



Guidelines for Hauling Bulk Drinking Water for Emergency Distribution

Target Audience

These guidelines are for businesses, associations, or individuals that need to deliver potable water to the public during emergencies. Public drinking water system utilities should contact their appropriate Department of Natural Resources (DNR) regional office before beginning a water hauling operation.

Although the Missouri Department of Health and Senior Services (DHSS) does not encourage this method of supplying water, trucked water may be the only viable alternative in some situations.

When trucking water, there are important considerations for protection of public health. Water transported following these guidelines should be safe for human use and consumption, protect the public from water-borne illness, and is considered potable water.

DHSS recommends that someone with water treatment expertise be responsible for the operation and management of trucked potable water. Usually this expertise can be found within municipal water utilities or within businesses that transport liquid foods or milk.

Source of Water

The source for emergency trucked water must come from an approved public water supply. Another source of water (i.e., private well) can be used only with written approval from DHSS or the Local Public Health Agency. The unapproved source must be shown to be safe to use by bacteriological, and possibly chemical and radiological testing.

Every precaution should be taken to ensure that the water remains potable once it is collected and transported. The receiving water system should

check that the truck hauler is familiar with proper handling procedures at the source and during transport.

Truck Container

The truck container must be contaminant-free, watertight, made of a water-grade approved material that can be easily cleaned and disinfected. The container must also be capable of being maintained so that water contamination is prevented. The tank truck or trailer used for transport shall be labeled "Drinking Water." In most cases this can be accomplished by means of a tag affixed to the outlet. Tanks, which have been previously used to transport chemicals, petroleum derivatives, etc., shall not be used for hauling drinking water. Appropriate trucks include milk trucks, military-style water trucks, or others designed for the transport of liquid food products.

Tanks should be filled and emptied through an air gap to prevent backflow and contamination of the source. Tank inlets or openings should be covered and properly sealed. A drain shall be provided which will completely empty the tank for cleaning or repairs. All containers must be completely enclosed. The cover shall be kept sealed, or locked, to protect the water from tampering. The tank shall have a manhole and a manhole cover that overlaps the raised manhole opening to a minimal height acceptable for sanitary protection and terminates in a downward direction. Containers that are open to the atmosphere during hauling, unless the opening or vent is located to minimize the possibility of drawing contaminants into the water and sanitarily screened, are not acceptable for use.

Initial Truck or Tank Disinfection

To insure that water-hauling equipment is adequately disinfected before using, the tank or truck container, along with all hoses, pumps, and other equipment, must be cleaned and then sanitized by a sanitizer listed in 21 CFR 178.1010. These sanitizing solutions shall be used in accordance with

the Environmental Protection Agency (EPA)-approved manufacturer's label use instructions. Normally, these sanitizers will be chlorine, iodine, quaternary ammonium, or acid-based aqueous solutions. For chlorine, fill the tank with a 50 ppm solution and allow the water stand for a minimum of 24 hours. Contact DHSS or the Local Public Health Agency if additional guidance is needed in disinfecting the container.

Handling

All hoses and other handling equipment used in the operation must be stored off the ground at all times. They must be thoroughly flushed, disinfected, and then flushed again with the source water prior to use. Hoses should be capped at each end, or connected together, when they are not in use. The sanitizing solution should be the same as that used for disinfecting the truck container.

All equipment surfaces that contact the potable water, including fill-point equipment, containers, caps, valves, filters, fittings, pumps and other plumbing attachments should be regularly inspected and either disinfected or replaced as needed.

All equipment associated with water collection, transport, and delivery should be designed specifically for potable water, (i.e., safe, durable, corrosion-resistant, nonabsorbent, and finished to have a smooth, easily cleanable surface) used only for that purpose, and labeled for drinking water only. While equipment used for food purposes may be sanitized and put into use, in no case should equipment, including pumps, be used that have previously been used for wastes or chemicals.

Water to be transported by tank trucks should contain a free chlorine residual of one part per million (1 ppm or 1 ml/l or 1 mg/l) and not more than 4 ppm at the beginning of the haul. This is done by adding 5-6 tablespoons (2.5 – 3 ounces) of common household bleach to each 1,000 gallons. The bleach should be 5.25-6 percent strength, unscented and without additives. It should be added in proportion to the quantity of water during filling to insure uniform distribution. Chlorine residual should be measured frequently to insure that a minimum of 0.2 ppm free chlorine residual is maintained. Free chlorine residuals can be

measured with pool test kits that measure in 0.2 ppm increments or smaller.

Receiving Tank or Water System

If the receiving system or tank is part of an approved public water system then the managers of that system should have insured that the system is safe to be filled from the transporting tank or truck. In such cases valve to valve distribution into the receiving system is permissible. In some cases smaller distributing tanks may need to be filled. These tanks or containers should meet the same criteria for materials and sanitization as the transporting truck or tank, and may be filled in an approved sanitary method (i.e., valve to valve or air gap) using proper handling equipment as previously described. In emergency cases where individual distribution to the public-at-large is required from the transporting container, a system using sanitized and approved water-handling apparatus, including spigots, should be designed for the filling of individual containers.

Documentation and Record-Keeping

The receiving water system is responsible for documenting and keeping proper records of the emergency trucked water operation. Proper documentation can be obtained through a bill of lading for each load, which is to include:

- written records of the names and contact numbers of the hauler(s);
- the quantity delivered;
- the approved water source(s) used;
- dates and times of delivery, free chlorine residual at point of delivery;
- assurance by the hauler (or a representative of the receiving system at the fill site) that proper disinfection was performed for each trip; and
- the chlorine dose at the fill point and the free chlorine residual, if taken, after filling.

These records should be retained in a log for at least six months for review upon request by health agencies, haulers, or the supplying water system.

Questions?

Contact DHSS toll-free at 1-866-628-9891, or your Local Public Health Agency for more information.