This manuscript is a relevant contribution presenting a new lab-in-the-field set-up for high frequency natural water analysis and its application over a 6-month period in a research observatory. To my opinion this original set-up is promising and presents several relevant specificities: 1) it analyses water stable isotopes that are not possible to analyze with in situ probes , 2) it allows for analyzing several different water sampling points which is of major interest, and 3) it sounds easy to move from one catchment to another. I think the authors should detail several aspects so that readers can fully understand:

- i) about multiple water sampling locations :
  - how far could be the sampling locations from the WATER? How deep? Are there any constraint for the pumping ? for example, would it be possible to sample deep groundwater? What if the well gets dry or if the stream gets frozen?

    The horizontal distance is constrained by whether the flushing and reservoir filling time can be accommodated within the desired sample throughput time, which here is 20 minutes. In the proof-of-concept application, the sampling line to the most distant source from the WATER (145 m) could be successfully flushed within 10 minutes. Meanwhile, the vertical depth of sampling is constrained by the power of the peristaltic pump, which here can lift water up from 3 m below the WATER. We will rework L120-124 to include these specific details.

    If no water is available from a source due to a well running dry or a sampling line becoming obstructed, this would be detected via the sampling reservoir load cell during the Fill-Empty-Fill component of a Measurement Task, and the sample would be skipped. Meanwhile, if ambient temperature falls below a defined threshold, the WATER pauses sampling to prevent sample acquisition and measurement issues that could be caused by freezing conditions. We will clarify this in L211-212.

  - would it be possible to manage multiple event-triggered sources? e.g. to capture rain + stormflow dynamics or to investigate the spatial variability in rainwater composition with multiple collectors?

    Yes, multiple event-triggered sources are possible and could be triggered by a variety of data streams depending on the measurement devices connected to the WATER (e.g., load cell for rainfall, water level, soil moisture, etc.). We will make this clearer in Section 2.4.

- ii) time recording:

- how long does it take to the water to travel from sampling point to the WATER? and to the reservoir to be rinced and filled?

  In an earlier iteration of the manuscript, we provided the following example for calculating the flush time of a given source but later removed it for brevity: "The flush time is set for each source separately based on an assigned flow rate and the volume of water in the line (dependent on length and diameter). For example, a 50 m line with an inner diameter of 4 mm would hold 630 ml of water. To flush the line twice with a flow rate of 500 ml min^{-1} would require 2.5 minutes." We will return this to the revised manuscript and extend to account for the time needed to rinse and fill the reservoir after flushing (approximately a further 20-25 seconds).

- what it the time associated to the recorded analysis values? is it sampling time + 20 min for isotopic results? is it less for NO3 and EC?

  The time associated with the analysed values is the UTC time when a Measurement Task began. Therefore, all parameters for a sample receive the same timestamp. This is accurate because for isotopes, the CWS does not start sampling the water in the sampling reservoir until it is filled to 60 mL, after which no further water is added during analysis, whilst the water quality measurements begin immediately after the sampling reservoir has been filled, meaning that all analysed water is acquired at approximately the same time. We will clarify this in Section 2.5.

- Did you compare with in situ EC probes in stream sources and piezometers?

  We have not specifically compared measurements taken by the WATER to in-situ EC probes. However, data were quality checked and calibration of measurement devices was undertaken at routine intervals.

Specific comments:

No detail about filtration is given in the abstract, would it be difficult to have stronger filtrations (e.g. 0.45 μm)? Is this threshold of 5 μm resulting from preliminary tests or any other strategy?

We will add the filter threshold to the abstract. The 5 μm threshold of the filter upstream of the sampling reservoir reflects the need to remove particulates from water sampled by the Continuous Water Sampler (CWS) during stable water isotope analysis. This is to preserve the lifespan of the membrane cassette used by the CWS and does not affect the *resulting data. We will present this reasoning in the revised manuscript and make clear that, depending on which measurement devices are to draw water from the sampling reservoir, other filter thresholds could also be used, but with likely implications for the frequency of routine maintenance if using a smaller threshold.*

lines 101-104: temperature fluctuations (+/- 5°C for low temperature, +/-1° with air conditionner) : what is the range of temperature for which these ranges of fluctuations are guaranteed?

Temperature can be controlled to within +/- 5°C for ambient outside air temperatures up to 40 °C. This is achieved using a Maico Eat 6 G/1 temperature control system – a target temperature is set with ventilation or heating occurring when the temperature inside the trailer exceeds or falls below this target by 5 °C, respectively. The operating temperature range for the thermoelectric coolers which control temperature in the server enclosure is -30 to 55 °C. These details will be added to Section 2.1.

line 153: please explain the different parameters proposed as measurement of organic content

The parameters CSBeq (Chemical Oxygen Demand equivalent) and BSBeq (Biochemical Oxygen Demand equivalent) were mistakenly given with their German acronyms. This will be corrected in the revised manuscript.

line 175 : Why do you mean by "code aligns with FAIR principles"? is that because the code is open? or is the code directly reusable by algorithms and based on interoperability standards?

Here we meant that the code is open source and based on a free software stack. However, we realise that this is not the full definition of "FAIR principles". Therefore, we will adjust this description of the code in the text accordingly.

Section 2.4: If someone had to be autonomous for changing acquisition parameterization or adding new devices: what skills will it required? My understanding is that it is implemented in the PLC software, then it should be modified in the CODESYS scripts, is that right? Same question for changing sampling locations or measurements actions: my understanding is that this part required "only" to know Python coding, is that right? this needs to be clearer.

Since the PLC largely controls the Sample Acquisition System, adding new measurement devices would not normally require changes to the CODESYS scripts. An exception would *be if adding, for example, additional tank electrodes for precipitation-triggered sampling, as these interface with the WATER via the PLC. Adding measurement devices would instead usually require writing a Python script defining the functions specific to the operation of the device and then modifying the measurement.py script to include a call to the measurement function of the new device. The device would also need to be added to the general configuration file (.yaml) of the WATER. Changing measurement actions within a Measurement Task would also require modification of the measurement.py script. We will elaborate on this within Section 2.4.*

Changing sampling sites is straightforward as the WATER only needs to know which valves to sample from and in what order. This is defined in the schedule. Therefore, changing a sampling location would simply involve relocating the external sampling line to a new position and updating the flushing time to account for any changes in the sampling line length. We will explain this in Section 2.4 as well.

Lines 225-229: there is no additional time for filling reservoir and pumping from sources?

There is no additional pumping or filling time required as once measurements have been made by instruments on the Throughflow Pathway (i.e., ProPS and YSI 600R), pumping of the next sample and flushing of the sampling line can already begin whilst the isotope measurements are still ongoing. Once the isotope measurements are complete, the reservoir can immediately be rinsed and filled with the next sample. This detail was omitted in the manuscript, and we will add it to Section 2.5.

lines 277-278: does it need someone in charge of watching the alarms and solving eventual issues?

Alarm notifications can be sent to a list of persons responsible for the WATER via email or SMS so they are immediately made aware of any issues and can respond in a timely manner to minimise potential data loss. This will be explained in Section 2.4.1.

Line 286: pumping set-up for Groundwater is not described. What is the range of water table depth that is supported by this set-up?

Groundwater is pumped to the WATER by the onboard peristaltic pump (P1); there are no additional pumping mechanisms at the piezometers themselves. Confusion may have been caused by mentioning the potential to use additional pumps to facilitate sampling of deeper GW; however, this is not something we have tested, so we will remove this from L123-124. The present setup supports sampling of shallow GW up to 3 m below the surface. This will be explicitly stated.

line 328 : can you explain what is your criteria of quality? (high NO3 concentration? high turbidity? others?)

Here we mean if a high particulate load was expected in the sampled water due to, for example, a heavy rainfall event. We will clarify this in the revised manuscript.

line 339: It would be helpful to know how often consumables need to be replaced or the approximate monthly costs associated with this.

Since consumable costs associated with the WATER often fluctuate and the frequency of replacement would likely depend on the local and transient conditions of the sampling site, it would be difficult to provide generic guidance or cost estimations in relation to turnover of consumables. However, we will provide a table of the main consumables and hardware components (in response to RC2) for the WATER in a single Supplement so that future developers or operators of similar systems have an easy reference for the parts to consider when planning budgets and maintenance schedules. We will also expand Section 3.3 slightly to include likely longer-term maintenance considerations.