GUIDELINES FOR EMERGENCY BULK POTABLE WATER TRANSPORT & USE

State of Florida

Department of Health • Department of Environmental Protection • Department of Agriculture and Consumer Services • Department of Business and Professional Regulation

Background

The use of tanker trucks to provide potable water is generally discouraged due to the difficulty in assuring the safety and security of the water. However, during an emergency, it may be necessary to transport drinking water to facilities, individuals, or organizations in impacted areas using tankers. This document is intended to be used as guidance for haulers, providers, and end users.

Water is a necessity and must be available during emergencies. The supply must be safe and properly handled or additional public health problems may occur.

Liquid Bulk Trailer & Tank Construction and Selection

All liquid bulk trailers and tanks used for transportation of potable water shall be of durable construction and cleanable. They shall be constructed of food-grade material, such as stainless steel or other material approved for drinking water contact or liquid food contact by the NSF International (NSF), the US Food and Drug Administration (FDA), the US Department of Agriculture (USDA), or the American Water Works Association (AWWA). All interior coatings, hoses, gaskets, lubricants, connections, pumps, heaters, or other water contact equipment must also be food-grade or approved for drinking water use by NSF, FDA, USDA, or AWWA.

Tanks, “water buffalos”, and bulk trailers previously used to transport petroleum products, toxic materials, firefighting chemicals, non-potable surface water, or other deleterious or hazardous substances **shall not be used** to transport or store potable drinking water.

Cleaning & Sanitizing Liquid Bulk Trailers & Tanks

Tanks used to transport potable water from an approved public water system in compliance with the Florida Safe Drinking Water Act do not need to be cleaned between frequent transports of potable water (less than a week apart), but should be rinsed with potable water between uses. https://floridadep.gov/water/source-drinking-water/content/information-drinking-water-data-base

Tanks / bulk trailers used to haul food products, such as milk, juice, and /or bulk spring water must be cleaned and sanitized prior to transporting potable water. Use of an interstate or state-certified milk or juice bulk trailer wash facility is required. The certified facility in compliance with the Food and Drug Administration Grade “A: Pasteurized Milk Ordinance (PMO) can provide a wash sticker and tamper evident cable seals to be used as proof of proper washing and sanitization.

The Florida Department of Agriculture and Consumer Services (FDACS) has a list of stations certified for dairy products:
https://www.fdacs.gov/content/download/81514/file/Bulk%20Tank%20Wash%20Stations%20FDACS.gov.pdf.

Washing stations for fruit and vegetable juices are certified by the Juice Products Association. A list can be found here: https://tankerwash.org/washfacilities/.

If a certified bulk trailer wash facility is not available, the following cleaning procedures may be employed for potable water tankers / bulk trailers, only when approved by the County Health Officer or designee:

1. Open the drain and flush with hot water.
2. Steam with an emulsifying detergent until the tank is clear. Where steam is not available, circulate the detergent at a temperature of 180 to 210°F, changing the location of the nozzle to keep the interior continuously wet from top to bottom. Return the solution to the supply tank and re-circulate until clean. A certified milk or juice trailer wash station can provide this type of wash.
3. Rinse the tank thoroughly with hot water and drain to an approved disposal facility.
4. Inspect the interior of tanks, that were used for the transport of dairy products, with a black lamp (ultraviolet) after cleaning and flushing as outlined above.
    a. Tanks shall not be used when odors or contaminants are found or suspected.
    b. Waste chlorine solutions should be disposed of at proper waste disposal sites so that their disposal does not result in fish kills, etc.
5. Clean and sanitize all hoses, connections, pumps, heaters, water pumps, gaskets, and other water contact equipment with a concentrated solution of chlorine bleach (3 oz. of unscented household bleach to 2 gallons of water).
6. Inspect newly-cleaned tanks prior to filling with potable water for cleanliness, including the absence of particulates such as rust and sediment.

CAUTION! Confined Spaces

Tanks and bulk trailers are considered confined spaces with special entry regulations. Cleaning procedures should be accomplished without entry, if possible. Residual compounds or cleaning compounds which may be introduced can cause a hazardous atmosphere to workers who enter for cleaning purposes. Tank interiors may also be extremely slippery.

Approved Water Source

Only a public water supply currently in compliance with the US Environmental Protection Agency's (EPA) or the Florida Safe Drinking Water Act may be used to fill tanks and trailers for bulk transport. Water tanks / bulk trailers may only fill at a designated location approved by the public water system or at the certified bulk trailer cleaning facility. Fill devices must include a method of backflow protection to protect the source water, such as an approved double check valve assembly, a Reduced Pressure Zone (RPZ), or an air gap.

Transported water must have a free chlorine residual between 1 ppm (mg/L) and 10 ppm at the beginning of the transport. (If chlorine combined with ammonia is produced by the water supplier, a minimum of 2 ppm combined chlorine is needed.) If the water tank is to be connected to a structure or is to be held in storage for longer than 24 hours, the high end of the free chlorine range is recommended at the beginning of the transport. Transported water tested at the destination must be at least 0.5 ppm free chlorine (or at least 1 ppm combined chlorine). See the dosage chart at the end of this document for chlorine residuals. If the entire load is to be distributed immediately at the destination of the transport, a free chlorine residual of at least 1 ppm (or combined residual of 2 ppm) is recommended.

A water sample should be taken and analyzed for coliform bacteria prior to use. During emergencies, this may not be practical or possible as determined by the local DOH County Health Officer. However, when water is transported for a sustained period of time, or the same tank / bulk trailer is making repeated trips, the water should be regularly tested for coliform bacteria.

Public Use Community Point of Distribution Sites (PODS)

When bulk water tanks / trailers are parked at a community point of distribution (POD) and made available for filling containers brought by the public, the following shall be required:

1. Source of water and washing procedures are same as listed above.
2. Continuous oversight of container filling by one or more authorized and knowledgeable adults.
3. Testing of free chlorine residual immediately upon arrival, and then every 8 hours using an NSF or EPA approved DPD (diethyl-p-phenylene diamine) type test kit.
    a. Keep the test results in a log onsite.
    b. If ambient air and transported water temperatures exceed 90^{o} F, test the water every 4 hours.

4. Maintenance of the free chlorine residual between 0.5 ppm and 10 ppm.
    a. If the chlorine residual falls below 0.5 ppm, the bulk water shall be dosed with chlorine and mixed (see chart below).
5. Water dispensed through approved potable plumbing materials, with an air gap between the bottle and the plumbing tap. Multiple taps are allowed.
6. Installation of a check valve between the tanker water outlet and the plumbing dispenser.

Only cleaned and sanitized potable water containers or food grade containers should be filled for use.

Building Connections

Section 602 of the Florida Plumbing Code requires that only potable water can be supplied to fixtures that provide water for drinking, bathing, or culinary purposes.

If the bulk water tank is to be connected on an emergency basis to the plumbing system of a building, then the following must be met:

1. Shut off the normal public water system connection at the water meter or at the building that is served by the bulk water tank. This valve must be closed and locked with a padlock.
2. All hoses, pumps, heaters, water pump, gaskets, lubricants or other water contact equipment must be food grade or approved for potable water use by NSF, FDA, USDA, or AWWA,
3. All hoses, pumps, heaters, or other water contact equipment must be cleaned and sanitized with a 200-ppm solution of chlorine bleach (3 oz. of unscented household bleach to 2 gallons of water) prior to use.
4. All couplings should be covered with caps or sanitary plastic coverings when not in use.
5. Upon each new bulk water tank connection, the water lines in the building should be flushed of air and left to stand full of new water for 20 minutes prior to use.
6. Personnel handling bulk water delivery equipment shall conduct and maintain good hygiene practices to prevent contamination.
7. Free chlorine should be tested immediately upon each new connection, and then every 8 hours using an NSF or EPA approved DPD type test kit.
    a. The test results must be kept in a log onsite.
    b. If the transported water temperature exceeds 90°F, then the water should be tested every 4 hours.
8. The free chlorine residual must be maintained between 0.5 ppm and 10 ppm.
    a. If the chlorine residual falls to 0.5 ppm, the water tanker must be replaced or the tank water must be dosed with chlorine and mixed (see chart below).
    b. If the free chlorine residual falls below 0.2 ppm, (combined chlorine residual less than 0.6 ppm) then the piped water used in the building must be boiled or disinfected prior to using for drinking, ice-making, beverages, handwashing, cooking, cleaning food contact surfaces, and dishwashing in accordance with the State of Florida Industry Bulletin on Boil Water Notice Guidelines. (see weblink below)
9. If the building is expected to use tanks / bulk trailers as their emergency source of water for three days or longer, then a bacteriological sample should be collected and tested for coliform bacteria when each new tanker connects to the building, unless a state-certified laboratory is not practically available to test the water.
10. Bacteria test results showing Presence of coliform bacteria requires immediate chlorine dosing of the tanker water to achieve 5ppm as noted in the chlorine dosage charts.
11. Notify the regulatory food agency with jurisdiction over the facility within 24 hours that an emergency bulk water source will be used and provide a copy of the signed Bulk Water Hauling Notification Form to the agency with jurisdiction.

If the end user fails to meet the above standards, or when the continued use of the water, in the determination of the Department of Health's County Health Officer, presents an imminent and substantial danger to public health, the Department of Health or Department of Environmental Protection shall have the authority to declare a water tank / bulk trailer connection as non-potable water. In such event, the facility must use boiled or disinfected water for drinking, ice-making, beverages, handwashing, cooking, cleaning food contact surfaces, and dishwashing in accordance with the State of Florida Industry Bulletin on Boil Water Notice Guidelines, found here:

www.FloridaHealth.gov/environmental-health/drinking-water/2019-hurricane-letter-food-bulletin-bwn-guidelines.pdf

Chlorine Dosage Charts
Chlorine for disinfection should be liquid sodium hypochlorite or granular calcium hypochlorite.
Do not use scented bleach or stabilized chlorine pool tablets.

Amount of chlorine compound to introduce 1 ppm free chlorine

	Volume of Water (gallons)				
Type of Chlorine	**50**	**100**	**500**	**1000**	**5000**
Household Bleach[1]	0.75 tsp	1.5 tsp	7.5 tsp	3 oz	13 oz
Liquid Pool Chlorine[2]	0.3 tsp	0.67 tsp	3 tsp	1.1 oz	0.67 cup
Calcium Hypochlorite Granules[3]	--	--	--	0.2 oz	1 oz

Amount of chlorine compound to introduce 10 ppm free chlorine

	Volume of Water (gallons)				
Type of Chlorine	**50**	**100**	**500**	**1000**	**5000**
Household Bleach[1]	7.5 tsp	3 oz	12 oz	1.5 pt	1 gal
Liquid Pool Chlorine[2]	3 tsp	1.1 oz	0.67 cup	1.4 cup	3.4 pt
Calcium Hypochlorite Granules[3]	--	0.2 oz	1 oz	2 oz	10 oz

[1] Unscented bleach. Sodium hypochlorite solution at 5.25% - 8% available chlorine. Available under trade names “Clorox”, “Roman Cleanser”, “Purex”, and others. (Manufacturer’s names for information purposes and do not show preference)

[2] Sodium hypochlorite solution at 12.5% available chlorine. Available under trade names “Sun Chlorine”, “Blue Whale”, “Pool Tech”, and others. (Manufacturer’s names for information purposes and do not show preference)

[3] Calcium Hypochlorite granules or tablets at 70% available chlorine. Available under trade names “HTH”, “Zappit”, “Sentry”, and others. (Manufacturer’s names for information purposes and do not show preference)

Contact Information
For additional information, please contact your local County Health Department or the Florida Department of Health Bureau of Environmental Health at 850-245-4240.

http://www.floridahealth.gov/environmental-health/drinking-water/index.html