March 28, 2024

Katherine Brown  
Tribal Trust and Assistance Branch  
Regional Administrator's Division (TTAB-122)  
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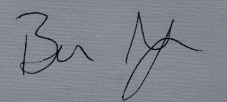
Dear Ms. Brown,

Kenai Watershed Forum coordinates the efforts of a cooperative water quality monitoring program focused on the Kenai River in south central Alaska. We are providing this technical memo to inform the EPA Region 10 office of several minor revisions to the project’s current Quality Assurance Project Plan (QAPP). The changes include the following items:

* Updating personnel names on the distribution list and technical advisory committee
* Including use of new models of hand-held water probes to collect intrinsic water quality parameter observations (pH, temperature, conductivity, dissolved oxygen, and turbidity)
* Describing where, when, and how opportunistic observations of the five parameters listed above may be collected, using the new hand-held probes. (“Opportunistic,” to mean occurring on dates outside of solely the two standard spring & summer dates currently described)

We have documented these proposed changes within this technical memo and will publish it as an addendum to the full QAPP document posted on [www.kenaiwatershed.org](http://www.kenaiwatershed.org). When a future opportunity occurs to conduct a formal revision of the QAPP, we will incorporate these changes in to the proposed edits.

Thank you for your time and assistance. Sincerely,

  
Benjamin Meyer  
Kenai Watershed Forum, Environmental Scientist  
[ben@kenaiwatershed.org](mailto:ben@kenaiwatershed.org)  
(907) 232-0280

**March 2024**

**Revisions to “Kenai River Water Quality Monitoring Quality Assurance Project Plan (QAPP), Multi-Agency Baseline, v3,” available at the web address in the footnote[[1]](#footnote-1).**

1. **Updating personnel names on the distribution list and technical advisory committee (arrow indicates change)**

* Page 7, “A4. Distribution List”
  + Mitch Michaud 🡪 Trent Dodson
  + Moses Jordan 🡪 Alana Shaw ([alana.shaw@kenaitze.org](mailto:alana.shaw@kenaitze.org))
  + Yvonne Weber 🡪 Vacant
  + Amber Bethe 🡪 Amber Crawford ([amber.crawford@alaska.gov](mailto:amber.crawford@alaska.gov))
* Page 8, “KWF Director”
  + Mitch Michaud 🡪 Trent Dodson
* Page 46, “Appendix A: Technical Advisory Committee”
  + Sara Apsens
    - 🡪 Change in job title & agency
    - 🡪 Habitat Branch – Fish and Wildlife Biologist, Kenai Fish and Wildlife Conservation Office, 43655 Kalifornsky Beach Road, Soldotna, AK 99669
  + Jack Blackwell
    - 🡪 Retired, remove from list

1. **Use of new models of hand-held water probes to collect intrinsic water quality parameter observations (pH, temperature, conductivity, dissolved oxygen, and turbidity)**

Kenai Watershed Forum will include use of two new portable field instruments, 1.) the hand held probe YSI ProQuatro, and 2) the Hach 2100P portable turbidimeter. They will be used at existing sites year-round as resources and site conditions permit.

* Page 13, “Schedule”
  + Add additional bullet point:
  + “Opportunistic data collection of intrinsic water quality parameters will occur throughout the year, including pH, turbidity, water temperature, specific conductivity, and dissolved oxygen.”
* Page 16, “Table 2. Data Quality Objectives for Electronic Instruments”
  + See the revised version of table 2 below for updated information in implementing the new instruments, a) YSI ProQuatro for pH, conductivity, dissolved oxygen, and temperature, and 2.) The Hach 2100P for turbidity
  + TKA – add in fact that turbidity measurements will be recorded in lab from sample of TSS sample

**Table 2. Data Quality Objectives for Electronic Instruments[[2]](#footnote-2),[[3]](#footnote-3)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PARAMETER | EPA METHOD | RANGE | UNITS | SENSITIVITY | PRECISION[[4]](#footnote-4) | ACCURACY |
|  |  |  |  |  |  |  |
| pH | 4500-H+ B-2000, pH probe on YSI ProQuatro | 0 – 14 | Standard pH units | 0.01 | 0.01 units | ± 0.2 units |
| Turbidity | 2130 B ~ Nephelometric Method, Hach 2100Pportable turbidimeter | 0 – 1000 NTU | Nephelometric Turbidity Units (NTU) | 0.01 | 0.01 NTU or 1% of reading, whichever is greater | ± 2% |
| Water Temperature | 2550 B-2000, temperature probe on YSI models ProQuatro, 30, 55, and 95 | -10°C – 60°C | Degrees Celsius (°C) | 0.1, 0.1, 0.2, and 0.1 | 0.1°C | ± 0.2°C |
| Conductance | 120.1, conductivity probe on YSI ProQuatro | 0 – 1000 uS/cm | Micro-siemens/cm (uS/cm) (converted to 25 C) | 4 digits | No stated accuracy spec | ± 0.5% of reading or 0.001 mS/uS. w.i.g. |
| Dissolved Oxygen | ASTM D888—09 (C), dissolved oxygen probe on YSI ProQuatro | 0 to 20 mg/L | Milligrams per liter (mg/L) | 0.1 mg/L | 0.1% air saturation | 0 to 20 mg/L: ± 2% of reading or 0.2 mg/L, w.i.g  20 to 50 mg/L: ± 6% of reading (0.01 mg/L) |

1. **Opportunistic observations of intrinsic water quality parameters, using the new hand-held instruments**

* In version 3 of the QAPP, five water quality parameters are collected using hand-held instruments at all twenty-two field sites twice annually, once in spring and once in summer, simultaneously when grab samples are collected.
* To characterize baseline conditions more thoroughly at these established sites, we will use portable field instruments to gather data at additional dates throughout the year as resources allow.
* We will use the **YSI ProQuatro** to measure in-situ conditions for pH, temperature, conductivity, and dissolved oxygen
  + All measurements for these parameters will be recorded in-situ on the field form provided in this technical memo.
* We will use the **Hach 2100P** portable turbidimeter to measure turbidity.
  + Measurements will be recorded preferentially on-site, and data recorded on the field form provide din this technical memo.
  + When it is not possible to use the turbidimeter in-situ, samples will be collected and transported using methods identical to those described for total suspended solids (Appendix B of QAPP)
  + Prior to transferring samples to the 20 mL glass vials used for the Hach 2100P photometer, samples in the 1L HDPE bottles will be re-homogenized according to methods described for preparing Hach turbidity standards[[5]](#footnote-5) (each collection bottle will be receive a series of gentle inversions).
* All individuals using the portable field instruments described above will receive a standardized training from the project manager or project quality assurance officer.

1. <https://www.kenaiwatershed.org/news-media/qapp-revisions-completed-2023/> [↑](#footnote-ref-1)
2. <https://www.ysi.com/File%20Library/Documents/News%20Briefs/NB13-0116-01-EPA-Approved-Methods.pdf> [↑](#footnote-ref-2)
3. <https://www.manualslib.com/manual/1279581/Hach-2100p.html> [↑](#footnote-ref-3)
4. Instrument’s value in user manual for “resolution” [↑](#footnote-ref-4)
5. <https://images.hach.com/asset-get.download.jsa?id=27449988703> [↑](#footnote-ref-5)