**Kenai River Water Quality Monitoring Quality Assurance Project Plan Comments from EPA R10 Technical Specialists**

August 24, 2022

*The following document summarizes comments on Kenai Watershed Forum’s (KWF) Quality Assurance Project Plan from EPA Region 10 technical specialists, forwarded by Katherine Brown (katherine.brown@epa.gov), and response to comments from KWF Water Quality Coordinator Benjamin Meyer (ben@kenaiwatershed.org)*

**Section A7. Quality Objectives and Criteria for Measurement Data – Precision**

Include the requirement for both measurements to be above the practical quantitation limit (PQL) and/or reporting limit (RL) before the RPD calculation can be performed. RPD calculations should not be performed where one or both measurements are below the PQL. This PQL requirement was mentioned in Section C2 of the approved QAPP but was not implemented.

Added footnote to each table where RPD or overall project precision is mentioned with the following text: “All measurements used to calculate precision / RPD must be above practical quantitation limit (PQL) and/or reporting limit (RL). Also added text to this effect under the “Precision” section in section A7.

**Table 8. Preservation and Holding Times for Sample Analysis**

For Dissolved Metals remove the field filtration statement since this will be done at the lab (allowed under method 1669).

Modified statement in Table 8 to read, “Lab filtration w/0.45 µm filter within 14 days of collection; followed by HNO3 to pH<2.”

**Table 10. Field/Laboratory Quality Control Samples**

Include a filter blank for the dissolved metals in order to demonstrate the absence of contamination from sample filtration.

Added row to Table 10 to include filter blank for dissolved metals. For the column, “QC Acceptance Criteria Limits,” added “≤ MDL (see Tables 1, 2, 3, and 4).”

**Appendix B, Fieldwork Sampling SOP - Dissolved Metals - Section 1.ii.i.**

Remove “*with a red sticker (denoting HNO3; Nitric acid)*” from this bullet. As the sample for dissolved metals will not be acid preserved until after filtration at the lab. The picture of the bottle in this procedure is correct but the description should be updated to match.

Corrected text and picture to match.

Here are also some additional suggestions that ADEC implemented, which they said made a big difference in the results they were getting and greatly improved their QA (see specific comments from Alaska Department of Environmental Conservation in blue text, and response from Kenai Watershed Forum in red text:

General response: Kenai Watershed Forum (KWF) is grateful to welcome specialists from EPA R10 into the ongoing conversation with Alaska Department of Environmental Conservation (ADEC) on improving water quality sampling accuracy and precision for dissolved metals parameters. The above points have been communicated between KWF by ADEC during winter/spring 2022. KWF is incorporating these modifications as quickly as feasible, and looks forward to continuing improvements.

The ADEC recommendations are listed again below, with the status of change for each item in KWF’s draft Quality Assurance Project Plan (in red text):

* Use of clean hands/dirty hands protocol
  + Fieldwork participants have received additional training on this topic in spring/summer 2022, and a summary is included in the written SOP
* Use of a long handled dipper pole to assist in the collection of samples as far away from the boat as possible
  + KWF has requested a quote to purchase this equipment for all sampling teams starting in spring 2023
* Lab filtering instead of field filtering
  + KWF implemented this change for all events starting summer 2022
* No sunscreen or bug repellent (most contain zinc)
  + This requirement is outlined in all training events, and is included in the written SOP
* Lab blanks during each sampling event (they might take samples at 4 different locations in one day and at least one of locations includes a lab blank every time).  We were finding lab filter contamination as well.
  + KWF will implement field blanks, as well as lab filter blanks, for dissolved metals beginning in spring 2023
* Duplicates at 10% of samples
  + KWF has incorporated a sampling scheme with 10% duplicates for all parameters since the program’s initiation in year 2000