**	*CODE*	**0049_SWW_00203**
City	**Naturstyrelsen**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
13.9.2012	**River/Lake**	**10:00**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.6	**576**	**10.2**	**Not reported**

Comments:

Sampling according to procedure described in "Watch list pilot exercise".

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Højvads Rende**	*CODE*	**0049_SWW_00204**
City	**Nykøbing**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **26.6.2012**	*Sample type* **River/Lake**	*Sampling time* **12:00**	*Water Depth* **5-20 cm**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

Total depth of lake is approx. 20 cm.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Lyngbygård å**	*CODE*	**0049_SWW_00205**
City	**Aarhus**	*Geographic coordinate system*	***UTM/UPS***
Country	**DENMARK**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
13.9.2012	**River/Lake**	**14:00**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.4	**554**	**12.6**	**Not reported**
Comments: Sampling according to procedure described in "Watch list pilot exercise".			

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Guadiana Luciana**	*CODE*	**0049_SWW_00206**
City	**Balbuena**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
14.9.2012	**River**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**457**	**21**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Guadiana- Capt. Bocachanza**	*CODE*	**0049_SWW_00207**
City	**Puerto de la Loja**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date **7.9.2012**	*Sample type* **River**	*Sampling time* **12:30**	*Water Depth* **20 cm**
Water pH **7.9**	*Water Conductivity (µS/cm)* **1484**	*Water temperature (°C)* **25.9**	*Salinity* **Not reported**
Comments: None.			

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Guadiana VIII – Azud Benavides**	*CODE*	**0049_SWW_00208**
City	**Benavides**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.9.2012	**River**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**582**	**26.5**	**Not reported**

Comments:

None.

IMPRESSIONS

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Guadiana-Tablas Daimiel (Presa Puente Navarro)**	*CODE*	**0049_SWW_00209**
City	**Daimiel**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

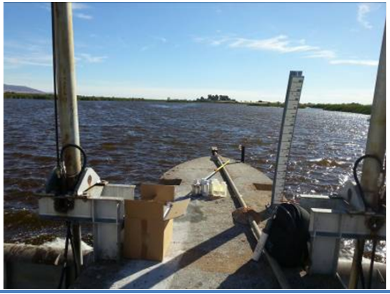
SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
7.9	**4200**	**21.5**	**Not reported**

Comments:

None.

IMPRESSIONS



JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Ebro-Tortosa**	*CODE*	**0049_SWW_00210**
City	**Tortosa**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
5.9.2012	**River**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Zadorra/Vitoria**	*CODE*	**0049_SWW_00211**
City	**Vitoria**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Ebro/Presa Pina**	*CODE*	**0049_SWW_00212**
City	**Presa Pina**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
4.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:
None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Arga/Ororbia**	*CODE*	**0049_SWW_00213**
City	**Ororbia**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
6.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Henares/ Alcalá**	*CODE*	**0049_SWW_00214**
City	**Alcalá de Henares (Espinillos)**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Jarama/E. Presa del Rey**	*CODE*	**0049_SWW_00215**
City	**Madrid**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date **10.9.2012**	*Sample type* **River/Lake**	*Sampling time* **Not reported**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**
Comments: None.			

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Manzanares/Rivas**	*CODE*	**0049_SWW_00216**
City	**Madrid**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date **10.9.2012**	*Sample type* **River/Lake**	*Sampling time* **Not reported**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (µS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Jarama/Aranjuez (P. Largo)**	*CODE*	**0049_SWW_00217**
City	**Aranjuez**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**Not reported**	**River/Lake**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION			
River/Station	**Guadarrama/Bargas**	*CODE*	**0049_SWW_00218**
City	**Bargas**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING			
Sampling date **10.9.2012**	*Sample type* **River/Lake**	*Sampling time* **Not reported**	*Water Depth* **20 cm**
Water pH **Not reported**	*Water Conductivity (μS/cm)* **Not reported**	*Water temperature (°C)* **Not reported**	*Salinity* **Not reported**
Comments: None.			

IMPRESSIONS
Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Tajo/Toledo (Safont)**	*CODE*	**0049_SWW_00219**
City	**Toledo**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Arga/Ororbia**	*CODE*	**0049_SWW_00220**
City	**Ororbia**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

JRC EU wide monitoring – Watch List Pilot Exercise

Sampling Location card

STATION IDENTIFICATION

River/Station	**Pisuerga/Simancas**	*CODE*	**0049_SWW_00221**
City	**Simancas**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (µS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

STATION IDENTIFICATION

River/Station	**Duero/Zamora**	*CODE*	**0049_SWW_00222**
City	**Zamora**	*Geographic coordinate system*	***UTM/UPS***
Country	**SPAIN**	*Map Datum*	**WGS 84**
		Latitude	[redacted]
		Longitude	[redacted]

SAMPLING

Sampling date	*Sample type*	*Sampling time*	*Water Depth*
10.9.2012	**River/Lake**	**Not reported**	**20 cm**
Water pH	*Water Conductivity (μS/cm)*	*Water temperature (°C)*	*Salinity*
Not reported	**Not reported**	**Not reported**	**Not reported**

Comments:

None.

IMPRESSIONS

Not available

European Commission
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