

Lot 2 : Supply of Water Quality Monitoring Equipment

The main goal of the supplies tendered under this lot is to enhance capacity for analysis of WFD priority substances (EQS Directive, 2008/105/EC and its recent update) in the National Laboratory of SEPA responsible for water monitoring, create capacity for determination of all priority substances and test this capacity by analysing real world samples from the SEPA annual monitoring programme,

1. General Requirements

- 1.1. The Contractor will be required to provide at the latest with delivery, original documents or certificates (e.g. CE mark) including the test protocols, that prove conformity of all delivered equipment to the requirements to the standards as specified in Annex II + III. Preferably these documents are to be included with the tender offer.
- 1.2. The Contractor must be aware that no provisional acceptance can be given without the presence of the complete set of documents as described under 1.1. and in addition to other requirements conditioning provisional acceptance.

2. Minimum requirements and supporting documentation

- 2.1. Tenderers are required to demonstrate that the offered specifications are responsive to the Tender Dossier requirements identifying model, manufacturer and country of origin of each individual item in their Technical Offer.
- 2.2. Technical specifications described in column 2, Table Annex II + III: "the Contractor's technical offer" is minimum requirements. Tenderers may offer better specifications and newer models/versions, with improved, additional or new features, but must not provide offers that do not strictly comply with the minimum requirements or are incompatible with intended purpose of use.
- 2.3. The information provided by the Tenderer in column 3 of Annex II + III must be sufficiently detailed to establish that the offered supply meets or exceeds minimum requirements.

The accompanying documentation to be provided for all items being offered must contain detailed technical specifications of technical characteristics, functionality, regulatory compliance, and conformity to standards as requested in specifications in Annex II + III.

The information provided in the accompanying literature must match the Tenderer's written specifications as shown in column 3 of Annex II + III. In case there are minor differences between for example the supplied manufacturers' technical literature and the Tenderer's written specification, the reasons must be detailed in the Tenderer's specifications.

- 2.4. Manufacturers' technical literature must be marked appropriately i.e. item model number and manufacturers' technical specification "line/s" where they correspond to the requested technical specifications. As cross-reference Column 4 "Notes, remarks, ref to documentation" must be used.
- 2.5. The Tenderer must preferably attach printed labels to the literature to identify correspondence with the item No offered, rather than handwritten identification.
- 2.6. The Tenderer must provide technical documentation in English language.

3. Completeness of the supply

- 3.1.** Supply delivery, including installation, integration and final customization must include all needed parts, accessories, operating and maintenance manuals, and consumables required for the supplies to be presented for provisional acceptance fully installed, operational and ready for use. User manuals for all the equipment must be provided in English and Serbian.
- 3.2.** Training, consumables, accessories, parts and documentation used during delivery, installation, integration and customisation before provisional acceptance must therefore be anticipated and calculated into the offer.
- 3.3.** It shall be the sole responsibility of the Tenderer to ensure that all pre-requisites for the completeness of the supply delivery are met before its commencement.

4. Supply Delivery

- 4.1.** The Tenderer must provide the necessary measures to prevent any damage during delivery, installation, integration and customization stages. If any damage occurs during delivery, installation, integration and customization stages, it must be appropriately rectified by the Tenderer.
- 4.2.** Installation, testing, demonstration and training must be completed within the time frame set out in the Special Conditions of Supply Contracts included in the Tender Dossier. At the end of this period, all items supplied, including hardware and software, must be fully operational and the staff chosen by the Beneficiary will have been given full training for safe and efficient use of the items.
- 4.3.** There will be no partial provisional acceptance. Provisional acceptance may be requested only when all supplies of all the equipment have been delivered to site, have been installed, are fully compliant with all tender specifications and general requirements, have passed all required tests, are fully functional and after operator training has been completed.

5. Conformity to regulations and standards

- 5.1.** Items must conform to relevant regulations and standards, including any ISO, IEC, domestic or other relevant regulations and standards (e.g. CE marking) that apply to each specific item.

6. Warranty

- 6.1.** The Warranty period for all supplies must be at least 1 year from the date of the Contracting Authority having issued a certificate of provisional acceptance.
- 6.2.** The Tenderer must repair defects or damaged supplies at his own cost during the Warranty period. In case the defect or damage cannot be repaired within the solution time requested, the Tenderer must replace equipment for the period of time needed for repairs. In case the defect or damage cannot be repaired, the Tenderer must fully replace the item.
- 6.3.** Requirements: On-site response time within 24 hours (during working hours) during one year after provisional acceptance. Repair of the malfunctioning equipment within maximum 10 working days during one year after provisional acceptance.
- 6.4.** The Tenderer must provide Service organisation contact data including organisation name, e-mail, phone and fax number.

- 6.5 Max response time to officially submitted request not later than the next working day and within 8 (eight) hours max response guaranteed time.
- 6.6 The Tenderer must provide the manufacturer's confirmation/declaration that genuine accessories and spare parts will be available for a minimum of 5 (five) years after the final acceptance of the equipment.

7. Visibility

All supplies must comply with the Visibility guidelines in force within the scope of external aid contracts financed from the EU general budget; c.f. http://ec.europa.eu/europeaid/work/visibility/index_en.htm. As part of the request for provisional acceptance, the Contractor must provide documentary evidence of compliance with the visibility rules.

For purposes of visibility and clarity of labelling, all hardware shall have a solidly fixed metallic type (pure aluminium foil, vinyl lacquer coated aluminium foil, or similar) or solid plastic labels (synthetic surface coated, PVC, or similar) specially formulated for offset printing the design of which should be submitted within four weeks of signature of the contract. Self-adhesive paper or film labels are not allowed.

The Contractor shall produce a draft of the layout of any visibility labels and submit it for written approval by the Contracting Authority prior to production / delivery.

LIST OF ACRONYMS – LOT 2

APCI - Atmospheric Pressure Chemical Ionisation
CI - Chemical Ionisation
CIS - Cooled Injection System
CN - Cyano stationary phase
DAD UV – Diode Array Ultraviolet Detector
DIC - Differential Interference Contrast
EI - Electron Ionisation
EQS Directive -- Environmental Quality Standards Directive; Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council.
ESI – Electrospray
FWHM - Full Width at Half Maximum
GC - Gas Chromatography
GPC - Gel Permeation Chromatography
HCB - Hexachlorobenzene
LVI - Large Volume Injection
MRM - Multiple Reaction Monitoring
MS/MS - Tandem mass spectrometry
OFN - Octafluoronaphthalene
PCB-DLs - Polychlorinated biphenyls like Dioxins

PCDDs - Polychlorinated dibenzodioxins
PCDFs - Polychlorinated dibenzofurans
PDMS - Polydimethyl siloxane
PLRPs - Polystyrene Divinylbenzene copolymer
PP - Polypropylene
PTFE - Polytetrafluoroethylene
PTV - Programmed Temperature Vaporizer
RSD - Relative Standard Deviation
SBSE - Stir Bar Sorptive Extraction
SEPA - Serbian Environmental Protection Agency
SPE - Solid Phase Extraction
TDU - Thermo Desorption Unit
TOF MS - Time of Flight Mass Spectrometry
UHPLC - Ultra High Performance Liquid Chromatograph
WFD - Water Framework Directive, 2000/60/EC

The equipment shall be delivered, installed and put into operation as presented in the following table:

Item Number	Item	SEPA
LOT 2		
2.1.	Gas chromatograph - time-of-flight - mass spectrometer (GCxGC-TOF-MS) for comprehensive gas chromatography with automated sample preparation/sample introduction facility and autosampler system fully compatible with SBSE and LVI techniques, chromatographic control and data management station with software for analysis of WFD priority substances and identification of river basin specific pollutants	No of Units 1
2.2.	Gas chromatograph - triple quadrupole - mass spectrometer (GC-MS/MS) with automated sample preparation/sample introduction facility for analysis of WFD priority substances and identification of river basin specific pollutants	1
2.3.	Ultra High Performance Liquid Chromatograph (UHPLC) with Diode Array UV Detector (DAD UV) and high resolution MS/MS spectrometer with on-line SPE sample preparation system, chromatographic control and data management station with software for analysis of WFD priority substances and identification of river basin specific pollutants	1
2.4.	Fully automated analyser for the determination of mercury in liquid samples using technique of cold vapours with atomic fluorescence detection, and data management station with software	1
2.5.	Gel Permeation Chromatograph for preparation of sediment and biota samples	1
2.6.	Lyophiliser for preparation of sediment and biota samples	1
2.7.	Vibratory Sieve Shaker with set of sieves (0,063-2,000 mm) for preparation of sediment samples	1
2.8.	Mortar grinder with PTFE scrapper for preparation of sediment samples	1
2.9.	Inverted microscope with dark and light field and phase contrast with camera and image analysis for phytoplankton analysis	1
2.10.	Stereomicroscope with goosneck type cold light with camera and image analysis for analysis of benthic invertebrates	1
2.11.	Standards and solvents for analysis of WFD priority substances	1
2.12.	Trainings: User education	3

Addresses of the beneficiary institution:

SEPA:

Serbian Environmental Protection Agency
Ruže Jovanovića 27a str., 11000 Belgrade, Serbia

1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
2.1.	Gas chromatograph - time-of-flight - mass spectrometer (GCxGC-TOF-MS) for comprehensive gas chromatography with automated sample preparation/sample introduction facility and autosampler system fully compatible with SBSE and LVI techniques, chromatographic control and data management station with software	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
Specification	<p>GC system</p> <p>a) <i>GC thermostat oven</i></p> <ul style="list-style-type: none"> - Temperature range: 4 °C above ambient to + 450 °C - Minimum increment: 0.1 °C - Temperature stability: ± 0.5 °C or better - Programmable temperature gradient rate - Minimum 5 programmable temperature ramps - Fast ramp rates for fast-GC operation, minimum 100 °C/min - Automatic cooling down to initial temperature after analysis (fast cooling option) - Automatic heating shut-down after exceeding the maximum temperature - Auto shut down for gas leakage <p>b) <i>Flow control</i></p>				

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<p>- Compensation for barometric pressure and ambient temperature changes</p> <p>- Electronic pressure/flow control of all gases including detector and injector ones, as well as split ratio setting from PC</p> <p>- Constant flow and constant pressure modes</p> <p>- Pressure set points may be adjusted by increments of 0.01 psi, with typical control ± 0.1 for the range 0.00 to 100.00 psi</p> <p>c) <i>Accessories - spare parts</i></p> <p>- Carrier gas helium (optional hydrogen, 99.9995% purity): tenderer must provide two years supply of specified gas (preferably by renting refillable gas cylinders, estimated gas consumption is 4 x 50 l), pressure regulator, gas filters 2 pcs.</p> <p>- All needed tubings, connectors</p> <p>d) <i>GC injectors</i></p> <p>- One port: Split/splitless injector with electronic pressure and flow control</p> <p>- Second port: TDU with PTV for Stir Bar Sorptive Extraction with electronic pressure and flow control</p> <p>- TDU must be cooled by Universal Peltier Cooling or its equivalent</p> <p>- PTV must allow for cooling by technical CO₂</p> <p>e) <i>Accessories - spare parts</i></p> <p>- Liners for TDU multi-baffle, 20 pcs.</p> <p>- Ferrules for liners 30 pcs.</p>			

A

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - TDU and PTV tool for ferrule adjusting - PTV-Ferrules for 0.25 mm columns, 20 pcs. - PTV-Ferrules for 0.32 mm columns, 20 pcs. - Silver seals for PTV, 10 pcs. - Empty baffle liner for PTV, 20 pcs. - Ferrules/O-ring seals for split/splitless liners 20 pcs. - Deactivated liners for split/splitless; 10 pcs. for split and 10 pcs. for splitless - Graphite/vespel ferrules for 0.25 mm columns, 20 pcs. - Graphite/vespel ferrules for 0.32 mm columns, 20 pcs. - Seals for split/splitless, 10 pcs. - High temperature and low bleed septa, 100 pcs. - Cooling gas: technical CO₂, tenderer must provide two years supply of specified gas (preferably by renting refillable cylinders, estimated gas consumption is 10 x 50 l) <p><i>D Gas chromatography columns</i></p> <ul style="list-style-type: none"> - Suitable for the analysis of semivolatile and volatile compounds with consistent inertness and low bleed characteristics for MS analysis as first dimension: - 100% Dimethylpolysiloxane with dimensions (L, ID, df) - 30 m, 0.25 mm, 0.25 um, 3 pcs. - 5% Phenyl, 95% dimethylpolysiloxane with (L, ID, df) - 30 m, 0.25 mm, 0.25 um, 3 pcs. - Column suitable for dioxin separation (L, ID, df) - 60 m, 0.25 mm, 0.25 um, 2 pcs. similar to Rtx-DIOXIN2 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - The second dimension: <ul style="list-style-type: none"> - Polar stationary phase similar to BPX50 (L, ID, d_i) - 5 m, 0.1 mm, 0.1 um, 1 pcs. - Polar stationary phase similar to FT8 (L, ID, d_i) - 5 m, 0.1 mm, 0.1 um, 1 pcs. - Polar stationary phase similar to SupelcoWax-10 (L, ID, d_i) - 5 m, 0.1 mm, 0.1 um, 1 pcs. - System for protecting analytical columns: <ul style="list-style-type: none"> - Deactivated fused silica tubing, 10 m, 0.25 mm I.D., 3 pcs. - Universal union for any capillary column diameter (recommended stainless steel unions), 3 pcs. <p><i>g) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Stainless steel ferrules and nuts for 0.10 - 0.25 mm column, 30 pcs. - Stainless steel ferrules and nuts for 0.32 mm column, 10 pcs. - Storage cap - Metal Ferrules, 20 pcs. <p><i>h) Automatic liquid sampler</i></p> <ul style="list-style-type: none"> - Must be compatible with the following: <ul style="list-style-type: none"> - SBSE - LVI (large volume injection) - Multiple pre- and post-injection cleaning cycles - Operator selectable parameters must be fully controlled by software that is part chromatographic station 			

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<p>- Capacity of at least 50 positions for LVI and SBSE</p> <p>- LVI - ability to inject from 1 ul to 100 ul of sample per one injection</p> <p><i>i) Accessories - spare parts</i></p> <p>- SBSE:</p> <ul style="list-style-type: none"> - PDMS bars with dimensions: 1 cm length and film thickness 1 mm, 100 pcs. - PDMS bars with dimensions: 2 cm length and film thickness 1 mm, 100 pcs. - Glass TDU tubes, 100 pcs. - TDU tubes metal fittings 100 pcs. - Tube Conditioner for ten test tubes and stir bar with inert gas connection <p><i>d) GCxGC modulator</i></p> <ul style="list-style-type: none"> - The GCxGC thermal modulator should be capable of effectively (and quantitatively) modulating analytes within the range of C₉ - C₄₀ n-alkane - Must contain all gases, fittings and connections including regulators needed for automated operation - Liquid nitrogen free system - Allow for modulation of the cycle time from 2 to 10 s in steps of 0.1 s - Electronically controlled - Possibility to monitor its status and control it through the GCxGC software - Variable secondary column dimensions, internal diameter from 			

M

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<p>0.05 to 0.53 mm, length min. 10 m</p> <ul style="list-style-type: none"> - Independent control of the second oven with programming rate min. 30 °C/min - Variable modulation parameters (modulation period and thermal pulses) programmable across the chromatographic run <p><i>k) Software for evaluation of multidimensional chromatograms</i></p> <ul style="list-style-type: none"> - Mass spectral deconvolution - Identification based on library comparison - Automated combination of modulated peaks - Automated sample comparison - Classifications – defining the specific regions in the contour plot, processing unknown samples using these regions - Automated quantitative analysis - calibration, quantification, automated target data processing based on RT and full spectra information <p><i>l) TOF- mass spectrometer</i></p> <ul style="list-style-type: none"> - Vacuum system: Main pump or pumps - Turbo molecular pump allowing gas flow rate up to 5 ml/min for EI - Ion source: EI - Time-of-flight mass filter Mass range: 5-1000 m/z 			

3

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Acquisition rate: 500 Hz in full mass range in GCxGC mode (written to disk) - SCAN - Minimum EI sensitivity for 1 pg/ul OFN, S/N 100:1 at m/z 272 or 10 pg HCB by 20 spectra/s, with peak width 1 s, S/N 10:1 at m/z 284 - Robust and inert ion source <p><i>m) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Filaments for EI, 4 pcs. - All needed tubings, connectors <p><i>n) Chromatographic control and data management station with software:</i></p> <ul style="list-style-type: none"> - Integral, MS Windows compatible software on one PC, for complete control over all the parts of the instrument ((GC) chromatograph, automatic sampler, detector) and over important parameters (gas flows and pressures and temperatures). - The acquisition, deconvolution, evaluation chromatographic data for qualitative and quantitative analysis methods supported by the software itself, and the generation of the corresponding report, allowing instant printing. - Two LCD monitors: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz. - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection <p><i>o) Power supply (UPS)</i></p> <ul style="list-style-type: none"> - For all items 220-240V, 50-60 Hz and uninterruptible power 			

3

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
Software updates and upgrades	supply of corresponding capacity at least for 40 min. Regular updates and upgrades of software if and when available during one year after provisional acceptance.			
Testing	Testing (verification of functionality) of complete equipment in duration of 3 days and in the presence of representatives of the end user. Provision of performance verification protocols.			
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking. The Tenderer must provide conformity that the item is in compliance with Restriction of Hazardous Substances Directive (RoHS; 2011/65/EU).			

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
2.2.	Gas chromatograph with triple quadrupole mass detector and autosampler system fully compatible with SBSE, headspace and LVI techniques, chromatographic control and data management station with software Quantity: 1			
	Manufacturer's name:			
	Product type, model:			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
<p>Specification</p>	<p>GC system</p> <p><i>a) GC thermostat oven</i></p> <ul style="list-style-type: none"> - Temperature range: 4 °C above ambient to + 450 °C - Minimum increment: 0.1 °C - Temperature stability: ± 0.5 °C or better - Operating with CO₂ cryogenic cooling: -40 °C to 450 °C - Programmable temperature gradient rate - Minimum 15 programmable temperature ramps - Fast ramp rates for fast-GC operation, minimum 100 °C/min - Automatic cooling down to initial temperature after analysis (fast cooling option) - Automatic heating shut-down after exceeding the maximum temperature - Auto shut down for hydrogen gas leakage <p><i>b) Flow control</i></p> <ul style="list-style-type: none"> - Compensation for barometric pressure and ambient temperature changes - Electronic pressure/flow control of all gases including detector and injector ones, as well as split ratio setting from PC - Constant flow and constant pressure modes - Pressure set points may be adjusted by increments of 0.01 psi, with typical control ± 0.01 for the range 0.00 to 100.00 psi <p><i>c) Accessories- spare parts</i></p>			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Carrier gas helium (optional hydrogen, 99.9995% purity): tenderer must provide two years supply of specified gas (preferably by renting refillable cylinders, estimated gas consumption is 4 x 50 l), pressure regulator, gas filters 2 pcs. - All needed tubings, connectors 			
	<p><i>d) GC injectors</i></p> <ul style="list-style-type: none"> - One port: Injector for Large Volume Injection - Second port: TDU with CIS4 for Stir Bar Sorptive Extraction with electronic pressure and flow control <ul style="list-style-type: none"> - TDU cooled by Universal Peltier Cooling or its equivalent - CIS4 cooled by technical CO₂ <p>Temp. programming up to 10 ramps and 900 °C/min</p> <ul style="list-style-type: none"> - Max. temperature 450 °C - Sample capacity for TDU - minimum 50 samples 			
	<p><i>e) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Liners for TDU-CIS4 multi-baffle, 20 pcs. - Ferrules for liners 30 pcs. - Tool for ferrule adjusting - PTV-Ferrules for 0.25 mm columns, 20 pcs. - PTV-Ferrules for 0.32 mm columns, 20 pcs. - Silver seals for CIS, 10 pcs. - Empty baffle liner for LVI, 20 pcs. - Ferrules/O-ring seals for LVI liners 20 pcs. - Graphite/vespel ferrules for 0.25 mm columns, 20 pcs. 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Graphite/vespel ferrules for 0.32 mm columns, 20 pcs. - Cooling gas: 5 cylinders (preferably rented refillable cylinders; volume 50 l) of technical CO₂ <p><i>f) Gas chromatography columns</i></p> <ul style="list-style-type: none"> - Suitable for the analysis of semivolatle and volatile compounds with consistent inertness and low bleed characteristics for MS analysis: <ul style="list-style-type: none"> - 100% Dimethylpolysiloxane with dimensions (L, ID, d_f) - 30 m, 0.25 mm, 0.25 um, 3 pcs. - 5% Phenyl, 95% dimethylpolysiloxane with (L, ID, d_f) - 30 m, 0.25 mm, 0.25 um, 3 pcs. - Column suitable for analysis of VOC similar to DB-624 (L, ID, d_f) - 30 m, 0.32 mm, 1,8 um, 2 pcs. <p>- System for protecting analytical columns: <ul style="list-style-type: none"> - Deactivated fused silica tubing, 10 m, I.D. 0.25 mm, 3 pcs. - Universal union fitting to any capillary column diameter (recommended stainless steel made), 3 pcs. </p> <p><i>g) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Stainless steel ferrules and nuts for 0.10 - 0.25 mm column, 40 pcs. - Stainless steel ferrules and nuts for 0.32 mm column, 10 pcs. - Storage cap - Metal ferrules, 20 pcs. <p><i>h) Backflash system</i></p> <ul style="list-style-type: none"> - System for extending the lifetime of the analytical column 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Operator selectable parameters must be fully controlled by software - All connections must fit to columns with I.D. 0.25 mm and 0.32 mm and be compatible with Si/Ti Metal Ferrules or their equivalent <i>i) Accessories - spare parts</i> - Restriction capillaries, 3 pcs. <i>j) Automatic liquid sampler</i> - Must be compatible with the following use: <ul style="list-style-type: none"> - SBSE - LVI - Headspace - Multiple pre- and post-injection cleaning cycles - Operator selectable parameters must be fully controlled by software that is part chromatographic station - Must be easily mounted and dismantled without the use of tools for quick installation on other GCs of the same type - Capacity of at least 50 sample vials for LVI and headspace - LVI - ability to inject from 1 ul to 100 ul of sample per one injection - Random access sampling capability <i>k) Accessories - spare parts</i> - SBSE: <ul style="list-style-type: none"> - PDMS bars with dimensions: 1 cm length and film thickness 1 mm, 100 pcs. 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - PDMS bars with dimensions: 2 cm length and film thickness 1 mm, 100 pcs. - Glass TDU tubes, 100 pcs. - TDU tubes metal fittings, 100 pcs. - Tube Conditioner - LVI: <ul style="list-style-type: none"> - Septa extra low bleed, 200 pcs. - Temperature stable to 350 °C - Set of syringes: <ul style="list-style-type: none"> - 5 ul, 10 pcs. - 10 ul, 10 pcs. - 100 ul, 3 pcs. - 500 ul, 3 pcs. - Headspace: <ul style="list-style-type: none"> - Headspace vials (20 ml) and aluminium seals and PTFE/silicone septa, 400 pcs. - Manual crimper and decapper, 20 mm - Syringe 2 ml, 2 pcs. <i>b) MS/MS spectrometer</i> <ul style="list-style-type: none"> - Vacuum system: <ul style="list-style-type: none"> - Main pump - Turbo molecular pump allowing gas flow rate up to 2 ml/min for CI - Ion source: <ul style="list-style-type: none"> - Single source - optimised for EI and CI or exchangeable ion source for EI and CI - Monolithic quadrupole mass filter - Mass range up to 1000 m/z - Resolution (width at half height): 0.5-3.0 u - Collision energy up to 60 eV 			

3

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Minimum dwell time: 1 ms - Maximum number of reactions: 400 - Sensitivity: <ul style="list-style-type: none"> - EI (MRM): 100 fg OFN S/N \geq 1200 - CI (MRM): 100 fg OFN S/N \geq 1000 <p><i>m) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Filaments for EI, 4 pcs. - Filaments for CI, 4 pcs. - Collision gases nitrogen and helium (99.9995% purity): tenderer must provide two years supply of specified gas (preferably by renting refillable cylinders, estimated gas consumption is 3 x 50 l), pressure regulator, gas filters 2 pcs. for each gas - Gas for CI (methane 99.999 %): tenderer must provide two years supply of specified gas (preferably by renting refillable cylinder, estimated gas consumption is 1 x 50 l), pressure regulator, gas filters 2 pcs. - All required tubings, connectors 			
	<p><i>n) Chromatographic control and data management station with software</i></p> <ul style="list-style-type: none"> - Integral, MS Windows compatible software on one PC, for complete control over all the parts of the instrument ((GC) chromatograph, automatic sampler, detector) and over important parameters - gas flows and pressures and temperatures), MRM data base with more than 1000 pesticides and environmental pollutants - The acquisition, deconvolution, evaluation chromatographic 			

B

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<p>data for qualitative and quantitative analysis methods supported by the software itself, and the generation of the corresponding report, allowing instant printing</p> <ul style="list-style-type: none"> - Two LCD monitors: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection <p><i>o) Power supply (UPS)</i></p> <ul style="list-style-type: none"> - For all items 220-240V, 50-60 Hz and uninterruptible power supply of corresponding capacity – sufficient for controlled shut down or minimum operating time of 45 min. 			
Software updates and upgrades	Regular updates and upgrades of software if and when available during one year after provisional acceptance.			
Testing	Testing (verification of functionality) of complete equipment in duration of 3 days and in the presence of representatives of the end user . Provision of performance verification protocols.			
Conformity to regulations and standards	<p>The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.</p> <p>The Tenderer must provide conformity that the item is in compliance with Restriction of Hazardous Substances Directive (RoHS; 2011/65/EU).</p>			

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1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
2.3.	Ultra High Performance Chromatograph (UHPLC) with Diode Array - UV Detector (DAD UV) and high resolution MS/MS spectrometer with on-line SPE sample preparation system, chromatographic control and data management station with software	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
Specification	UHPLC <i>a) One binary or quaternary gradient pump</i> - Up to 4 solvents mixing - Retention time/flow precision: $\leq 0.1\%$ RSD - Settable flow range of 0.01-5 ml/min - Flow accuracy: $\pm 1\%$ or 10 $\mu\text{l}/\text{min}$ - Composition precision: $< 0.15\%$ RSD - Composition accuracy: 0.5% - Compressibility compensation must be user or automatically selectable based on the solvent in use - Pressure range: 1000 bar <i>b) Degasser</i> - Continuous vacuum source (on line) for four channels <i>c) Autosampler</i> - Autosampler injector must offer a flow through				

2

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<p>design with variable injection volume with 80 positions for vials</p> <ul style="list-style-type: none"> - Injections possibility 1 – 100 µl - Injections carry over: < 0.004% - Reproducibility of injections: 1% - Thermostat settable from 4-40 °C, in 1 °C increments <p>d) Thermostated column compartment</p> <ul style="list-style-type: none"> - Capacity: up to three 25 cm columns - Temperature range: up to 90 °C - Accuracy +/-0.5 °C <p>e) Columns</p> <ul style="list-style-type: none"> - Suitable for environmental analysis with C18 and cyanopropyl stationary phase with particle size < 3.5 µm, C18 (I.D. = 2.1 mm, L = 150 mm) 3 pcs. and CN (I.D. = 2.1 mm, L = 150 mm) 3 pcs. - pH range 2-8 - Complete suitable guard column system, for each type of column min. 10 guard columns for each one with two carriers for guard columns <p>f) DAD UV</p> <ul style="list-style-type: none"> - Flow cell with 10 mm path - Wavelength range: 190-600 nm, settable in 1 nm increments - Wavelength accuracy +/- 1.0 nm with self-calibration with deuterium lines, verification with internally located Holmium oxide filter, Erbium filter or similar solution - Data acquisition ≥ 100Hz <p>g) MS/MS spectrometer</p> <ul style="list-style-type: none"> - Quadrupole mass filter, collision cell and high 			

B

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - resolution accurate mass analyser - Scan modes: MS scan, MS/MS with high resolution accurate mass detection - Polarity switching: monitoring of positive or negative ions - Ion sources: electrospray (ESI) and atmospheric pressure chemical ionization (APCI) - Full MS sensitivity: 1 pg of Buspirone or Reserpine injected on column gives the S/N 200:1 - Mass resolution: 40.000 FWHM - Analyzer mass range: 50 - 4000 m/z - Scan rates: 10 Hz - Mass accuracy: 1 ppm (internal calibration) <p><i>h) Accessories</i></p> <ul style="list-style-type: none"> - Divert valve: for directing chromatographic flow either to MS or waste - Syringe pump, with flow rate from 1-1000 µl/min - Two C18 analytical column and one concentration column - Gases required for MS/MS (99.9995% purity): tenderer must provide two years supply of specified gas (preferably by renting refillable cylinders, estimated gas consumption is 4 x 50 l), pressure regulator, gas filters 2 pcs. for each gas - Built-in software library of environmental contaminants with at least 1000 compounds and test mixture of at least 200 compounds 			
	<p><i>i) On-line SPE system</i></p> <ul style="list-style-type: none"> - System with solvent delivery unit and sampling delivery system 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	<ul style="list-style-type: none"> - Effective pumping system with flow rate up to 10 ml/min with increment 0.1 ml/min - Sample volume pre-concentration up to 100 ml - n - port valves system with possibility to use at least two SPE cartridges - Connectable to UHPLC - System allowing derivatisation - Remote control via UHPLC software - Fully controllable via instrument keyboard <p><i>j) Accessories - spare parts</i></p> <ul style="list-style-type: none"> - Minimum 500 pcs. of SPE cartridges suitable for environmental analysis (PLRPS stationary phase or equivalent) <p><i>k) Chromatographic control and data management station with software</i></p> <ul style="list-style-type: none"> - Integral, MS Windows compatible software on one PC, for complete control over all the parts of the instrument (UHPLC) chromatograph, automatic sampler, all detectors and over important parameters (mobile phase flows, pressures and temperatures) - The acquisition and workup of chromatographic data for qualitative and quantitative analysis methods supported by the software itself, and generation of the corresponding report, allowing instant printing. - Two LCD monitors: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz. - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection. <p><i>l) Nitrogen generator</i></p> <ul style="list-style-type: none"> - of appropriate capacity and purity of nitrogen for trace environmental analysis, with integrated air compressor. <p><i>m) Power supply (UPS)</i></p>			

B

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes YES/NO
	- For all items 220-240V, 50-60 Hz and uninterruptible power supply of corresponding capacity – sufficient for controlled shut down or minimum operating time of 45 min.			
Software updates and upgrades	Regular updates and upgrades of software if and when available during one year after provisional acceptance.			
Testing	Testing (verification of functionality) of complete equipment in duration of 3 days and in the presence of representatives of the end user. Provision of performance verification report.			
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer; the item must be affixed by CE marking. The Tenderer must provide conformity that the item is in compliance with Restriction of Hazardous Substances Directive (RoHS; 2011/65/EU).			

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1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.4.	Fully automated analyser for the determination of mercury in liquid samples using technique of cold vapours with atomic fluorescence detection and data management station with software	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
Specification	<p>Mercury analyser</p> <p><i>a) Optical system</i></p> <ul style="list-style-type: none"> - Source of radiation: low pressure Hg lamp with high energy - Fluorescent cell - Fluorescent quartz flow cell with double mirrored windows - Detector: photomultiplier <p><i>b) Hg generator</i></p> <ul style="list-style-type: none"> - Continuous flow mode with manual sample aspiration - Continuous flow mode with autosampler - Possibility to use the amalgamator - Gradual sample enrichment <p><i>c) Flow system</i></p>				

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	<ul style="list-style-type: none"> - Four channel peristaltic pump for the separate transport of reducing agents, acids and waste - A single channel peristaltic pump for sample delivering - Thermostated reactor chamber - Gas - liquid separator - Possibility of drying gas <p>d) Gas</p> <ul style="list-style-type: none"> - Inert gas (99.9995% purity): tenderer must provide two years supply of specified gas (preferably by renting refillable cylinders, estimated consumption is 2 x 50 l), pressure regulator, gas filters, 2 pcs, and tubings <p>e) Accessories - spare parts</p> <ul style="list-style-type: none"> - Reagents support (acid and reduction agent) <p>f) Minimum technical specifications</p> <ul style="list-style-type: none"> - Limit of detection: < 1 ppt without enrichment and < 0.01 ppt with enrichment - Dynamic range: 1 - 100 ng/L - Sample consumption: 1 ml per run - Analysis time: up to 1 min without amalgamation and up to 2 min with amalgamation <p>g) Software</p> <ul style="list-style-type: none"> - MS Windows compatible software on one PC, for complete control over all the parts of the mercury analyser (optical parameters, flows) and automatic sampler - Automatic testing of device features, 		
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	<p>statistical analysis of the results in numerical and graphical form and the generation of the corresponding report, allowing instant printing</p> <ul style="list-style-type: none"> - Two LCD monitors: - 24" wide, resolution (1920 x 1080), time response 5 ms, height adjustable stand - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection <p>b) Autosampler</p> <ul style="list-style-type: none"> - Capacity of at least 30 vials - Automatic sample aspiration - Intelligent dilution in case of exceeding the calibration range - Optimum dilution factor calculated by computer - Automatic calculation of addition of ionisation reagent to calibration solutions and samples - Container with washing solution, container with an additional solution (ionisation agent) - Anticorrosive capillary for sample aspiration - PP beakers for samples, 50 pcs. - Fully controlled by PC <p>i) Power supply (UPS)</p> <ul style="list-style-type: none"> - For all items 220-240V, 50-60 Hz and uninterruptible power supply of corresponding capacity – sufficient for controlled shut down or minimum operating time of 45 min 		
Software updates and	Regular updates and upgrades of software if and		

upgrades	when available during one year after provisional acceptance.			
Testing	Testing (verification of functionality) of complete equipment in duration of two days and in the presence of two representatives of the end user. Provision of the performance verification protocol.			
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.			
Start-up training	Start-up training, to be performed one month after installation and testing for two representatives of the end user for three days. The training must include modules explaining all basic functions of the instrument on a set of standard samples commonly used for the corresponding instrument and detailed usage of the software. The training should be in English or Serbian.			

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.5.	Gel Permeation Chromatograph for preparation of sediment and biota samples Quantity: 1			
	Manufacturer's name:			
	Product type, model:			
Specification	GPC			
	a) Solvent manager			

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	<ul style="list-style-type: none"> - High performance and fully controllable from instrument keyboard - Solvent and sample management capabilities - Number of solvent up to four - Vacuum degas system - Flow rate range 0.01-10 ml/min in 0.001 ml/min increments - System delay volume up to 1000 ul - Plunger seal wash - Programming gradient min. 10 ramps - Dry and wet prime - Maximum operating pressure to 300 bar - Composition range 0.0 to 100%, in 0.1% increments <p><i>b) Sample part</i></p> <ul style="list-style-type: none"> - At least 100 vials - 50 injections per sample vial - Carry over less than 0.1% for caffeine - Possibility of flushing the needle - Injection accuracy: ± 1 ul - Volume of sample via: 1.2 ml - Injection volume range: 0.1 to 100 ul - Sample temperature control - Column heater <p><i>c) UV detector</i></p> <ul style="list-style-type: none"> - Wave range from 190 to 600 nm with accuracy ± 1 nm - Drift $\leq 5 \times 10^{-4}$ AU/h/$^{\circ}$C at 230 nm - Data acquisition up to 80 Hz 			
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	<ul style="list-style-type: none"> - Unattended operation - leak sensor - Deuterium lamp long life - Path length 10 mm - Maximum cell volume 10 ul - Pressure limit up to 800 psi 		
<p>d) Fraction collector</p> <ul style="list-style-type: none"> - Capacity: 60 x 15 ml test tubes - Maximum system flow: 10 ml/min 			
<p>e) Spare parts</p> <ul style="list-style-type: none"> - One deuterium lamp - Tubings and seals - Environmental GPC column for removing lipids and natural resins, 4 pcs. 			
<p>f) Software</p> <ul style="list-style-type: none"> - MS Windows compatible software on one PC, for complete control over all the parts of the GPC - solvent manager, UV detector and fraction collector - Automatic testing of device features and the generation of the corresponding report, allowing instant printing - LCD monitor: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz. - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection 		<p>Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of representatives of the end user. Provision of the performance verification report.</p>	<p>The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking. The Tenderer must provide conformity that the item is in</p>
<p>Testing</p>			
<p>Conformity to regulations and standards</p>			

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	compliance with Restriction of Hazardous Substances Directive (RoHS; 2011/65/EU).			
Start-up training	Start-up training, to be performed after installation and testing, for representatives of the end user for half a day. Training should be in English or Serbian.			
Software updates and upgrades	Regular updates and upgrades of software if and when available during one year after provisional acceptance.			

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.6.	<p>Lyophiliser for preparation of sediment and biota samples</p> <p>Quantity: 1</p> <p>Manufacturer's name:</p> <p>Product type, model:</p>			
Specification	<p>a) Lyophiliser</p> <ul style="list-style-type: none"> - Speed of processing samples min. 3 1/24 hours - Total capacity at least 5 l - Trapping temperature up to -70 °C - Must be complete with vacuum pump (capacity min 135 lpm) and spare parts <p>b) Software</p> <ul style="list-style-type: none"> - MS Windows compatible software on one PC, for complete control over all functions of the lyophiliser - Automatic testing of device features and the generation of the corresponding report, allowing instant printing 			

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	<ul style="list-style-type: none"> - LCD monitor: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz. - Color laser printer: fast printing up to 15 ppm black, 4 ppm color in A4, high speed USB 2.0 connection 			
Software updates and upgrades	Regular updates and upgrades of software if and when available during one year after provisional acceptance.			
Testing	Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of representatives of the end user.			
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.			
Start-up training	Start-up training, to be performed after installation and testing, for representatives of the end user for half a day. Training should be in English or Serbian.			

1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.7.	Vibratory sieve shaker with set of sieves for preparation of sediment samples	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
	Vibratory sieve shaker				
	a) <i>Sieving device with vibrating plate which is adapted for stable support of sieves</i>				
	<ul style="list-style-type: none"> - Digital setting of amplitude with accuracy 0.01 mm - Constant intensity oscillations - Good reproducibility - Vibrating motion with 3D effect - Minimum weight of column 3.5 kg - Digital control of all features (time, amplitude) 				
	b) <i>Spare parts</i>				
	<ul style="list-style-type: none"> - Clamping device - Bottom drip tray 2 pcs. (for wet and dry sieving) - Set of stainless steel sieves (I.D. 200 mm and height 50 mm): <ul style="list-style-type: none"> - mesh 0,025 mm (2 pcs.) - mesh 0,063 mm (2 pcs.) - mesh 0,100 mm (2 pcs.) - mesh 0,150 mm (2 pcs.) - mesh 0,250 mm (2 pcs.) - mesh 0,500 mm (2 pcs.) - mesh 1,000 mm (2 pcs.) 				
Specification					

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	- mesh 2,000 mm (2 pcs)			
Testing	Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of representatives of the end user.			
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.			
Start-up training	Start-up training, to be performed after installation and testing, for representatives of the end user for half a day. Training should be in English or Serbian.			

1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.8.	Mortar grinder with PTFE scarper for preparation of sediment samples	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
Specification	Mortar grinder for sediment <ul style="list-style-type: none"> - High performance grinding and short time of milling - Material feed size to 10 mm - Output particle size – 1 um for dry grinding and 0.1 um for colloidal grinding - Grinding space volume - min. 500 ml - Speed setting from 100 - 650 min⁻¹ - Power to 1250 W - Motor noise to 85 dB a) Spare parts <ul style="list-style-type: none"> - Mincing container stainless steel - Scarper made from PTFE, stainless steel 				
Testing	Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of representatives of the end user.				
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.				

Start-up training	Start-up training, to be performed after installation and testing, for representatives of the end user for half a day. Training should be in English or Serbian.			
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1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.9.	Inverted microscope with phase contrast with camera and image analysis for phytoplankton analysis	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
Specification	Inverted microscope a) <i>Optical system – trinocular for light field, DIC contrast and phase contrast</i> <ul style="list-style-type: none"> - Main body with both end support stage - Sextuple nosepiece coded - Infinity corrected optical system - Vertical objective movement - Eyepieces with diopter adjustment 10x - depending on the eyepiece and auxilliary objectives used - Halogen lamp min 12V -100W - Condenser: LD N.A 0.55 h, Ph1, Ph2, Ph3, DIC, DIC - CFI Objectives Achromat 5x/0,15 Ph1, LD 10x/0,25 Ph1, - CFI objectives for phase contrast and DIC contrast LD 20x/0,40Corr, LD 40x/0.60 Corr and LD 63x/0.75 Corr - Immerse objective 100 x/1.30 - Objective 100x/0.8 dry - Filters (green, blue) - Slide glass holder - Terasaki holder 				

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	<ul style="list-style-type: none"> - Additional magnification 1,25x, 1,6x and 2,5x coded b) Camera - Minimum 5 Mpixel, 2/3" sensor CCD, and image analysis system c) Software for acquisition and simple image analyses - Extended focus - Measurement - Multi-channel - Supporting of motorized and coded functions of microscope d) PC - 4-core processor - 8 GB DDR3-RAM - Monitor 24" TFT 1600 x 1200 or 1920 x 1080 - Hard disks: 2 TB SATA2 and 250 GB SATA2 - DVD-ROM drive - 1x free PCI slot 5 V, 32 bit, non-shared interrupt, to insert camera interfaces - 2x Firewire IEEE 1394a interface - 4x serial interfaces (COM1-COM4) - 4x USB interfaces - 64-bit operating system, installed, native to application offered in 2.9 		
Testing	Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of two representatives of the end user.		
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.		

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Start-up training	Start-up training, to be performed after installation and testing, for 3 representatives of the end user for a day. Training should be in English or Serbian.			
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1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.10.	Stereomicroscope with gooseneck type cold light and transmitted light (light field, dark field and oblique illumination) with camera and image analysis for analysis of benthic invertebrates	Quantity: 1			
	Manufacturer's name:				
Specification	<p>Product type, model:</p> <p>Stereoscopic microscope</p> <p><i>a) Optical system: binocular</i></p> <ul style="list-style-type: none"> - Total magnification depending on the eyepiece and auxiliary objectives used: <ul style="list-style-type: none"> - Min.: 3,35 - Max.: 300x - 6,5x.....50x approx. - Working distance: min. 115 mm - Eyepieces with diopter adjustment: 10x - Zoom ratio: at least 7,5:1 - Transmitted light (cold light or LED): light field, dark field and oblique illumination - Stand with footprint min 250 x 300 mm <p><i>b) Gooseneck type cold light or LED</i></p> <ul style="list-style-type: none"> - Source of the cold light (230 V) - Double gooseneck (mean D=4 mm, L=550 mm) - Filter holder, curling light, polarisation filter, light bulb 				

	<p>c) Camera</p> <ul style="list-style-type: none"> - Minimum 5 Mpixel, 2/3" sensor CCD - Image analysis system <p>d) Software for acquisition and simple image analyses</p> <ul style="list-style-type: none"> - Extended focus - Measurement - Multi-channel - Supporting of motorized and coded functions of microscope <p>e) PC</p> <ul style="list-style-type: none"> - 4-core processor - 8 GB DDR3-RAM - Monitor 24" TFT 1600 x 1200 or 1920 x 1080 - Hard disks: 2 TB SATA2 and 250 GB SATA2 - DVD-ROM drive - 1x free PCI slot 5 V, 32 bit, non shared interrupt, to insert camera interfaces - 2x Firewire IEEE 1394a interface - 4x serial interfaces (COM1-COM4) - 4x USB interfaces - 64-bit operating system, installed 		
Testing	Testing (verification of functionality) of complete equipment in duration of half a day and in the presence of representatives of the end user.		
Conformity to regulations and standards	The Tenderer must provide Declaration of conformity (DoC) from the manufacturer, the item must be affixed by CE marking.		
Start-up training	Start-up training, to be performed after installation and testing, for representatives of the end user for one day. Training should be in English or Serbian.		

B

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1. Item Number	2. Specifications Required		3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.11.	Standards, solvents and chemicals	Quantity: 1			
	Manufacturer's name:				
	Product type, model:				
	Item	Quantity			
Specification					
2.11.1.	Pesticides and biocides mixture (as in the EQS Directive*): - Components: atrazine; alachlor; chlorfenvinphos; chlorpyrifos (chlorpyrifos-ethyl); cyclodiene pesticides (aldrin; isodrin; dieldrin; endrin); endosulfan-alpha, beta; DDE-4,4'; DDD-4,4'; DDT-2,4'; DDT-4,4'; hexachlorocyclohexane-alpha, beta, gamma, delta; simazine; trifluralin; bifenoxy; cybutyryne; cypermethrin; dicofof; dichlorvos; heptachlor and heptachlor epoxide; irgarol; quinoxyfen; terbutryn - Water miscible solvent: methanol, acetone, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration: 100 mg/L of each - Purity: 99% each	1			
2.11.2.	Internal standard for the Pesticides and biocides mixture: - Deuterated propazine - Water miscible solvent:	1			

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	<ul style="list-style-type: none"> - methanol, acetonitrile - Volume: minimum 1 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% 				
2.11.3.	<p>PAHs mixture (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Components: anthracene; naphthalene; phenanthrene; fluoranthene; pyrene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(123-cd)pyrene; benzo(g,h,i)perylene - Additionally to the EQS Directive substances: fluorene and chrysene - Water miscible solvent methanol, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% each 	1			
2.11.4.	<p>Internal standard for the PAHs mixture:</p> <ul style="list-style-type: none"> - Deuterated phenanthrene - Water miscible solvent: methanol, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% 	1			
2.11.5.	<p>Industrial pollutants mixture (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Components: hexachlorobenzene; di(2-ethylhexyl)phthalate (DEHP); nonylphenols (CAS No. 84852-15-3); 4-nonylphenol (CAS No. 	1			

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	<ul style="list-style-type: none"> - 104-40-5); (4-(1,1,3,3'-tetramethylbutyl)-phenol); pentachlorobenzene - Water miscible solvent: methanol, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99 % each 				
2.11.5.	<p>Octylphenols (CAS No. 1806-26-4);</p> <ul style="list-style-type: none"> - Volume: minimum 1 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99 % each 	1			
2.11.6.	<p>Pentachlorophenol (as in the EQS Directive*);</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% 	1			
2.11.7.	<p>Internal standard 2,3,4,6-Tetrachlorophenol</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% <p>Derivatization agent: acetic anhydride</p> <ul style="list-style-type: none"> - Assay min. 99% - Volume: 1 l 	1			
2.11.8.	<p>C₁₀₋₁₃ Chloroalkanes (as in the EQS Directive* or Chloroparaffin C10-C13 with chlorine saturation 55.5%Cl):</p> <ul style="list-style-type: none"> - Volume: 10 ml - Stored in: Certan vial 	1			

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	<ul style="list-style-type: none"> - Concentration 100 mg/L - Purity: 99% 				
2.11.9.	<p>Brominated diphenylethers (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99% 	1			
2.11.10.	<p>Tributyltin cation (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: minimum 1ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99 % 	1			
2.11.11.	<p>Hexabromocyclododecane (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: 10ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99 % 	1			
2.11.12.	<p>PCDFs individual solutions:</p> <p>2,3,7,8-T4CDF (CAS 51207-31-9); 1,2,3,7,8-P5CDF (CAS 57117-41-6); 2,3,4,7,8-P5CDF (CAS 57117-31-4); 1,2,3,4,7,8-H6CDF (CAS 70648-26-9); 1,2,3,6,7,8-H6CDF (CAS 57117-44-9); 1,2,3,7,8,9-H6CDF (CAS 72918-21-9); 2,3,4,6,7,8-H6CDF (CAS 60851-34-5); 1,2,3,4,6,7,8-H7CDF (CAS 67562-39-4); 1,2,3,4,7,8,9-H7CDF (CAS 55673-89-7); 1,2,3,4,6,7,8,9-O8CDF (CAS 39001-02-0)</p>	1			

3

	<ul style="list-style-type: none"> - Volume: minimum 1 ml - Stored in: Certan vial - Concentration 50 mg/L of each - Purity: 99% each 				
2.11.13.	<p>Volatife organic compounds (VOC) mixture (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Components: benzene; carbon-tetrachloride; 1,2-dichloroethane; dichloromethane; hexachlorobutadiene; naphthalene; tetrachloroethylene; trichloroethylene; 1,3,5,-trichlorobenzene; 1,2,4,-trichlorobenzene; 1,2,3,-trichlorobenzene; trichloromethane - Water miscible solvent: methanol - Volume: 10 ml - Stored in: Certan vial - Concentration 100 mg/L of each - Purity: 99% each 	1			
2.11.14.	<p>Internal standard for the VOC mixture</p> <ul style="list-style-type: none"> - Components: 1,4-dichlorobenzene-d4 - Water miscible solvent: methanol - Volume: 10 ml - Stored in Certan vial - Concentration 100 mg/L - Purity: 99% 	1			
2.11.15.	<p>Perfluorooctane sulfonic acid and its derivatives (PFOS) (CAS 1763-23-1) (as in the EQS Directive*):</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: 10ml - Stored in: Certan vial - Concentration 100 mg/L - Purity: 99 % - Volume: 10 ml 				

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2.11.16.	<p>PCDDs individual solutions:</p> <p>2,3,7,8-T4CDD (CAS 1746-01-6); 1,2,3,7,8-P5CDD (CAS 40321-76-4); 1,2,3,4,7,8-H6CDD (CAS 39227-28-6); 1,2,3,6,7,8-H6CDD (CAS 57653-85-7); 1,2,3,7,8,9-H6CDD (CAS 19408-74-3); 1,2,3,4,6,7,8-H7CDD (CAS 35822-46-9); 1,2,3,4,6,7,8,9-O8CDD (CAS 3268-87-9)</p> <ul style="list-style-type: none"> - Volume: minimum 1 ml - Stored in: Certan vial - Concentration 50 mg/L of each - Purity: 99% each 	1		
2.11.17.	<p>PCB-DLs mixture:</p> <p>3,3',4,4'-T4CB (PCB 77, CAS 32598-13-3); 3,3',4',5-T4CB (PCB 81, CAS 70362-50-4); 2,3,3',4,4'-P5CB (PCB 105, CAS 32598-14-4); 2,3,4,4',5-P5CB (PCB 114, CAS 74472-37-0); 2,3',4,4',5-P5CB (PCB 118, CAS 31508-00-6); 2,3',4,4',5'-P5CB (PCB 123, CAS 65510-44-3); 3,3',4,4',5-P5CB (PCB 126, CAS 57465-28-8); 2,3,3',4,4',5-H6CB (PCB 156, CAS 38380-08-4); 2,3,3',4,4',5'-H6CB (PCB 157, CAS 69782-90-7); 2,3',4,4',5,5'-H6CB (PCB 167, CAS 52663-72-6); 3,3',4,4',5,5'-H6CB (PCB 169, CAS 32774-16-6); 2,3,3',4,4',5,5'-H7CB (PCB 189, CAS 39635-31-9)</p> <ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: 4 ml - Stored in: Certan vial - Concentration 10 mg/L of each - Purity: 99% each 	1		
2.11.18.	<p>Isoproturon, diuron, 17-alpha-ethinyloestradiol, 17beta-estradiol</p>			

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	<ul style="list-style-type: none"> - Water miscible solvent: methanol, acetonitrile, acetone - Volume: 10ml - Stored in: Certan vial - Concentration 100 mg/L of each - Purity: 99 % 					
2.11.19.	Dichloromethane, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.02% 	201				
2.11.20.	Acetone, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.1% 	201				
2.11.21.	Methanol, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.1% 	101				
2.11.22.	Ethylacetate, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.05% 	101				
2.11.23.	Acetonitrile, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.05% 	201				
2.11.24.	Isopropyl alcohol, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.1% 	201				
2.11.25.	Isooctane, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.1% 	21				
2.11.26.	Cyclohexane, pesticide grade <ul style="list-style-type: none"> - Assay Min.: 99.5% - Water Max.: 0.1% 	21				
2.11.27.	n – Hexane , pesticide grade <ul style="list-style-type: none"> - Assay Min.: 95% 	101				
2.11.28.	Methanol , pesticide grade <ul style="list-style-type: none"> - Assay Min.: 95% 	101				
2.11.29.	Acetone, technical grade	201				

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	- Assay Min.: 95%				
2.11.30.	Ethyl alcohol, technical grade - Assay Min.: 95%	50 l			
2.11.31.	Anhydrous sodium sulfate - Assay Min.: 99%	10 kg			
2.11.32.	Sodium chloride - Assay Min.: 95%	20 kg			
2.11.33.	Acetic acid (100%) - Assay Min.: 99%	5 l			
2.11.34.	Sulfuric acid, concentrated - Assay Min.: 98%	2 l			
2.11.35.	Hydrochloric acid, concentrated - Suitable for mercury determination	2 l			
2.11.36.	Sodium borohydride for AAS - Assay Min.: 99%	1 kg			
2.11.37.	L-ascorbic acid - Assay Min.: 98%	1 kg			
2.11.38.	Potassium bromide - Assay Min.: 90%	1 kg			
2.11.39.	Potassium bromate - Assay Min.: 90%	1 kg			
2.11.40.	Potassium hydrogen carbonate - Assay Min.: 95%	5 kg			
Conformity to regulations and standards	The Tenderer must provide SAFETY DATA SHEET for each item according to regulation (EC) No.1907/2006 (REACH).				

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Training

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
2.12.	<p>General Requirements Tenderer will be solely responsible for provision of all training related services at the venue of the beneficiary, products, equipment and documentation.</p> <p>General Objectives The main objective of training courses is to educate analytical specialists able to work independently with high-tech instruments. Trainees must be able to use, edit and validate introduced methodology for specific instrument for which they were trained.</p> <p>Training Plan</p> <ul style="list-style-type: none"> The Tenderer must submit as part of the offer training plan with minimum following: Detailed training program (overview, objectives, offered syllabus, offered materials, trainee prerequisites, etc.). Tenderer must provide a detailed description of the organisation of the proposed service including names and proof of qualification of the trainers (examples of previous relevant professional experience, years of experience). Selected trainers must prove that they fulfill required qualification (at least 10 years experience in the field of environmental analysis and 5 years practical experiences for selected applications). Tenderer must offer on-line technical and troubleshooting support in case of any problems. Education should be in English or Serbian. <p>Training Materials</p> <ul style="list-style-type: none"> Materials must be provided on min. one electronic media and in min. one duplex printed bonded hard-copy per trainee. 			

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1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
	<ul style="list-style-type: none"> Materials must be delivered in adequate quantities for all trainees at least three days before the training begins. 			
	<ul style="list-style-type: none"> Materials must include min. training syllabus overall description, detailed description of theory (lectures) and step-by-step instructions (exercises), training sample data (electronic media only) and training software/procedures/scripts exercises (electronic media only). 			
	<p>Training Methodologies</p>			
	<ul style="list-style-type: none"> Implemented methods must comply with principles outlined in EN ISO 17025 and QA/QC Directive 2009/90/EC. 			

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1. Item Number	2. Specifications Required			5. Evaluation Committee's notes	
	Training Course	Type of Training	Syllabus - minimum requirements		
		Training Methods	Course Duration		
2.12.1.	Training courses for Item 2.1.1.	On-site training	Minimum 70 days, starting with 20 uninterrupted working days following delivery and installation/commissioning of all supplies and then 5 days per month in the following 10 months	<ul style="list-style-type: none"> Start up training for two representatives of the end user including all basic functions of the instrument on a set of standard samples, commonly used for the corresponding instrument. Separately education for GC, sample preparation, GC-MS and GCxGC software, with special attention to library usage. Method development for analysis of selected WFD priority substances with special attention to analysis of: <ul style="list-style-type: none"> C10-13 chloroalkanes; PCDDs, PCDFs, PCB-DL; PBDEs. Method development for screening of complex environmental samples. Validation of the method at the laboratory level. Analysis of minimum 100 surface water samples from the national monitoring programme. 	4. Notes, remarks, ref to documentation
3. Specifications Offered					

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2. Specifications Required			
1. Item Number	Training Course	Type of Training	
		Training Methods	Course Duration
2.12.2.	Training courses for Item 2.2.	On-site training	Minimum 35 days, starting with 10 uninterrupted working days following delivery and installation/commissioning of all supplies and then 5 days per two months in the following 10 months
<p style="text-align: center;">Syllabus - minimum requirements</p> <ul style="list-style-type: none"> • Start up training for two representatives of the end user including all basic functions of the instrument on a set of standard samples, commonly used for the corresponding instrument. • Separately education for GC, sample preparation, MS-MS and software, with special attention to library usage. • Method development for analysis of selected WFD priority substances: <ul style="list-style-type: none"> ○ group of pesticides, ○ group of polyaromatic compounds, ○ group of industrial compounds, ○ group of phenolic compounds, ○ group of volatile compounds, ○ pharmaceutical compounds. • Validation of the method at the laboratory level. <ul style="list-style-type: none"> ○ Analysis of minimum 100 surface water samples from the national monitoring programme 			
3. Specifications Offered		4. Notes, remarks, ref to documentation	
		5. Evaluation Committee's notes	

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1. Item Number	2. Specifications Required			5. Evaluation Committee's notes	
	Training Course	Type of Training	Course Duration		
	Training Methods	Number of trainees			
2.12.3.	Training courses for Item 2.3.	On-site training	Min. 3-4 representatives of the end user (2 permanently employed/senior staff and one or two junior staff members)	<p>Minimum 70 days, starting with 20 uninterrupted working days following delivery and installation/commissioning of all supplies and then 5 days per month in the following 10 months</p>	<p>Syllabus - minimum requirements</p> <ul style="list-style-type: none"> • Start up training for two representatives of the end user for 5 days including all basic functions of the instrument on a set of standard samples, commonly used for the corresponding instrument. • Separately education for UHPLC, sample preparation, MS-MS and software, with special attention to identification of unknown substances. • Method development for analysis of selected WFD priority substances with focus on non-GC-amenable substances: <ul style="list-style-type: none"> ○ group of urea compounds, ○ group of pesticides, ○ group of sterols ○ group of PFOS. • Validation of the methods at the laboratory level. <ul style="list-style-type: none"> ○ Analysis of minimum 100 water samples from the national monitoring programme.
3. Specifications Offered				4. Notes, remarks, ref to documentation	

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