

### *Station Analysis Template: Water-Quality Records*

Each continuous-monitoring record requires a station analysis. The purpose of the station analysis is to document conditions at the site, how the record was compiled and manipulated, and how this information was used in analyzing the accuracy and completeness of the record. Information from field notes, instrument logs, AQUARIUS output, and the station description are used to evaluate the accuracy and completeness of the record. Records of cross-section surveys and extreme values must be noted in the station analysis, and analysis of cross-section statistical summaries must be included in the station analysis as part of the data-evaluation process. Techniques and Methods 1-D3 (TM1-D3--Wagner and others, 2006) provides guidance for writing a station analysis. At a minimum, the station analysis must include the following:

**Analysis Period (determined by analyst in RMS)**—*Dates of record associated with this analysis*

**Analyst (auto populated in RMS)**—*Name of record-period analyst(s)*

**Record (optional)**—*State the range of readings measured during record period (min and max). Included general discussion of periods with any problems (missing record, for example).*

**Site characteristics (optional)**—*Brief description of the composition of the channel and any unique or unusual features that may affect the quality of the record for the analyzed period.*

**Instrumentation (optional, should be noted in station description)**—*Type of monitoring sensor(s) and recorder, location of sensor(s) or intakes, any other special instrumentation or features, and dates sensors were changed or replaced*

**Sampling location (optional)**—*Station name and number, year, field parameter measured, and measurement frequency*

**Field Visits (mandatory)**—*Note the date, purpose and activities performed for all visit over record period*

**Deletions (mandatory)**—*Discuss all edits to the recorded, including reason for the erroneous values and methods used in making deletions. Provide dates for any gaps in recorded gage heights.*

**Fouling Corrections (mandatory)**—*How and when the instrument was cleaned or checked, including statement if corrections were needed for the data*

**Calibration Drift Corrections (mandatory)**—*How and when the instrument was recalibrated or checked, including statement if corrections were needed for the data*

**Other Corrections (mandatory)**—*Provide detailed discussion on any other types of corrections that were developed, their period of applicability, and why they were deemed necessary for the record period. (Note: corrections that vary by stage such as cross-section corrections require a well defined relationship built upon direct observations over range of stage and events. Document(s) with supporting plots/analyses/discussions should be referenced and properly stored in accordance with WSC policy)*

**Cross-section surveys (mandatory)**—*How, where, and when the cross section was measured, the number of verticals, and the amount of variation throughout the cross section (State whether the location of the sensor(s) or water-supply intake is representative of the stream.)*

**Vertical profiles (mandatory)**—*How, where, and when the vertical profile was measured, the number and depth of measurements, and the amount of variation throughout the profile (State whether the location of the sensor(s) or water-supply intake is representative of the stream.)*

**Remarks (optional)**—*Any additional information about the site, data collected, or general statements that do not fit in any other section*

The station analysis should enable a reviewer to reconstruct what happened at the site, how the record was processed, why data corrections were applied, and the reasoning behind the accuracy ratings assigned.

These are the elements from [TM1-D3](#) that have been omitted in the template above.

**Published records**—*Identification of the field parameter that is published, as well as any data that are collected and not published*

**Record**—*Statement of the completeness of the record and how the raw measured record is decoded or manipulated to provide the constituent values used to compute the final records (Note all missing data and the reason it is missing. Include any data that are collected but not published. Include the final rating of accuracy for the period of record (or specific service intervals) in chronological order.)*

**Computations**—*Statement of how corrections were applied to the data, a list of extreme correction values that were applied to the recorded values during the year, and causes for correction(s) (Any treatment of unusual or atypical data should be documented.)*

**Backup Data**—*Describe source of the backup data (EDL, etc.), the quality of the backup data, why there was a gap in the primary time-series, and the period that contains the merged data.*

## References Cited

Wagner, R.J., Boulger R.W., Oblinger C.J. and Smith, B.A, 2006, Guidelines and standard procedures for continuous water-quality monitors: Station operation, record computation, and data reporting: U.S. Geological Survey Techniques and Methods Book 1, chap D3 WRI 00-4252, 51 p., accessed August 24, 2107, at <https://pubs.usgs.gov/tm/2006/tm1D3/>.