
ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-DWGB-18-2

2014

Emergency Bulk Water for Public Water Systems

In the event of equipment failure, water quality or quantity problems, or other unexpected circumstances, a Public Water Supply (PWS) may need to purchase bulk water from an approved source to maintain an adequate water supply. Although NHDES does not encourage this method of supplying water, trucked water may be the only viable alternative in some situations. Env-Dw 304 Emergency Bulk Water Supply for Public Water Systems defines state requirements to ensure that water obtained from bulk water deliveries meets the same water quality standards that are required of public water suppliers.

Bulk Water Source Requirements

A PWS can obtain emergency bulk water from the following three NHDES approved sources.

1. A community water system (CWS) source that has been approved by NHDES and is in compliance with all relevant requirements.
2. A bottled water source that has been approved by NHDES.
3. A CWS source or bottled water source approved by another state.

If there is any treatment or blending of the sources described above, bulk water should only be obtained from the finished water.

Groundwater sources that are not approved CWSs can be used as long as they have been inspected, meet specific sampling requirements, and are approved and registered by the Drinking Water and Groundwater Bureau (DWGB) *prior* to use. To acquire DWGB approval of a groundwater well for emergency bulk water, the well must conform to the following requirements.

- The well was installed by a licensed well driller in accordance with standards established by the water well board. If the well was installed before August 17, 1983, the well should be adequately constructed to prevent the direct introduction of contaminants from the surface into the well.
- The well is located at least 50 feet away from surface water.
- The owner of the source initiates and maintains a water quality sampling program that shows that the water meets the standards defined in Env-Dw 304.04 Water Quality Sampling Program.
- The owner of the source submits analytical results to the department immediately whenever any sampling result exceeds the maximum contaminant level.
- A site visit by NHDES once every 5 years to confirm fulfillment of the above requirements.

Contact DWGB to make arrangements to apply for approval of a non-CWS emergency bulk water source.

Surface water cannot be used for emergency bulk water unless it is finished water from an approved CWS.

Equipment Used to Transport Bulk Water

Equipment surfaces that come into contact with water during transport of bulk water must be well maintained and be made of material that is smooth, impervious, nonabsorbent, corrosion-resistant and non-toxic, such as stainless steel. While stainless steel tanks are preferred aluminum tanks are also allowed. Tanks shall be of the type that can be closed to exclude all foreign matter and vents on tanks shall be protected to prevent contamination of the bulk water during filling and emptying. Bulk water should be stored, loaded, transported, and unloaded in a manner that prevents contamination.

Tanks previously used to carry any non-food products, toxic substances, or petroleum products may not be used unless the tank is approved by DES after the following is completed.

- The tank must be thoroughly cleansed using appropriate sanitation methods to remove all previously transported products.
- The tank should be filled with drinking water and be tested for the presence of contaminants associated with the products previously stored in the tanks and the chemicals used for cleaning.
- The two processes above should be repeated until there is no trace of contaminants.
- Pipes, hoses, fittings and valves associated with the tank must be replaced with equipment not previously used to transport petroleum products, toxic substances or any non-food products.

Equipment Sanitation

Prior to receiving each load of water, the tank and all hoses, pipes, pumps and other handling equipment should be visually inspected to ensure that no rust or sediment is present. If any is found it should be removed by rinsing and flushing. Tanks and equipment that have been previously used to haul petroleum products, toxic substances, non-food products, food products or a water source that is not an approved source must be disinfected by using one of the following methods.

- A chemical sanitizer having an equivalent bactericidal action to 50 mg/l available chlorine for 2 minutes at 57°F as an immersion or circulating solution for the entire tank volume.
- A chemical sanitizer having an equivalent bactericidal action to 100 mg/l available chlorine at 57°F applied as a spray or fog.
- An ozone water solution with a concentration of 0.1 mg/l of ozone for 5 minutes as an immersion or circulating solution to sanitize the entire tank volume.
- Liquid sodium hypochlorite bleach used to disinfect hauling equipment should not contain additives such as scent or cleaning enhancers or odorants and be mixed in the proportions identified in the following table.

**Amount of Liquid Sodium Hypochlorite having 5.25% Available Chlorine
Per Volume of Water to Obtain Resulting Solution**

Amount of Water→					
Resulting Solution Concentration (mg/l) ↓	50 gallons	100 gallons	500 gallons	1,000 gallons	5,000 gallons
1	0.75 teaspoon	1.5 teaspoons	7.5 teaspoons	2.5 ounces	12.5 ounces
50	6.25 ounces	12.5 ounces	2 quarts	1 gallon	5 gallons
100	12.5 ounces	25 ounces	1 gallon	2 gallons	10 gallons

Delivery

A certified operator representing the PWS must be present during the water delivery to ensure that all necessary sanitary measures are met and followed during transfer of water into the system's storage tank. The operator should provide the bulk water hauler the following information to help save valuable time in a water shortage situation, including emergencies:

1. Detailed directions to your water system and any access limitations to the tank.
2. Diameter of your fill pipe on your atmospheric tank.
3. The thread pitch (threads per inch length) or other description of the connection point. Determine who supplies pipe or connectors necessary for the transfer.
4. Indicate whether a pump is necessary to unload the water and, if so, who will supply the pump and the amount of lift needed.
5. An estimate of the water volume that may be accommodated in your tank and the best time of day for delivery.
6. Road and bridge weight restrictions en route to the water system.
7. Contact information for last minute changes in the plan. Ideally provide a cell phone or pager number.
8. An estimated number of loads that will be required.
9. Discuss payment terms.

Before allowing delivery of bulk water into the PWS, the certified operator must measure the free chlorine residual of the bulk water to ensure a concentration between 0.2 mg/l and 4.0 mg/l. If the free chlorine residual is not between 0.2 mg/l and 4.0 mg/l, the certified operator will need to add the appropriate amount of sodium hypochlorite to produce the required concentration.

It is advisable to establish a working knowledge of your bulk water hauler's procedure to obtain, transfer and provide bulk water prior to use of their services. There will be many different scenarios depending on the system requirements, availability of potable emergency water sources and limitations (regional and seasonal) on the water hauling providers. For additional information regarding options of for your storage tank fill point, please review fact sheet WD-DWGB-7-7, "Providing a Storage Tank Fill Point For Emergency Water Delivery."

Bulk water should be delivered into a storage tank or pump house tap. Water delivered directly into a well is a violation of Env-Wq 404 Underground Injection Control.

Bulk Water Providers

For a list of possible bulk water haulers in your area, visit

<http://des.nh.gov/organization/divisions/water/dwgb/wseps/documents/bulk-haulers-providers.pdf>.

While the bulk water providers listed are not licensed by NHDES, they have chosen to register with NHDES and have provided information that they are meeting bulk water requirements under Env-Dw 304. A bulk water provider can be used that is not on this list as long as they meet the requirements of Env-Dw 304.

Notification and Documentation

The owner of the receiving PWS is responsible for keeping proper records and making sure that NHDES is notified within 2 business days after emergency bulk water is delivered to customers using the **Bulk Water Delivery Notification Form**. The form should be signed by the certified operator representing the PWS. The form can be found on the web by going to the NHDES website and clicking the A to Z list 'Bulk Water for Public Systems' and then clicking on 'Bulk Water Delivery Notification Form' or by clicking the following link:

http://des.nh.gov/organization/divisions/water/dwgb/wseps/documents/bulk_h2o_deliv_notice.pdf.

The PWS should retain a copy of the notification form for at least 5 years. The PWS must also list any bulk water deliveries in their annual consumer confidence reports.

Emergency Plans

For community water systems, details regarding bulk water procedures should be included in your system's emergency plan. Your plan should include at a minimum:

- This fact sheet and the NHDES "Guidelines for Emergency Bulk Water Supply for Public Water Systems" brochure.
- Details regarding who will be responsible for filling out the Bulk Water Delivery Notification Form and submitting it to NHDES.
- Contact information for the bulk water provider that has agreed to provide the system with emergency bulk water.
- The procedures specific to the system for delivering the bulk water such as specific equipment needed.
- Estimated timeframe for delivery to arrive.
- Alternate plan for water should your first option not work out such as contacting a second bulk water provider or purchasing bottled water from local stores.

It is essential that all water systems plan for the possibility of having to provide water from an outside source during an emergency. For larger systems, tank trucks may not be a viable alternate water source option due to high volume needs. If you do not have an atmospheric storage tank, bulk water delivery from a tank truck is not an option. If you simply plan on using a bulk water company it is recommended that you contact the water hauler directly. You don't want to find out that it is not feasible to receive bulk water during an emergency. Preparing written agreements with the bulk water haulers that you contacted and including them in your plan may also be useful.

Long Term

For an alternate or long-term solution, refer to fact sheet WD-DWGB-18-4 "Emergency Water Supply Wells for Public Water Systems" or WD-DWGB-1-16 "Water Supply Options During Droughts".

For Additional Information

For more information, please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.state.nh.us, or visit our website at <http://des.nh.gov/organization/divisions/water/dwgb/index.htm>. All of the bureau's fact sheets are online at <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm>.

Note: This fact sheet is accurate as of July 2014. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.