

Aquatic Nuisance Species Prevention Measures Contract Specifications

The U.S. Army Corps of Engineers, Kansas City District (KCD) has implemented special regulations to prevent contamination with aquatic nuisance species (ANS), particularly zebra mussels and to prevent their spread to other areas. Zebra mussels and other ANS can be transported by boats, trailers, outboard motors and other equipment such as tractors, bulldozers, water pumps, ropes and nets that are used in areas that ANS inhabit. In KCD, zebra mussels have been found in several lakes and river systems and it should be assumed that equipment on this project will be exposed to zebra mussels. If equipment is not properly inspected and treated to prevent the spread of zebra mussels and other ANS, they can be introduced into areas not currently infested. To assist in preventing the introduction and spread of ANS as a result of work contracted by the U.S. Army Corps of Engineers, the following precautions shall be taken:

- Prior to transporting, visually inspect all equipment for zebra mussels and other ANS. All trash, mud, vegetation, and suspected zebra mussels should be removed, placed in plastic bags and properly disposed of in land-based receptacles. All equipment must be thoroughly cleaned, dried and or decontaminated prior to arriving at any Corps of Engineers job site.
- All equipment and supplies intended for use in KCD waters that has been exposed to other lake or stream water shall be thoroughly washed with a hot water power washer or shall be allowed to completely dry or shall be exposed to freezing temperatures an appropriate length of time as determined by the Contracting Officer. The appropriate length of drying time is dependent upon when the work is scheduled to begin. Use the following link to determine the number of drying days needed; <http://www.100thmeridian.org/emersion.asp>. (insert number of days needed) drying days are required for work beginning on (insert date).
- Water being used for power washing must be 140 degrees Fahrenheit at point of contact for equipment being decontaminated. All exposed surfaces must be sprayed for a minimum of 10 seconds. All contaminated runoff must not be allowed to drain to uncontaminated areas and shall be adequately rerouted or contained, treated and disposed of properly.
- Equipment and supplies including pumps that cannot be thoroughly drained, cleaned and dried shall be treated on all interior and exterior surfaces with 140 degree water for 10 seconds or submerged in vinegar, 100% for 20 minutes or submerged in 200 ppm chlorine for 10 minutes. If chlorine is used, it should be neutralized with 800 ppm sodium thiosulfate and rinsed according to the table below. All vinegar and chlorine runoff and waste must be contained, treated and disposed of properly.
- A Corps of Engineers representative will conduct an onsite inspection of all vessels, equipment, pumps and supplies to be used in or around the water before work begins. The date and time of decontamination and the onsite inspection shall be documented and must be coordinated with the Contracting Office in advance.
- Vessels and equipment shall be inspected upon removal from the body of water. Hulls, anchors, moorings, trailers, etc. must be decontaminated in accordance with this section

and shall be clean of all mud, vegetation and any zebra mussels before leaving the facility. Any suspected zebra mussels must be removed, contained for verification and reported to the Contracting Officer.

- All vessels and equipment being removed from KCD waters currently infested with zebra mussels or other ANS must also be decontaminated as described above.

Disinfectant Amounts to Make Needed Concentrations

Disinfectant	1 gallon	2 gallons	5 gallons	20 gallons	100 Gallons
200 ppm Chlorine (household bleach, 5.25% Chlorine)	0.5 ounce (15 ml)	1.0 ounce (30 ml)	2.5 ounces (75 ml)	11.0 ounces (300 ml)	6 1/3 cups (1.5L)
800 ppm Sodium Thiosulfate	0.1 ounce (3 g)	0.2 ounce (6 g)	0.5 ounce (15 g)	2.1 ounces (60 g)	10.6 ounces (300 g)

Notes:

1. Zebra mussel juveniles, called veligers are microscopic and invisible to the naked eye.
2. Air drying and hot water are most effective when used in conjunction with each other. Their effectiveness is highly dependent upon ambient temperatures and contact times.
3. Household bleach (5.25% chlorine) and vinegar can be purchased from grocery or convenience stores. Sodium Thiosulfate can be purchased at pool supply stores or chemical companies.
4. All bilges and hidden areas under boat decks must be thoroughly treated as described above.
5. For instructions on cleaning and decontaminating specific types of equipment use the following link to access the [Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species](http://www.usbr.gov/pps/EquipmentInspectionandCleaningManual_Sept09.pdf);
http://www.usbr.gov/pps/EquipmentInspectionandCleaningManual_Sept09.pdf