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## Guidance for Quarterly Bottled Water Container and Closure Requirement

This guidance document describes an example of an approved rinse procedure that meets Alaska Food Code regulatory requirements; which is intended to be protective of public health, less costly to the operator, and easier for the lab to test. This guidance is approved by the Food Safety and Sanitation (FSS) program as an acceptable protocol for the required quarterly container and closure sampling and may be used, as written, without additional consent. Variations and other procedures that could satisfy the regulation are possible, but must be submitted to FSS for review to ensure sampling will be acceptable for compliance purposes.

FSS requires that the operators of establishments that bottle water conduct routine sampling in accordance with [18 AAC 31.740](#). This includes a quarterly test of at least four random container and closure assemblies. The containers and closures are sampled by either a swab of the container and cap, or a rinse of the container before filling or sealing the bottle-which is the example described in this guidance document.

The chosen laboratory needs to have certified methods for total coliform and heterotrophic bacteria (HPC), which can be found: <http://dec.alaska.gov/applications/eh/ehllabreports/certmicrolabs.aspx>. This guidance is suited to laboratories that perform HPC by pour plate or by IDEXX© Multi-Dose SimPlate® (the rinse procedure described below does not work for unit dose SimPlate®).

Contact the chosen laboratory, ask if they have methods and procedures available to support quarterly bottled water tests, and then request sampling bottles and laboratory specific directions. These bottles will likely look the same as the required weekly coliform bottled water sampling bottle.

### INSTRUCTIONS FOR BOTTLED WATER PROCESSOR

You will be required to test at least four assemblies quarterly. For each test, randomly select a container and closure assembly that represents your product line. A container and closure assembly is simply one of your empty bottled water containers you use for packaging your product in.

1. The four sampling bottles from your chosen laboratory will arrive sealed and sterile with a preservative inside. Assign one of the lab issued sampling bottles to one container and closure assembly. Clearly label the sample bottle according to your laboratory's instructions.
2. Aseptically fill one lab issued sample bottle to the 100 ml line, taking care not to exceed 102 ml. Use your main water source (where you fill the water bottles during production). An aseptic fill means to fill in a manner that prevents contamination of the container and maintains sample integrity. Don't put your fingers or any utensils inside the sampling bottle or container and closure assembly. Any amount less than 100ml will not be accepted by the laboratory.
3. Pour 100ml of water from the lab issued sample bottle into the container and closure assembly. (Do not discard lab sample bottle, save aseptically for step 5.)

### Laboratory Guidance for Quarterly Bottled Water Container and Closure Requirement

4. Place the closure on the container, rinse the water around so that the entire interior surface of the bottle, including the cap, is rinsed with the sample water.
5. Remove the closure and aseptically pour the sample water back into the lab issued sample bottle and replace the cap.
6. This completes one sample for submission. Repeat the procedure for each of the three remaining container and closure assemblies.
7. On the laboratory testing order form (a.k.a. Sample Submission Form or Chain of Custody), you must remember to indicate the volume of the container and closure assembly. Without this information the laboratory may reject the sample or call for clarification which could delay the analysis.

#### LABORATORY GUIDANCE

At the laboratory, this guidance works when using either pour plate or multi-dose SimPlate® method for HPC (the rinse procedure prescribed above does not work for unit dose SimPlate®).

The HPC should be set up first. This will take about 2 mls from the submitted sample. If it was properly filled to 100ml line, that will leave you just enough (98mls) to run a coliform test. Using an IDEXX® coliform media is the easiest as it will use the same bottle and remaining volume with the least amount of additional steps. A satisfactory coliform result can be reported as 'Non-Detect' or 'Absent'.

Reporting units for HPC are generally in cfu/ml or MPN/ml depending on method performed. In this example, the HPC units of bacteria/ml, MPN/ml, and cfu/ml will be considered equivalent.

The regulatory units for the rinse of bottled water containers are bacteria per *milliliter of capacity*, so the retail volume of the container and a conversion is necessary to report for regulatory use.

First, the retail capacity of the container needs to be converted to milliliters (ml), per [Google](#)®:

1 gallon (gal) = 3785 milliliters (ml)

5 gal = 18,927 ml

The regulatory limit per 18 AAC 31.740(j)(1): "... more than one bacteria per milliliter of capacity..."

Therefore: For a 1 gal container an HPC result of 38 cfu/ml is unsatisfactory and  
For a 5 gal container an HPC result of 190 cfu/ml is unsatisfactory.

Example size containers	Full formula	Result
	$(\text{HPC result})(\text{total rinse})/(\text{Capacity in ml}) = (\text{cfu/ml})(\text{ml})$	bacteria/ml capacity
1 gallon container	$(35\text{cfu/ml})(100\text{ml})/(3785\text{ml}) = .92 \text{ bacteria/ml capacity}$	Satisfactory
5 gallon container	$(205\text{cfu/ml})(100\text{ml})/(18,927\text{ml}) = 1.1 \text{ bacteria/ml capacity}$	Unsatisfactory