



## NOAA FISHERIES SERVICE



Water bags and the barge itself may be contaminated during use. Be sure to inspect and decontaminate all equipment that comes into contact with raw water  
(Photo credit: Imes, Inc.).

# Preventing Invasive Species: Decontamination of Crane Bags

## Background

As part of their testing processes, crane companies often fill bags with water to achieve a predetermined weight. At the end of crane testing, the bag is commonly drained and moved to a new location. These bags can be used at various locations across the country and may be filled with untreated raw water from the location of last use. Consequently, if not properly handled, water bags can become a pathway for the introduction of aquatic invasive species.

Water bags used for crane testing generally cannot be easily inspected at the level required to find microscopic invasive species. However, many crane testing companies will provide certification that the water bag was filled only with potable water at its last location or filled with water and properly decontaminated. If a certification cannot be obtained assume it is contaminated can insist upon decontamination of the water bag before allowing its use at the project site.

## Recommended Methods:

### **Chemical Treatment**

If stated within the manufacturer's specifications, the bag may be decontaminated using the chemical treatments listed below:

- Diluted household bleach solution (> 5 % sodium hypochlorite) at a concentration of three ounces of bleach per five gallons of water for one hour.
- Undiluted white vinegar for 20 minutes.
- 1% potassium permanganate solution at 24-hour exposure.
- 5% quaternary ammonium solution for 10 minutes.
- 250 mg/L ROCCAL (benzalkonium chloride) for 15 minutes
- 500 mg/L hydrogen peroxide for one hour
- 167 mg/L formalin for one hour
- 1% table salt (based on 312g per cup sodium chloride) for 24 hours

The use of chemical treatments sometimes poses disposal and wastewater concerns. If chemical treatments are used, local standards of waste disposal must be followed. Since local regulations for chemical disposal may vary, always contact a local chemical waste management facility, the Environmental Protection Agency, or refer to the Material Safety Data Sheet for recommendations on proper disposal prior to use of any chemical. Some state states may also require certification or licensing for personnel who use chemical treatments. Finally, some solutions may cause corrosion on metal surfaces and electrical connections; follow all label restrictions and manufacture guidelines. Following treatment, rinse all surfaces with clean water and dry thoroughly.



### **Thermal Treatment**

Heating a water bag directly is **not** recommended unless specifically allowed by the water bag manufacturer. Hot water (>140°F) pressure washing may be an acceptable option as allowed by the manufacturer's specifications.

### **Freezing**

Freezing a fully drained water bag can be effective if allowed by the manufacturer's specifications.

### **Physical**

Physical treatment (e.g., crushing, vacuuming, brushing) is **not** an effective treatment option. More than likely, any invasive species that might be found in a water bag would be small in size (i.e., veligers or pathogens) and not subject to successful physical treatment.

### **Desiccation**

Desiccation as a treatment option may involve air drying the bag, assisted by fan circulation using room temperature or moderately heated air. Drying times capable of killing invasive species vary according to the month of the year, location, and relative humidity; therefore, no single drying time estimate can ensure a complete kill for all situations. The Army Corp of Engineers recommends drying all equipment for at least 10 days before reuse.



There is concern for the spread of invasive species through the increased usage of water weight testing bags on project sites (Photo credit: Imes, Inc.)



Crane testing companies often provide certification that the water bag was filled only with potable water at its last location, or was filled with raw water and properly decontaminated. If there is any doubt, insist upon decontamination of the water bag before allowing its use at the facility (Photo credit, Imes, Inc).

## **Suggested Resources:**

### **[Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species](http://www.usbr.gov/pps/EquipmentInspectionandCleaningManual_Sept09.pdf)**

U.S. Department of the Interior Bureau of Reclamation. 2009. Technical Memorandum No. 86-68220-07-05. 203 pp. Available online at: [http://www.usbr.gov/pps/EquipmentInspectionandCleaningManual\\_Sept09.pdf](http://www.usbr.gov/pps/EquipmentInspectionandCleaningManual_Sept09.pdf)

*This manual provides recommendations for inspection and cleaning of vehicles and equipment as a prevention tool to limit the spread of invasive species.*