

**ANNEX II + III: TECHNICAL SPECIFICATIONS + TECHNICAL OFFER**

**Contract title: Supply of equipment for water quality monitoring**

**Publication reference: NEAR/BEG/2023/EA-OP/0173**

**Annex 1 to Corrigendum no.1 replaces version published on September 5<sup>th</sup> 2023**

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

- Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
- Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words 'compliant' or 'yes' are not sufficient)
- Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offered specifications.

**Unless otherwise specified, the requirements in these Technical Specifications are presented as a minimum standard which the offered goods must meet.**

## LIST OF ABBREVIATIONS

CV	Coefficient of Variation
IC	Inorganic Carbon
LOD	Limit of detection
NDIR	Non-dispersive infrared
PC	Personal computer
POC	Purgeable Organic Carbon
TOC/TN	Total organic carbon/Total nitrogen
UHPLC	Ultra High Performance Liquid Chromatography
IDL	Instrument Detection Limit
RRHD	Rapid Resolution High Definition
ABS	An absorbance value
TDS	Total dissolved solids
GLP	Good Laboratory Practice

1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
1	TOC/TN Analyzer	Quantity: 3			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
1.1	<p>TOC/TN Unit:</p> <ul style="list-style-type: none"> <li>• TOC analyzer based on the principle of catalytic oxidation at a temperature of 680 °C with platinum as a catalyst; detection of generated CO<sub>2</sub> by non-dispersive infrared detection (NDIR).</li> <li>• TN analyzer for determination of total nitrogen based on combustion at 700°C; detecting the created NO using a chemiluminescence detector</li> <li>• To determine: TC, IC, TC-IC, TOC (NPOC), TN; upgradeability for direct POC measurement</li> <li>• Measuring range for total carbon determination: 4 µg/L - 30,000 mg/L</li> <li>• Measuring range for nitrogen determination: 5 µg/L -10,000 mg/L</li> <li>• Automatic dilution of the sample from 2 to 50 times inside the syringe</li> <li>• Detection limit of TOC analyzer: 4 µg/L; detection limit of TN analyzer: 5 µg/l</li> <li>• The analyzer should be able to measure TOC and TN simultaneously</li> <li>• Reproducibility of the TOC analyzer: CV 1.5%</li> <li>• Injection volume variable from 10 to 2000 µL</li> <li>• Measurement time of TN: up to 5 minutes</li> <li>• Carrier gas: highly purified air</li> <li>• Sample injection: Automatic sample collection using a syringe and slide injection mechanism</li> <li>• The analyzer should have a closed injector system for pre-preparation of samples that enables blowing of the sample, dilution of the sample and automatic addition of acid inside the injector syringe.</li> <li>• The analyzer must have the ability to create a calibration curve from a single standard solution by automatically diluting the initial solution</li> </ul>				

1. Item number	2. Specifications required	3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
1.2	<p>AUTOSAMPLER:</p> <ul style="list-style-type: none"> <li>• 60 positions with vials from 30 mL to 50 mL</li> <li>• Parallel blowing inside one vial and measurement inside another vial, and the addition of acid</li> <li>• 100 vials with caps and septa should be delivered with the autosampler</li> </ul>			
1.3	<p>UNIT FOR SOLID SAMPLES:</p> <ul style="list-style-type: none"> <li>• The unit should enable the measurement of TC, IC and TOC in a solid sample</li> <li>• The unit should allow measurement of TC up to 30 mg C</li> <li>• Catalytic oxidation of TC at temperatures up to 900°C</li> </ul>			
1.4	<p>APPLICATION SUPPORT:</p> <ul style="list-style-type: none"> <li>• Control of the entire system (basic and additional units, autosampler), storage and printing of measurement data and methods</li> <li>• Display of the current temperature in the oven and on the NDIR detector; display of carrier gas flow and pressure</li> <li>• The possibility of setting of 3 calibration curves for the measured sample with the selection of the optimal calibration curve</li> <li>• Automatic change of measurement conditions and re-measurement of the sample leaving the calibration area</li> <li>• Sample recalculation with another calibration curve</li> <li>• Automatic restart of the instrument on the specified day and time</li> <li>• PC and monitor for controlling the instrument through the offered software support</li> </ul>			

1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
2	<b>Liquid chromatograph UHPLC/MS/MS</b>		<b>Quantity: 1</b>		
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
2.1	UHPLC: <ul style="list-style-type: none"> <li>• PUMP 1200 Bar or higher; binary pump, flow range 0.001-5.000ml/min, in 0.001ml/min increments; flow precision ≤0.07% RDS</li> <li>• AUTOSAMPLER pressure range 1200 bar or higher, volume range 0.1-20µl, in steps of 0.1µl; injection precision ≤0.15% RDS; 20µL injection loop; Capacity: 400 samples</li> <li>• MULTICOLUMN THERMOSTAT Capacity for 4 x 100mm columns. Dual zone cooling and heating with temperature range from 4°C to 100°C</li> </ul>				
2.2	MASS SPECTROMETER: <ul style="list-style-type: none"> <li>• Scan type - Full scan MS, Selected Ion Monitoring Q1 and Q3, Product Ion Scan, Precursor Ion Scan, Neutral Loss or Gain Scan</li> <li>• Multiple Reaction Monitoring (MRM)</li> <li>• Mass range (m/z): 5 to 2000 Da</li> <li>• Polarity Switching: 25 msec</li> <li>• The instrument must have a dynamic range of 6 orders of magnitude from the limit of detection (LOD).</li> <li>• Mass scan rate: 15500 Da/sec</li> <li>• MRM dwell time must be 0.5 msec</li> <li>• Atmospheric pressure chemical ionization (APCI) source</li> <li>• Electrospray ionization (ESI) source</li> <li>• MRM acquisition rate: 500 MRM/sec</li> <li>• Positive Mode Sensitivity - Using the probe in MRM mode for a 1 pg reserpine injection on column, the instrument must have a S/N &gt; 750,000:1</li> <li>• Negative Mode Sensitivity - Using the probe in MRM mode for a 1 pg chloramphenicol injection on column, the instrument must have a S/N &gt; 750 000:1</li> </ul>				

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"> <li>MRM sensitivity IDL ESI positive measured 10 fg of reserpine injected on column, IDL &lt;3.5 fg</li> <li>MRM sensitivity IDL ESI negative measured 10 fg of chloramphenicol injected on column: IDL &lt;4 fg</li> </ul>			
2.3	<p><b>SOFTWARE AND COMPUTER</b></p> <ul style="list-style-type: none"> <li>Brand name PC, monitor and printer according to the manufacturer's recommendation, operating system in accordance with the requirements of the manufacturer of the equipment</li> <li>Single point of control of complete UHPLC/MS/MS includes acquisition, data analysis, and reporting</li> <li>Time programming: Dynamic and triggered MRM to align MRMs with compound retention time, Scan, SIM, MRM</li> <li>Automatic optimization of ionic optics and calibration of masses with internal tune solution, software controlled.</li> <li>The UHPLC/MS/MS software should continuously monitor the use of system components with electronic error saving, to have a warning function for users to reach the limit values for the wearing components of the UHPLC/MS/MS system.</li> <li>Set of tools necessary for maintenance of the appliance - 1 set</li> <li>Pesticide and PFAS MRM database</li> </ul>			
2.4	<p><b>ADDITIONAL NECESSARY PARTS</b></p> <ul style="list-style-type: none"> <li>Nitrogen generator with compressor for high purity nitrogen for LC MS, capacity 35 l/min</li> <li>Four columns RRHD C18 100x2,1mm, 1,7-1,8 µm</li> </ul>			
<b>3</b>	<b>Fully automated SPE Unit</b>	<b>Quantity: 1</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
3.1	<ul style="list-style-type: none"> <li>Processing of 8 samples in parallel</li> <li>Compatible with 1mL, 3mL and 6mL SPE cartridges</li> <li>2 fractions and 2 waste channels</li> <li>Support for 6 solvents mixing</li> <li>Sample volume range: 0.5 to 4000 mL</li> </ul>			

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"> <li>Fraction volume up to 50 mL</li> <li>Flow rate range: 1- 50 mL/min</li> <li>Column blockage detection</li> <li>Rinsing of sample containers with solvents</li> <li>Touchscreen 4"</li> <li>Support for 100 application methods, including EPA Method 533, EPA Method 537/537.1, DoD QSM Table B-15, ISO 21675</li> </ul>			
<b>4</b>	<b>Analytical Balance</b>	<b>Quantity: 6</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
4.1	<ul style="list-style-type: none"> <li>Maximum capacity: 220g</li> <li>Readability: 0.1 mg</li> <li>Minimum load: 10 mg</li> <li>Repeatability: 0.2 mg</li> <li>Linearity: ± 0.3 mg</li> <li>Stabilization time: up to 3 s</li> <li>Automatic internal adjustment in the case of a temperature change <math>\geq 2</math> °C</li> <li>Weighing plate made of stainless steel, diameter 90mm</li> </ul>			
<b>5</b>	<b>Laboratory UV/Vis spectrophotometer</b>	<b>Quantity: 3</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
5.1	<ul style="list-style-type: none"> <li>Double beam spectrophotometer</li> <li>Wavelength range: 190 to 1100 nm</li> <li>Light source: deuterium lamp and halogen lamp</li> <li>Detector: Silicon photodiode</li> <li>Photometric operating range: ± 4 Abs or wider</li> </ul>			

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"> <li>• Spectral bandwidth: 1nm or less</li> <li>• Wavelength accuracy: maximum <math>\pm 0.1</math> nm (at 656.1 nm)</li> <li>• Wavelength repeatability: maximum <math>\pm 0.05</math> nm</li> <li>• Stray light: 0.006% at 220 nm (NaI) 0.005 % at 340 (NaNO<sub>2</sub>) 0.15 % at 198 nm (KCl)</li> <li>• Photometric accuracy at 1 Abs: <math>\pm 0.002</math> Abs</li> <li>• Photometric repeatability at 1 Abs: <math>\pm 0.0002</math> Abs</li> <li>• Photometric noise (at 500 or 700 nm): 0.00001 Abs</li> <li>• Scanning speed: 28000 nm/min</li> <li>• Standalone and computer controlled operation</li> <li>• Supported measurement modes: spectrum, quantification and kinetic</li> <li>• Pass/fail results analysis for the evaluation of the collected data</li> <li>• Checking the lamp usage time</li> <li>• Ability to set the specific instrument start time</li> <li>• Bar-code reader and external keyboard support</li> <li>• Accessories: 2x quartz cuvettes with 10mm optical path, computer and a monitor sufficient for the functioning of the offered instrument</li> </ul>			
<b>6</b>	<b>Technical Balance</b>	<b>Quantity: 3</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
6.1	<ul style="list-style-type: none"> <li>• Maximum capacity: 2200 g</li> <li>• Readability [d]: 0.01 g</li> <li>• Minimum load: 0.5 g</li> <li>• Repeatability: 0.01 g</li> <li>• Linearity: 0.01 g</li> <li>• Stabilization time: up to 2 s</li> <li>• Automatic internal adjustment in the case of a temperature change <math>\geq 2</math> °C</li> <li>• Weighing plate made of stainless steel, dimensions 180x160 mm</li> </ul>			



1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
7	<b>pH meter</b>	<b>Quantity: 3</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
7.1.	<ul style="list-style-type: none"> <li>• Benchtop meter for pH, mV, temperature, conductivity, saturation, concentration, salinity, TDS</li> <li>• Temperature compensation</li> <li>• Calibration points: 1 – 5</li> <li>• Calibration records: Up to 10</li> <li>• Calibration timer: 1 - 999 days</li> <li>• Memory for 4000 data sets</li> <li>• USB connectivity</li> <li>• Graphic Display</li> <li>• GLP support</li> <li>• Delivered with stand, power supply, glass ATC pH IDS electrode and buffer solutions</li> </ul>				
8	<b>Conductometer</b>	<b>Quantity: 3</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
8.1	<ul style="list-style-type: none"> <li>• Benchtop meter for conductivity, salinity, TDS</li> <li>• Temperature compensation</li> <li>• GLP support</li> <li>• Calibration records: Up to 10</li> <li>• Conductivity ranges: 0.00 - 1000 mS/cm ± 0.5 % of meas. val.  0.000 - 1.999 µS/ cm, K = 0.01 cm<sup>-1</sup>  0.000 - 1.999 µS/cm, K = 0.01 cm<sup>-1</sup>  0.00 - 19,99 µS/cm, K = 0.1 cm<sup>-1</sup></li> <li>• Specific resistance: 0.00 - 199.9 MΩcm</li> <li>• Salinity range: 0.0 - 70.0 (nach IOT)</li> </ul>				

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"> <li>• TDS range: 1 - 1999 mg/l</li> <li>• Temperature: -5.0 - 105.0 °C ± 0.1 °C</li> <li>• Memory for 5000 records</li> <li>• USB connectivity</li> <li>• LCD Display</li> <li>• Delivered with Conductivity probe made of graphite with range 1 µS/cm - 2000 mS/cm</li> </ul>			
<b>9</b>	<b>Laboratory Dryer</b>	<b>Quantity: 3</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
9.1	<ul style="list-style-type: none"> <li>• Drying and heating chamber</li> <li>• Temperature range: from +5 °C above ambient temperature to +300 °C</li> <li>• Interior volume: 110 L</li> <li>• Shelves: 2 pieces, 30 Kg load per each shelf</li> <li>• Heat up time to 150 °C: up to 50 minutes</li> <li>• Temperature fluctuation at 150 °C: maximum 0.5 K</li> <li>• Temperature uniformity at 150 °C: maximum 1.5 K</li> <li>• LCD Display</li> <li>• Door with handle</li> <li>• USB Port for data recording</li> <li>• Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm</li> </ul>			
<b>10</b>	<b>Fume hood</b>	<b>Quantity: 3</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			

1. Item number	2. Specifications required	3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
10.1	<ul style="list-style-type: none"> <li>• Certified by the standards 14175-2-3-4-5-6-7</li> <li>• Structure wholly made up of metal and coated with epoxy anti-acid paint</li> <li>• Dimensions: 1500 x 900 x 2500 mm ± 5%</li> <li>• Cabinet should have independent suction connection with monitoring of air flow, switch for light and fan</li> <li>• Blower: Polypropylene housing, Single-phase, IP55, 0.18 KW</li> <li>• Wall drip cup and water tap</li> <li>• Two 16A sockets + thermal switch</li> <li>• Fitted with 2 under bench safety cabinets for acid bases certified to EN14727 and safety cabinet for flammable certified as TYPE 90 to EN 14470-1</li> </ul>			

1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
11	Digital burette 50 ml	Quantity: 35			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
11.1.	<ul style="list-style-type: none"> <li>• Bottle-top burette with angled display</li> <li>• Titration of medium in a continuous and pulse-free manner</li> <li>• Simple-to-use calibration function</li> <li>• Accuracy according to DIN EN ISO 8655-3 <math>\leq \pm 0.2\%</math> at 50 ml</li> <li>• Coefficient of variation according to DIN EN ISO 8655-3 <math>\leq \pm 0.1\%</math> at 50 ml</li> <li>• Telescopic discharge tube which can be adjusted height and length</li> <li>• Rotates freely 360° on bottle</li> <li>• Supplied with GL 45 connecting threads and GL 32, GL 38 and S 40 PP thread adapters, filling and discharge tubes</li> </ul>				
12	Vacuum Pump	Quantity: 8			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
12.1	<ul style="list-style-type: none"> <li>• Diaphragm type</li> <li>• Should be chemical resistant</li> <li>• With pumping speed: 12 l/min</li> <li>• With vacuum regulator, dial gauge and liquid trap</li> <li>• End vacuum: 100 mbar</li> <li>• Hose adapter: DN 6</li> </ul>				

1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
13	<b>Vacuum filtration Unit</b>	<b>Quantity: 8</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
13.1	<b>FILTER FLASKS</b> <ul style="list-style-type: none"> <li>• Erlenmeyer shape capacity 2l</li> <li>• Made of DURAN® glass with heavy wall for vacuum use</li> <li>• DIN 12476 and ISO 6556 certification</li> <li>• Delivered with PBT tubing connection and silicone (VMQ) seal</li> </ul>				
13.2	<b>FILTER FLASK ADAPTER</b> <ul style="list-style-type: none"> <li>• Made of EPDM</li> <li>• For filter flasks 2l</li> <li>• Centres the funnel and flask</li> <li>• Tight seal with applied vacuum</li> <li>• Protection for glass filter flask rims</li> </ul>				
13.3	CERAMIC BUCHNER FUNNEL 150 mm				
14	<b>Laboratory Heater</b>	<b>Quantity: 3</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
14.1	<ul style="list-style-type: none"> <li>• Serial heating unit with 6 x 85-mm hotplates</li> <li>• Each hotplate should be individually adjustable</li> <li>• Maximum temperature: 425 °C</li> <li>• Rated power input: 2700 W</li> <li>• Mains switch and indicator lamp</li> <li>• Surge protection circuit breaker for each hotplate.</li> </ul>				

1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
15	Pipette, volume 0.1-1.0 ml	Quantity: 25			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
15.1	<ul style="list-style-type: none"> <li>• Single-channel pipette</li> <li>• Volume: 0.1 – 1 ml, 1 µl increments</li> <li>• Accuracy at 50% of nominal volume: ± 5 µL, ± 1%</li> <li>• Precision at 50% of nominal volume: ± 1 µL, ± 0.2%</li> <li>• Accuracy at 10% of nominal volume: ± 3 µL, ± 3%</li> <li>• Precision to 10% of nominal volume: ± 0.6 µL, ± 0.6%</li> <li>• Precision with nominal volume: ±2 µl</li> <li>• Precision with nominal volume: ±0.2 %</li> <li>• ISO 8655 certificate</li> <li>• Can be autoclaved at 121°C, either in complete or in dismantled state</li> </ul>				
16	Pipette, volume 0.5-10.0 ml	Quantity: 25			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				

1. Item number	2. Specifications required	3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
16.1	<ul style="list-style-type: none"> <li>• Single-channel pipette</li> <li>• Volume: 0.5 – 10 ml</li> <li>• Accuracy with 50% of nominal volume: <math>\pm 40 \mu\text{l}</math></li> <li>• Accuracy with 50% of nominal volume: <math>\pm 0.8 \%</math></li> <li>• Accuracy with 10% of nominal volume: <math>\pm 30 \mu\text{l}</math></li> <li>• Accuracy with 10% of nominal volume: <math>\pm 3 \%</math></li> <li>• Precision with nominal volume: <math>\pm 15 \mu\text{l}</math></li> <li>• Precision with nominal volume: <math>\pm 0.15 \%</math></li> <li>• ISO 8655 certificate</li> <li>• Can be autoclaved at 121°C, either in complete or in dismantled state</li> </ul>			
<b>17</b>	<b>Portable pH meter</b>	<b>Quantity: 8</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
<b>17.1.</b>	<ul style="list-style-type: none"> <li>• Waterproof portable pH meter, IP 67 protection</li> <li>• Rechargeable battery operated, 2500 hours autonomy</li> <li>• Automatic read</li> <li>• calibration timer</li> <li>• pH measuring (range): <math>-2.000</math> to <math>+19.999 \pm 0.005</math> pH</li> <li>• mV measuring: <math>-1200.0</math> to <math>+1200.0 \pm 0.3</math> mV</li> <li>• Temperature measuring: <math>-5.0</math> to <math>+105.0 \pm 0.1</math> °C</li> <li>• Backlit LCD Display</li> <li>• Accessories: Carry case, batteries, pH gel type electrode with temperature sensor, Buffers ph4 and ph7</li> </ul>			
<b>18</b>	<b>Portable Conductivity meter</b>	<b>Quantity: 8</b>		
	Manufacturer's name:			

1. Item number	2. Specifications required	3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
	Product type, model:			
	<b>Specifications</b>			
18.1	<ul style="list-style-type: none"> <li>• Waterproof portable Conductivity meter, IP 67 protection</li> <li>• Automatic temperature compensation</li> <li>• Rechargeable battery operated, 1000 hours autonomy</li> <li>• Conductivity measurement: 0.0 to 1000 mS/cm <math>\pm</math> 0.5 % of val.</li> <li>• Temperature measurement: -5.0 to 105.0 °C <math>\pm</math> 0.1 °C</li> <li>• Salinity measurement: 0.0 to 70.0</li> <li>• Cell constants (fixed): 0.475 cm<sup>-1</sup>, 0.880 cm<sup>-1</sup></li> <li>• Accessories: Carry case, batteries, graphite 2-celectrode conductivity cell with temperature sensor, standard solution 1413 <math>\mu</math>S/cm</li> </ul>			
<b>19</b>	<b>Portable Dissolved Oxygen meter</b>	<b>Quantity: 8</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
19.1	<ul style="list-style-type: none"> <li>• Waterproof portable Dissolved Oxygen meter, IP 67 protection</li> <li>• Automatic barometric pressure compensation</li> <li>• Rechargeable battery operated, 500 hours autonomy</li> <li>• Concentration measurement: 0.00 to 90 mg/l <math>\pm</math> 0.5 % of val.</li> <li>• Partial pressure measurement: 0.0 to 1250 hPa <math>\pm</math> 0.5 % of val.</li> <li>• Saturation measurement: 0.0 to 600 % <math>\pm</math> 0.5 % of val.</li> <li>• Temperature measurement: -5.0 to 50.0 °C <math>\pm</math> 0.1 °C</li> <li>• Calibration with vapor saturated air</li> <li>• Accessories: Carry case, batteries, galvanic dissolved oxygen sensor, cleaning solution, electrolyte, exchange membrane head</li> </ul>			



1. Item number	2. Specifications required		3. Specifications offered	4. Notes, remarks, ref to documentation	5. Evaluation committee's notes
20	<b>Portable Turbidimeter</b>	<b>Quantity: 8</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
20.1	<ul style="list-style-type: none"> <li>• White LED Light Source</li> <li>• Measuring Range: 0.01 - 4000 NTU</li> <li>• Repeatability: &lt; 1 % or ± 0.01 NTU</li> <li>• US EPA compliant</li> <li>• 250 measurements memory</li> <li>• Colour Touchscreen Display</li> <li>• USB Interface</li> <li>• Accessories: Batteries, USB Cable, carrying case, sample cells, silicone oil and calibration standards.</li> </ul>				
21	<b>Portable Vis spectrophotometer</b>	<b>Quantity: 8</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
21.1	<ul style="list-style-type: none"> <li>• Light source: Tungsten-halogen-lamp</li> <li>• Wavelength range: 320 – 1100 nm</li> <li>• Wavelength Resolution: 1 nm</li> <li>• Wavelength Accuracy: ± 1 nm</li> <li>• Photometric Range: -3.3 to +3.3 Abs</li> <li>• Photometric Resolution: Absorption: 0.001 ; Transmission: 0.1 %</li> <li>• Compatible Vials: round: 13, 16 and 24 mm, rectangle: 10, 20 and 50 mm</li> <li>• Colour Display</li> <li>• 4000 data sets memory</li> <li>• Ethernet, USB interface</li> <li>• Accessories: Batteries, Carry Case, USB Cable</li> </ul>				

<b>22</b>	<b>Water Lever and Temperature Meter</b>	<b>Quantity: 3</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				
22.1	<ul style="list-style-type: none"> <li>• Instrument for the measuring and recording of groundwater level and temperature</li> <li>• Level Range: up to 50 m</li> <li>• Level Accuracy: 3.0 cm</li> <li>• Level Resolution: 0.2 cm</li> <li>• Temperature Range: -20 to 80°C</li> <li>• Temperature Accuracy: 0.1°C</li> <li>• Temperature Resolution: 0.01°</li> <li>• Fixed sample time from 1 second to 96 hours</li> <li>• 70000 measurements memory</li> <li>• 8 years battery life</li> </ul>				
<b>23</b>	<b>Desktop PC and Monitor</b>	<b>Quantity: 15</b>			
	Manufacturer's name:				
	Product type, model:				
	<b>Specifications</b>				

23.1	<ul style="list-style-type: none"> <li>• Case: Small Form Factor</li> <li>• CPU: 6 cores, 64-bit technology compatible, base frequency 3.0GHz, 18MB of CPU cache</li> <li>• RAM memory: 8 GB DDR5</li> <li>• Hard disk drives: 256GB SSD and additional 1TB 7,200rpm HDD</li> <li>• Optical data drive: internal DVD-RW</li> <li>• Graphic adapter: integrated on-board, dual display support</li> <li>• Sound card: integrated, on-board</li> <li>• Network adapter: 10/100/1000Mbps on-board</li> <li>• Mainboard interfaces: 4 x USB 2.0 and 4 x USB 3.2 (of those 4 USB located on front side of the workstation case), 1xDisplay Port and 1x DVI or HDMI, 1xRJ-45</li> <li>• Free expansion slots: 1xPCIe x16, 1x PCIe x1</li> <li>• Input devices: Keyboard, Optical mouse with scroll function</li> <li>• Operating System: Windows 11 Pro x64 preinstalled or equivalent</li> <li>• Compliant standards: CE, RoHS, EPEAT, EnergyStar</li> <li>• Monitor: Size: 24"; Resolution: 1920x1080, Response time: maximum 5ms; Contrast: 1000:1; Brightness: 250cd/m2; Connectivity: Digital port compatible with PC digital output</li> </ul>			
<b>24</b>	<b>Multifunctional Laser Printer A4</b>	<b>Quantity: 7</b>		
	Manufacturer's name:			
	Product type, model:			
	<b>Specifications</b>			
24.1	<ul style="list-style-type: none"> <li>• Functions: Scan, print, copy, fax and scan to email</li> <li>• Print technology: B&amp;W laser</li> <li>• Print Resolution: 600 x 600dpi</li> <li>• Print Speed A4: 30 pages / min</li> <li>• Time to first page: up to 8 seconds</li> <li>• Memory: 512MB</li> <li>• Maximum Monthly Duty Cycle: 25,000 Pages</li> <li>• Paper input capacity: 250 sheets, ADF 50 sheets</li> <li>• Duplex (two-sided) printing: Integrated Duplex</li> <li>• Connectivity: USB 2.0; Ethernet 10/100; Wi-Fi 802.11n</li> <li>• Cartridges: Set of cartridges for 4,000 pages</li> </ul>			

**Additional services before the provisional acceptance for all items**

<b>Specifications Required</b>		<b>Specifications Offered</b>	<b>Notes, remarks, ref to documentation</b>	<b>Evaluation Committee's notes</b>
<b>Installation</b>	Installation performed by contractor or authorized service provider; All the equipment must include all necessary parts and standards for its installation			
<b>Testing</b>	Testing of all basic function on a set of producer's standard samples commonly used for the corresponding instrument.			
<b>Start-up Training</b>	Practical start-up training at each place of delivery in Serbian language for minimum 2 users in all basic functions of the instrument on set of standard samples, commonly used for the corresponding instrument. Duration of training at each place of delivery: 2 days.			
<b>Manuals</b>	The original operating instructions for all system components can be in English. A brief instruction manual should be in Serbian, one copy of each in soft and hard copy.			
<b>Certificates and documentation</b>	CE mark; Declaration of Conformity			
<b>Support &amp; maintenance requirements during warranty and commercial warranty period for all items</b>				
<b>Warranty</b>	365 days after provisional acceptance in accordance with the conditions laid down in Article 32 of the General Conditions.			
<b>Commercial warranty</b>	1 year (after the end of 1 year standard warranty) in accordance with the conditions laid down in Article 32 of the General Conditions and Article 32 of the Special Conditions Tenderer must provide a detailed description of the organization of the commercial warranty (e.g. name of the authorized service provider)			

<b>Response time</b>	On-site response time within 3 working days during warranty and commercial warranty period.			
<b>Repair time</b>	20 working days repair time during 2 years after provisional acceptance			

## Part II – Place of delivery/Acceptance

Item number	Item title	Place of acceptance				No. of articles
		Šabac	Raška	Grdelica	Sremska Kamenica	
1	TOC/TN Analyzer	1	1	1	0	3
2	Liquid chromatograph UHPLC/MS/MS	0	0	0	1	1
3	Fully automated SPE Unit	0	0	0	1	1
4	Analytical Balance	2	2	2	0	6
5	Laboratory UV/Vis spectrophotometer	1	1	1	0	3
6	Technical Balance	1	1	1	0	3
7	pH meter	1	1	1	0	3
8	Conductometer	1	1	1	0	3
9	Laboratory Dryer	1	1	1	0	3
10	Fume hood	1	1	1	0	3
11	Digital burette 50 ml	11	12	12	0	35
12	Vacuum Pump	2	3	3	0	8
13	Vacuum filtration Unit	2	3	3	0	8
14	Laboratory Heater	1	1	1	0	3
15	Pipette, volume 0.1-1.0 ml	8	8	9	0	25
16	Pipette, volume 0.5-10.0 ml	8	8	9	0	25
17	Portable pH meter	2	3	3	0	8
18	Portable Conductivity meter	2	3	3	0	8
19	Portable Dissolved Oxygen meter	2	3	3	0	8
20	Portable Turbidimeter	2	3	3	0	8
21	Portable Vis spectrophotometer	2	3	3	0	8
22	Water level and temperature meter	1	1	1	0	3
23	Desktop PC and Monitor	5	5	5	0	15
24	Multifunctional Laser Printer	2	2	3	0	7
<b>TOTAL</b>		<b>59</b>	<b>67</b>	<b>70</b>	<b>2</b>	<b>198</b>