



Drinking Water Hauling Guidelines

Introduction

The mission of Oregon Health Authority Drinking Water Services (DWS) is to *ensure that all Oregonians have access to safe drinking water*. Although hauling water for drinking purposes is not regulated in Oregon, DWS has developed the following guidelines to help haulers ensure the delivery of safe drinking water.

Source of water

DWS strongly recommends using a public water system for the water supply source. Haulers should complete the following steps before using a public water system:

1. **Verify the source** is a regulated public water system by checking <https://yourwater.oregon.gov/>. Consider checking for any current advisories in place and reviewing the violations assigned to the water system. If you have questions, contact DWS at 971-673-0405.
2. **Contact the public water system** that will potentially serve as your source. Ask questions such as the following:
 - Does the water system already have a location in their distribution system set up for supplying tanks with water?
 - Does the water system require payment for the water to offset their operating costs?
 - They may operate a wastewater treatment facility. If you use their wastewater collection system to dispose of an emulsifying detergent used to clean your tank or high levels of chlorinated water used for disinfection, will this affect their treatment process?

Equipment preparation

Tanks used for hauling drinking water should be of an acceptable type. DWS recommends using tanks previously used for hauling only water or food-grade materials.

DWS strongly recommends *not* using tanks that have previously hauled *any fuels* because lead and other materials in the fuels can be absorbed into the tank over time and leach back into the water during transport. Before use for hauling water, fuel tanks should be steam cleaned for a minimum of 90 minutes. Also, lead and volatile organic chemical (VOC) analysis should be completed for water that has been inside the fuel tank for 24 hours. The results from the analysis must be below maximum contaminant levels (MCLs) established by DWS regulations.

All tanks should be visually inspected, scrubbed, flushed, and disinfected before hauling water to customers. Following are two sets of instructions—one for preparing tanks previously used for hauling water and one for tanks previously used for hauling food-grade materials.

Tanks previously used for hauling water

1. **Inspect.** Visually inspect all equipment to ensure its integrity.
2. **Scrub and rinse.** Remove all rust and sediment from the tank by scrubbing with water containing 200 parts per million (ppm) chlorine. Chlorine bleach can be used for the scrubbing solution as follows:

200 ppm chlorine = 2.5 ounces (1/3 cup) of chlorine bleach for every 5 gallons of water used in the solution.

All hoses, pumps, and other equipment that will be in contact with the water should be disinfected in the same manner. After the tank and equipment has been scrubbed, rinse everything.

3. **Disinfect.** After scrubbing and rinsing the tank, fill it with water containing 50 ppm chlorine. The chlorinated water should stand in the tank for at least 30 minutes, until you are ready to haul. Chlorine bleach can be used as follows:

50 ppm chlorine = 2 quarts of chlorine bleach for every 500 gallons of water used to fill the tank.

All hoses, pumps, and other equipment that will be in contact with the water should be disinfected in the same manner.

4. **Drain and rinse.** When you are ready to fill the tank with drinking water, drain the chlorinated water and rinse the tank before filling.

Tanks previously used for hauling food-grade materials

1. **Inspect.** Visually inspect all equipment to ensure its integrity.
2. **Scrub and flush.** Scrub and flush the tank and equipment with warm water.
3. **Clean.** Clean the tank with the injection of an approved (written on the manufacturer's label) emulsifying detergent until the tank and equipment are clean:
 - Use the amount specified on the manufacturer's label.
 - Maintain a minimum temperature of 140 degrees.
 - Change the location of the nozzle to continuously keep the interior wet from top to bottom until the tank is clean.
5. **Rinse.** Rinse the tank thoroughly using warm water.
6. **Disinfect.** Fill the tank for disinfection purposes with water containing 50 ppm chlorine (described in the previous section) for at least 30 minutes, until you are ready to haul. All hoses, pumps, and other equipment that will be in contact with the water should be disinfected in the same manner.
7. **Drain and rinse.** When you are ready to begin hauling water, drain the chlorinated water and rinse the tank.

Note: The food industry has facilities for cleaning and disinfecting tanks used in hauling food-grade materials. You may want to contact a facility to arrange for cleaning and disinfecting your tank and equipment there.

Note: Aluminum tanks and tanks with plastic or other types of organic coatings may be affected by heat or alkaline materials. When these types of tanks are to be cleaned using emulsifying detergents, contact the manufacturer of these tanks and follow their recommendations.

Transportation

After your equipment has been inspected, scrubbed, flushed, and disinfected, it is ready for hauling water. You should also test the water to ensure it is safe for drinking purposes. The water should contain a "free" chlorine residual of 1 ppm. The chlorine disinfects organisms that may be present in the water and can cause illness. These organisms may be introduced into the water through the handling of equipment. To verify the water is adequately disinfected, follow these steps:

1. Use a chlorine test kit that can measure free chlorine residual. These test kits are available at swimming pool and spa supply stores. DWS recommends using a DPD test kit that can measure a free chlorine residual between 0.2 milligrams per liter (mg/L) and 3.0 mg/L.

Note: One milligram per liter (mg/L) is equal to one part per million (ppm).

2. Many public water systems chlorinate their water for disinfection purposes; therefore, you should measure their water for free chlorine residual before filling your tank. If the measured residual is between 0.5 ppm and 1.0 ppm, you have adequate disinfection for hauling. Be sure to record the date, time, and measured free chlorine residual.
3. If the source of water does not have a chlorine residual measured between 0.5 ppm and 1.0 ppm, disinfect the water at 1 ppm by adding chlorine bleach while filling the tank as follows:

1 ppm chlorine = 2.5 ounces (1/3 cup) of chlorine bleach for every 1000 gallons of water used to fill the tank.

Once the tank is filled, check the free chlorine residual. Be sure to record the date, time, and measured free chlorine residual.

4. Your tank should be filled through an air gap to prevent backflow conditions from occurring. Once the tank is filled, it should be covered and tightly sealed.
5. All hoses used in the operation should be stored off the ground at all times. Cap the hoses at both ends when not in use.
6. Haul the drinking water to the customer's location. Follow these steps after arriving:

- A. Measure the free chlorine residual upon arrival. Be sure to record the date, time, and measured free chlorine residual.
- B. Inspect the customer's receiving tank(s) with the customer before filling. The customer should have cleaned and disinfected the receiving tank(s) before your arrival. Comments regarding the condition of the receiving tank(s) should be documented in your records.
- C. The customer's receiving tank(s) should be filled through an air gap to prevent backflow conditions from occurring.

Repeat hauling

If you haul drinking water daily, you do not need to scrub, flush, and disinfect your tank and equipment between each haul. For each trip, repeat the guidelines described in the Transportation section.

If you haven't hauled drinking water (or anything else) for several days, disinfect your tank and equipment with water containing 50 ppm chlorine before hauling again. Disinfecting with 50 ppm chlorine is described in the Equipment Preparation section. After disinfecting the tank and equipment, repeat the guidelines described in the Transportation section for day-to-day operation.

If you have stopped hauling drinking water and have since hauled food-grade materials in your tank, repeat everything described in the guidelines for tanks used for food-grade materials.

Recordkeeping

Keep complete records of every delivery. By keeping records, you will greatly reduce liability issues surrounding disease outbreaks at your customers' locations. You will also be able to provide the customer with pertinent information regarding the safety of the hauled water. Records should include the following information:

1. Public water system used for the source of water.
2. Name and address (location) of customer.

3. Date, time, and free chlorine residual after filling the tank with water for hauling.
4. Date, time, and free chlorine residual after arriving at the destination.
5. Notes regarding the receiving tank and any other significant items.

Attached to the guidelines is a form you may use for keeping records. Make additional copies of this form as needed.

For more information, visit www.healthoregon.org/dws. You can also call Drinking Water Services at 971-673-0405 or email Info.DrinkingWater@odhsoha.oregon.gov.

