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January 25, 2024

Ministry of the Environment Conservation and Parks
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Laboratory Licensing and Compliance
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Re: ERO 019-7834 Changes to the Protocol of Accepted Drinking Water Testing Methods and Practices for the Collection and Handling of Drinking Water Samples

Thank you for the opportunity to comment on the *Changes to the Protocol of Accepted Drinking Water Testing Methods and Practices for the Collection and Handling of Drinking Water Samples documents*. Peel Region (Peel) staff have reviewed the amendments and provided comments herein.

General Comments

- Peel staff focused its review on the content and intent of these documents; however, several inconsistencies were observed related to the document formatting, reference to acronyms or initials without them being defined, typos, missing text, and grammatical inaccuracies. Peel staff recommends both documents are reviewed in detail and action taken to apply the required improvements.
- The described practices provide guidance to system owners/operators and refer to prescribed legislative requirements. It is important that both documents are reviewed and updated where applicable to eliminate the potential conflict between providing recommendations vs. mandating action.
- *The Protocol of Accepted Drinking Water Testing Methods* and the *Practices for the Collection and Handling of Drinking Water Samples* have been modified, with content shortened significantly and their format updated. Given their relation to one another, and considering the target audience, Peel staff suggests that these two documents are merged to form one protocol. This would simplify the referencing of practices and allow staff to refer to just one document for guidance on drinking water sample collection, handling, storage and testing.

  Current format, with guidance on sampling containers and holding time (the table) in a Practices for the Collection and Handling of Drinking Water Samples, aligns with the information on sample collection described within the document. Moving this table to the Protocol of Accepted Drinking Water Testing Methods would require the system owner/operating authority/sampler to reference both documents for planning of water quality monitoring and sample collection. If merger of these two documents is not preferred, Peel staff recommends leaving the table with parameter specific sample information in the Practices for the Collection and Handling of Drinking Water Samples.

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Updated Practices for the Collection and Handling of Drinking Water Samples

Section 1.0 Introduction

Peel staff found this section to be well organized and structured to provide for a reader-friendly experience, with ease to move between sections of interest.

Paragraph 4 reads that these practices are applicable to samples taken by the Ministry of the Environment, Conservation and Parks (MECP) provincial officers and laboratory staff. Peel staff suggests rewording of this section to reflect these practices being applicable to samples taken by MECP officers and provide support to laboratory staff, which is believed to be the initial intent of this sentence.

Section 1.1 Limitations

Grab sample is not defined until later in Section 3.1. Peel staff suggests that a short description of this sample type is provided, or reference made to Section 3.1 Sample Type for added clarity.

Section 2.0 Representative Samples and Representative Data

Last paragraph relates to practices that help ensure sample integrity, such as sample information, sample labelling, and maintaining of chain-of-custody records. Peel staff recommends that sampler information is added for sample traceability and accuracy.

Section 3.1 Sample Type

To align the order of sample type listed in this section with the regulatory framework, Peel staff suggests starting with defining a grab sample, followed by a composite sample, which is generally collected for process monitoring programs.

Peel staff also recommends that grab samples in online monitoring be mentioned as they too provide valuable data for water quality trending but also support prescribed monitoring for the efficacy of treatment process (like pH testing).

Section 3.2 Sampling Location

Ontario Regulation 170/03 prescribes sampling and testing for lead in water at the tap. Although a separate section exists for sampling for lead under Schedule 15.1 of the regulation, Peel staff recommends that ‘plumbing’ is added to the list of types of samples covered in this protocol.

Sampling from plumbing is also described where representative sample is collected with an intent of the tap being flushed until it can be deemed representative of the distribution system. It is suggested to include reference or include a link to MECP Technical Bulletins related to drinking water and residential testing.

Section 3.2.1 Raw Water

It would be helpful to the reader if the terms ‘groundwater systems’, ‘communal wells’ and ‘surface water systems’ were defined for the reader. The fact that this protocol reflects a few regulations may create confusion for those not operating a certain type of the system. It must also be noted that certain terms are used interchangeably by the industry, with the term ‘communal’ often used in groundwater systems.

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Section 3.3 Sample Volume

Sampling instructions appear unfinished, suggesting that travelling blanks are not closed before their delivery to the laboratory. Peel staff recommends that wording from the current version is maintained to include step of closing ("then closed") prior to returning sample to the laboratory.

Section 3.4. Sample Collection

Paragraph 7 of this section refers to actions that can compromise the reliability of test results. Peel staff suggests that reference is also made to the use of expired preservatives and its impact on the integrity of samples and the test results.

Section 3.4.3 Sample Preservation

Similar to the note above, it is important to consider preservative expiry and implementation of sample bottle rotation to ensure preserved sample bottle life span for optimal test results.

De-chlorination: the word "deepening" should be corrected to read "depending".

pH control: sample bottles can be issued by the laboratory pre-charged with preservative and Peel staff recommends that a step is added with instruction to gently mix the sample to ensure the preservative has been incorporated.

Section 3.4.4 Sample Holding Times

The range for sample holding time between 48 hours to 60 days has lost its helpful meaning with the parameter specific table now removed from this document.

It would be helpful to add a note to clarify that the remainder of unused samples can be held and discarded after 60 days, this being the holding time limit or the best practice on sample retention period.

The last paragraph encourages the need for sample handling and hold times table to remain in this document.

Section 3.5.1 Volatile Organic Compounds (VOCs)

Peel staff recommends adding graphics or photos to the guidance documentation as it may be more helpful than describing the practice for VOC sampling or any other specialized sampling techniques.

It is important to reiterate that preservatives must not be discarded from the sample bottle.

Section 3.5.2 Microbiological

Chlorinated sample will need a dechlorination agent. Section 3.5.1 delineates action required for Chlorinated and Non-Chlorinated Water as it applies to VOC. Peel staff suggests that a similar reference is made for raw water, treated and distribution water sample collection for microbiological parameters and use of preservative clarified.

Section 3.5.3 Lead in Plumbing

Although reference is made to 'routine metals test', there is no mention of or no instruction on collection of samples for metals test. Removal of table 1 with parameter specific guidance makes it more difficult to plan a sampling program.

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Section 3.6 Sample Labelling

Peel staff recommends adding 'plumbing' to a list of sample types which reflects sampling for lead and 'if applicable' to preservative information to acknowledge that not all sampling bottles include a preservative.

Section 3.7 Sample Storage and Transportation

Paragraph 4 is missing 'be' to read 'must be an attempt'.

Indication and recording of sample temperature at the source (at time of collection) may be helpful to justify delivery of samples with temperature above 10 degrees Celsius.

Section 5.0 Summary

Throughout the document the use of "should" and "may" needs to be reviewed using the ISO 17025:2017 introduction as guidance.

Table 1 is a great resource for a snapshot of parameter specific sampling requirements or guidance. Removing it from this guidance, and with no active or direct link to Appendix C of Accepted Testing Methods protocol makes the document incomplete.

Updated Protocol of Accepted Drinking Water Testing Methods

Section 2.2 Heterotrophic Plate Count
The drinking water system approval framework in Ontario includes Municipal Drinking Water Licence and Drinking Water Works Permit. Reference to Environmental Compliance Approval should therefore be removed or replaced with the correct type of approval.

Appendix C MECP Sample Collection and Handling Requirements
This Appendix is more suitable for Practices and Handling of Drinking Water Samples as it provides information referenced and described in that protocol.

Definition of "cool" in the last paragraph seems to conflict with practices described in the Practices and Handling of Drinking Water Samples (Sec 3.7 Sample Storage and Transportation) as the top limit for sample temperature at receipt by the laboratory is 10 degrees Celsius.

If you have questions regarding our submission, please contact Justyna Burkiewicz, Manager, Water and Wastewater Regulatory Compliance at justyna.burkiewicz@peelregion.ca.

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