

**POTABLE WATER STANDARDS**  
**OKANOGAN, WENATCHEE AND COLVILLE NATIONAL FORESTS**

**Revised 02/17/2005**

Only properly constructed and fitted vehicles totally dedicated for potable water shall be used. Any tank previously used for hauling petroleum products or non-food material will not be used as a potable water vehicle. Tanks shall be permanently mounted to the transport vehicle. Where doubt exists with respect to their adequacy for potable water supply use, tanks may be turned down for use as a potable water vehicle.

If it is discovered that any of the requirements for usage as a potable water vehicle have been violated, contractual remedies shall be taken immediately.

**1. Equipment Requirements**

A. General Requirements

(Reference: Code of Federal Regulations, Title 21, Part 129.40):

All water contact equipment shall be suitable for its intended use, including tanks, surfaces, hoses, pumps, valves, fittings, and lubricants. All such equipment shall be constructed of non-toxic, non-absorbent material which can be adequately cleaned and sanitized. All equipment shall be constructed so as to allow inspection and adequate sanitation of water contact surfaces.

Operators must possess a valid commercial driver's license (Class A or B) with tanker endorsement. Tanks shall be full or empty when traveling to prevent shifting of weight. Response to an incident shall be empty. "Wet" means contractor furnishes fuel and operating supplies.

B. Tank

Acceptable: Non baffled stainless steel, food contact plastics (polyethylene); food contact epoxy coatings. All tanks shall be built for liquid transport that will withstand shifting weight.

Unacceptable: BAFFLED TANKS, BLADDERS, NONCOATED STEEL OR GALVANIZED STEEL; ALUMINUM, FIBRE GLASS, RUSTED OR CRACKED SURFACES; TAR, BITUMINOUS, OR ASBESTOS COATING; COATING UNDOCUMENTED AS FOOD CONTACT.

C. Tank Construction

Openings: Hatches and other openings, except fittings for water entry or discharge, shall be completely covered and sealed with tight fitting coverings, permanently mounted food contact gaskets, with security locks. Water fittings shall be equipped with clamp or screw-type caps, tethered to the fittings with chain or cable. These caps shall be in position on the fittings whenever they are not used for water transfer.

Tank Vents: Tank shall be vented with protected vent opening of a sufficient size to allow air to replace water as it is discharged. This opening shall be protected by an adequately supported fabric, paper, or metal filter material capable of removing fine dust particles from the air.

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Drain: A bottom drain shall be provided to facilitate complete discharge of water during sanitation procedures.

D. Vehicle Tank Filling Mechanisms

Tanks shall be filled by using a system that prevents backflow of water from the vehicle tank to the source. Tanks shall be a closed system with check valves or backflow preventers. No external filling of tank through open hatches is allowed. Only the following method may be used:

Approved double check valves on the direct filling connection to the tank.

E. Pumps

Tanks shall be equipped with a pump for off loading . Only water transfer pumps which can be readily disassembled to demonstrate the condition of the impeller and impeller chamber shall be used.

Acceptable: Food contact pumps, constructed from stainless steel, food contact plastic, or brass, **FURNISH DOCUMENTATION THAT PUMP MEETS THESE REQUIREMENTS.**

Water contact surfaces, including seals, bearing, and lubricants must be constructed from food contact materials and must be smooth, non-porous, and corrosion resistant. Acceptable food contact lubricants are usually white or pastel colored.

F. Hoses

The ends of all hoses shall be provided with threaded or clamped caps. Such caps shall be in place when hoses are not in use. A tight, clean storage compartment can substitute for hose caps if the hoses are stored within the compartment at all times except during use for transfer of water.

Acceptable: Hoses shall have approved food contact water contact surfaces prepared from plastic, synthetic rubber, or other smooth nonporous material. All hoses shall be factory marked on the outside of the hose as "drinking water".

**UNACCEPTABLE: RUBBER HOSES, GARDEN HOSES, CANVAS FIRE HOSES, RADIATOR OR ENGINE COOLING SYSTEM HOSES, SURFACE-WATER DRAFTING HOSES**

G. Other Equipment Accepted on Vehicle

Capacity Vehicles shall have a minimum capacity of 1,000 gallons

Piping and Fittings : Food-grade plastic or acceptable metal (brass, stainless steel, copper). Corroded steel, galvanized pipe, or black pipe are not allowed. Aluminum cam hose connections are acceptable.

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Canteen Filling Equipment: Must be equipped with a minimum of ten outside permanently mounted and pressurized spigots/valves for filling canteens, and cubitainers. Must have effective backflow prevention (check valves), and dispensing spouts or hose bibs.

Miscellaneous Equipment: Potable water heaters, pressure tanks, and other equipment for operation of shower and kitchen units are allowed.

UNACCEPTABLE: SPRAY BARS, FIRE HOSES AND NOZZLES, SURFACE-WATER DRAFTING EQUIPMENT.

## **2. Labeling Requirements**

- A. The following statements must be fully visible and legible at all times, permanently attached to or painted on the vehicle:
- (1) Name and address of licensee, on both sides of the tank or on both truck cab doors in letters of at least 2 inches in height.
  - (2) The words "domestic water," "drinking water," or "potable water" on both sides of the tank in letters of at least 4 inches in height.
  - (3) The gallon capacity of the tank on both sides of the tank or on both cab doors in letters of at least 2 inches in height.
- B. A current cleaning certificate in compliance with Item 3 is required . In cases where stickers are not provided by a State, a copy of the cleaning certificate or label will be kept in the vehicle at all times.
- C. Documentation of a current U. S. Department of Transportation (U.S. DOT) annual mechanical safety inspection is required be carried in the vehicle. A U. S. DOT annual inspection or a current Commercial Vehicle Safety Alliance (CVSA) inspection will meet the mechanical safety inspection requirement of this agreement. Documentation of a current CVSA inspection must be displayed on the vehicle.

## **3. Operational Requirement**

- A. All equipment surfaces intended for potable water contact, including source fillpoint equipment, containers, caps, tanks, hoses, valves, filters, and fittings shall be inspected, washed, rinsed, sanitized, and replaced as often as necessary to effect and maintain sanitation of such surfaces. Procedures to be used are listed in Title 21, Code of Federal Regulations, Part 129.80.

The contractor shall furnish food-grade one-time use latex gloves for operator's use in handling potable water equipment.

If household chlorine bleach (5% chlorine) is used as a sanitizer, use approximately 2-3 cups of chlorine bleach in 1,000 gallons of water. Agitate chlorine solution thoroughly and allow

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contact with tank and hoses for at least 30 minutes. Run chlorine solution to waste through delivery hoses. The tank must then be thoroughly rinsed with potable water before filling.

Every potable water vehicle must be equipped with an EPA approved chlorine test kit for testing to determine the amount of chlorine needed to provide proper disinfection.

- B. Sanitary techniques must be observed in the water transfer operation. Care must be exercised to prevent foreign materials from entering the water. Since contamination could be present on the exterior surfaces of hoses or pipes, they must never be submerged in a receiving vessel. Caution and common sense will help insure a satisfactory operation.
- C. Adequate cleaning and sanitizing procedures as described in 3.A above, shall be used on hauling vehicle and associated equipment at the following times:
- (1) When the equipment is placed into service, or when it has been unused and stored in a sealed condition for a period of 12 weeks or more. NOTE: At pre-season inspection, Inspector must cut the seal. Be sure to obtain a second seal to replace the cut seal after inspection.
  - (2) When the filled or empty tank has been exposed by open or unsealed cover caps or fittings to any condition of possible contamination of the tank or contents, including contact with dust, smoke, rain, or chemical substances.
  - (3) When any fault or defect becomes apparent in the seals, vents, hatch doors, welds, valves, pipes, pumps, hoses or other equipment which may allow the water to become contaminated.
  - (4) When bacterial analysis of the water indicates presence of *coliform* bacteria.
- D. Bacteria Testing
- One microbiological test for total *coliform* bacteria shall be performed within 48 hours of the time of arrival at the incident unless the timing would interfere with the laboratory processing. It shall be performed at the earliest possible time that processing can be done. The Facilities Unit Leader shall provide copies of the results of such test to the Contracting Officer.
- The Government is responsible for selecting the water source. The hydrant will be dedicated to potable water. Upon initially opening hydrant, Government or contractor shall run out at least 500 gallons, (or for about three minutes) before filling the tank the first time and before bacteria testing.
- E. Water shall not be stored in the vehicle for a period of greater than one week.
- F. The hauler shall keep a log of activities (sample log sheets enclosed) on board the vehicle including:
- (1) Dates of cleaning and sanitation procedures; description of processes used (cleaning agents, contact time and concentration of sanitizing agent).
  - (2) Water sources used, dates, gallonage, name of person who authorized/directed use of source.
  - (3) Delivery points; dates.

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(4) Copies of agreements, contracts, licenses, etc.

(5) Test results of bacterial analysis.

G. General Information on Disinfection

Disinfection destroys disease-producing organisms in water exposed to bacterial contamination. Hauled water is vulnerable to increased handling, diversity of source, and variability in hauling equipment must be disinfected before use. In addition, all water-contact surfaces in hauling and storage facilities must be disinfected prior to use.

Household chlorine bleach, (5% chlorine) such as Clorox® or Purex®, is suitable for water disinfection. Instructions for obtaining proper concentrations are provided on attached charts in this bulletin. Details in the charts should be closely followed.

Less than 100% of the chlorine added to water contributes to the disinfection process. A portion of the chlorine combines with naturally-occurring chemicals in the water and is "tied up." This is called "Chlorine Demand." Chlorine added in excess of the amount required to satisfy the chlorine demand is referred to as "residual chlorine" and is available for the disinfection process. The attached chlorine concentration chart is approximate and does not take into account Chlorine Demand. The residual chlorine test will serve as a positive check and assure the hauler and consumer of adequate protection.

Residual chlorine levels should be determined after the recommended contact time has passed. If the measured residual chlorine is lower than required, additional chlorine must be added to the water until the necessary residual is obtained. Though it is not necessary to determine residual levels in the solution used to disinfect water-contact surfaces, this determination is essential for evaluating water that is to be consumed.

Mix added chlorine by connecting discharge hose to hatch and pumping through the system for a minimum of five minutes.

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**MIXING INSTRUCTIONS FOR**  
**VARIOUS CHLORINE SOLUTIONS**

**FOR CONSUMPTION**

1.0 PPM AND 10.0 PPM CONCENTRATION TO DISINFECT A TANK FULL OF WATER (Use fresh liquid household bleach having about 5% Sodium Hypochlorite content.)

<u>Tank Capacity</u> <u>Gallons</u>	<u>Column "A"</u> <u>(for 1.0 ppm) *</u>	<u>Column "B"</u> <u>(for 10.0 ppm) **</u>
250	1-1/4 tablespoons	3/4 cup
500	2-1/2 tablespoons	1-2/3 cups
1,000	1/3 cup	3-1/4 cups
1,500	1/2 cup	4-3/4 cups
5,000	1-1/2 cups	1 gallon

\* For water drawn from acceptable public water supplies, minimum contact time is 30 minutes.

\*\* For emergency water drawn from questionable source, minimum contact time is one hour.

\*\*\* Mix chlorine solution thoroughly as described in 3G and allow contact with tank and hoses for at least 30 minutes.

