

Metadata for: BROADSCALE Monitoring - Lake Water Chemistry

This table provides essential information about the program data.

Title	BROADSCALE Monitoring - Lake Water Chemistry
Abstract	Water chemistry data from approximately 1,000 inland lakes across Ontario are provided as part of the BROADSCALE Monitoring Program. Water chemistry data for up to 21 parameters are collected from a subset of lakes annually. Water samples were collected in spring by the Ministry of Natural Resources. Water chemistry analyses were performed by the Ministry of the Environment, Conservation and Parks. The dataset has been reformatted into a long (tidy) structure, where each row represents a single observation (parameter measured at a site and date). Additional fields for units and QA/QC indicators have been included to improve usability.
Purpose	
Status	Ongoing
Contact	Name: Anna DeSellas Email: anna.desellas@ontario.ca Organisation: Ministry of the Environment, Conservation and Parks Position: Scientist, Inland Lakes Monitoring Role: Point of contact
Cited Responsible Parties	See the Open Government License - Ontario
Keywords	BROADSCALE Monitoring, water chemistry, lakes
Use Limitations	Water chemistry data are not available for years 2020 and 2021
Legal Constraints	See the Open Government License - Ontario
Geographic Bounds	Ontario, province-wide
	Data Structure This dataset is provided in a long (tidy) format, where each row represents a single measurement of a parameter at a given site and date. Multiple rows may exist for a single sampling event, corresponding to different parameters. Parameters that were previously stored as individual columns have been consolidated into a single "Parameter" field. Data Fields Lake_Name: Name of the sampled lake Date: Date and time of sample collection Station_ID: Unique identifier for the sampling location Latitude / Longitude: Location of the sampling site in decimal degrees Parameter: Name of the measured variable (e.g., Calcium, Total Phosphorus, Dissolved Organic Carbon) Parameter_Code: Short code associated with the parameter (e.g., ALKTI, CAUT, PPUT1) Value: Measured value for the parameter Units: Units of measurement associated with the value (e.g., mg/L, µg/L, TCU, pH) VALQUALIFIER: Numeric or coded values providing additional analytical context (see QA/QC Information) REMARK: Qualifier codes or notes providing information on detection limits, censoring (e.g., <), data quality, or analytical context Note: QA/QC qualifier fields (VALQUALIFIER and REMARK) are included in the long-format dataset. These fields were not included in earlier wide-format summaries.

Supplemental Information	QA/QC Information The dataset includes analytical qualifier information in the VALQUALIFIER and REMARK fields, which should be considered when interpreting results. • When REMARK contains values such as "<", "<MDL", "<W", or "<=W", the reported value is below detection or reporting limits. In these cases, the value represents a threshold and not an actual measured concentration. • When REMARK contains values such as "<T" or "<TE", the reported value represents a measurable low-level concentration with increased analytical uncertainty and should be interpreted with caution. • When REMARK = "+/-", the VALQUALIFIER field contains a numeric value representing analytical uncertainty. In these cases, the result should be interpreted as Value ± VALQUALIFIER (e.g., Value = 220 and VALQUALIFIER = 66 represents 220 ± 66). The REMARK field may also include additional quality or contextual information (e.g., sample handling issues or laboratory notes). These remarks provide important context but do not quantify uncertainty unless paired with "+/-" as described above. Important Considerations for Data Use • Values reported with detection-limit qualifiers (e.g., "<", "<=W") should not be treated as true measured concentrations in analyses. • Low-level values flagged with qualifiers such as "<T" may have reduced precision and accuracy. • Analytical uncertainty (where REMARK = "+/-") should be considered when interpreting and analyzing results. • Detection limits and analytical methods may vary over time; users should consider temporal consistency when conducting analyses. • All values and qualifier codes are presented as originally reported; no transformations or reinterpretations have been applied. • Users are responsible for applying appropriate statistical and analytical methods when working with censored or qualified data. • Analytical qualifier formats vary across the dataset due to changes in laboratory methods and reporting conventions over time. Units Units are consistent within each parameter; however, related parameters may be reported in different units. For example, total nitrogen may be reported in mg/L (NTOT) or µg/L (e.g., NNTKUR) depending on the analytical method. Users should refer to the Units field for each record. Geographic Coordinates (Latitude / Longitude) Coordinates are approximate and should be used with caution. Locations may not reflect the exact sampling point due to historical or spatial accuracy limitations. Data Formatting Note This dataset represents a reformatted version of a previously released dataset. The underlying data values have not been modified; however, the structure has been converted from a wide format (parameters as columns) to a long format to improve usability and consistency with other datasets.
Date Stamp	May 27, 2026