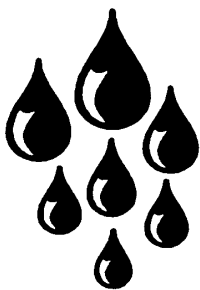




ASSESSING THE CONDITION OF YOUR RAINWATER COLLECTION SYSTEM (CISTERN)

PROTECTING YOUR WATER QUALITY THROUGH A HOME & FARM ASSESSMENT



WHY SHOULD YOU BE CONCERNED?

The condition of your rain water collection system (cistern) is an important factor that could affect potential contamination of your drinking water supply. You should be especially concerned about the condition and maintenance of your cistern system.

Bacteria and nutrients from failing septic systems or livestock, and toxic chemicals from household hazardous waste, fertilizer, pesticides, or petroleum product storage areas can all enter your cistern through cracks or imperfections. Bacteria and toxic chemicals can also enter cisterns from rooftops and unscreened openings. Some contaminants in cistern water may only affect appearance, while others such as bacteria, nitrate, metals, and other toxins can be very harmful or even fatal.

WHAT CAN YOU DO?

This worksheet is designed to give you information about contaminants that can potentially harm your drinking water supply.

Use this worksheet to address questions you have answered **Yes** to or **do not know** the answer to in the **Assessing the Condition of Your Rain Water Collection System** section of your **Home and Farm Water Quality Assessment**. This worksheet will help you develop an Action Plan to establish practices that reduce the risks of contamination to your drinking water supply.

A PARTNERSHIP PROGRAM FOR VOLUNTARY POLLUTION PREVENTION



RAIN WATER COLLECTION SYSTEM (CISTERN)

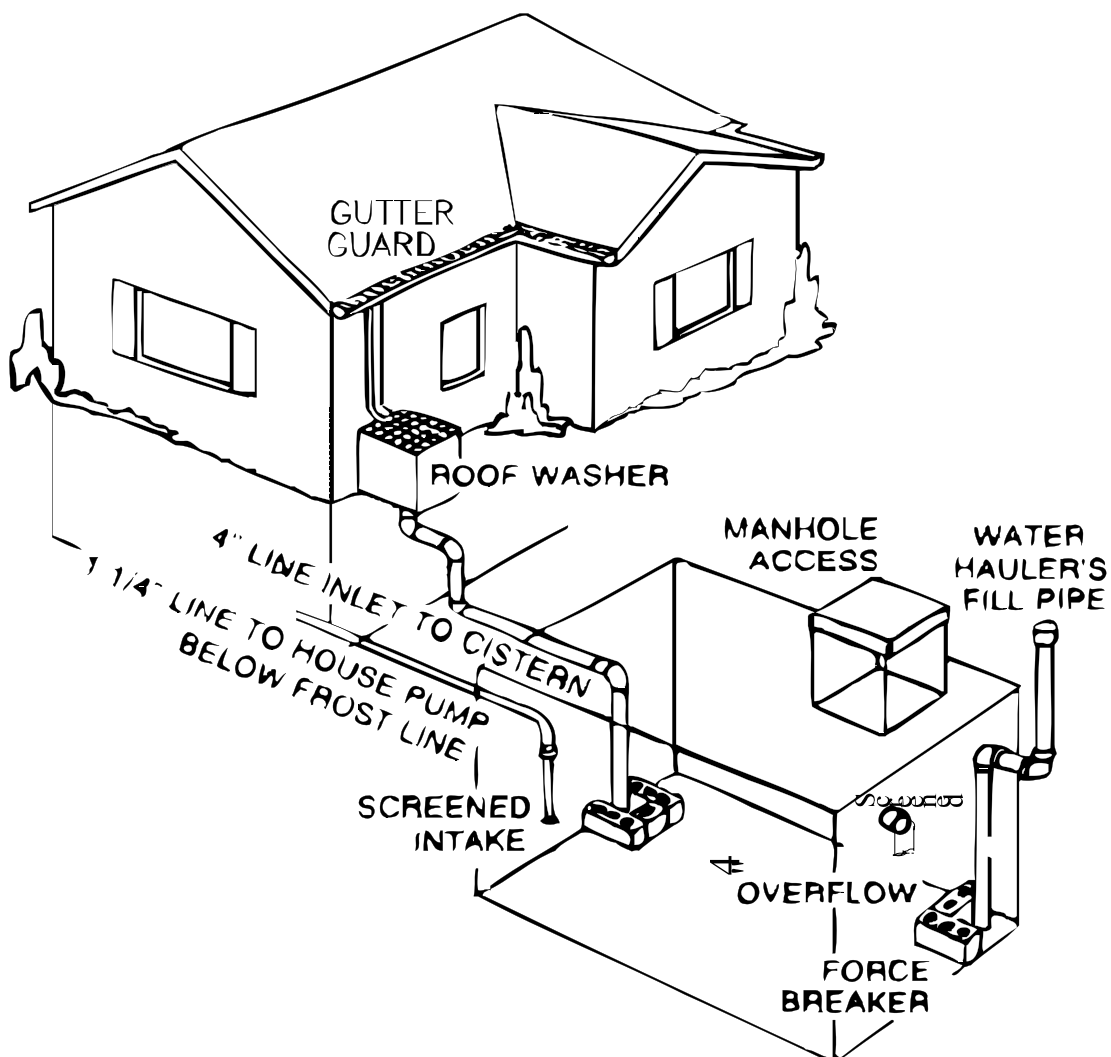
Is your drinking water supply from a rain water collection system (cistern)? If yes, continue with questions below. If no, continue to *Section II. Assessing Your Site*.

- | YES | NO | | |
|--------------------------|--------------------------|----|---|
| ☐ | ☐ | 1. | Has it been over three (3) years since your cistern was emptied and cleaned? |
| ☐ | ☐ | 2. | Has it been over one month since you treated your cistern water with chlorine? |
| ☐ | ☐ | 3. | Has it been longer than one month since you cleaned debris from your roof and/or collection system (gutters, pipes, cistern)? |
| ☐ | ☐ | 4. | Is your roof made of or coated with toxic materials (i.e., asbestos, lead paint, zinc, etc.)? |
| ☐ | ☐ | 5. | Are there places on your roof, collection area, or in your gutter system where water stands instead of flowing into your cistern? |
| ☐ | ☐ | 6. | Can animals or debris enter through the screen(s) on your rainwater collection system? |
| ☐ | ☐ | 7. | Has it been longer than two (2) years since you inspected your cistern for cracks or leaks? |

If you have answered **Yes** or **do not know** the answer to any of these questions, refer to this factsheet for valuable information that will help you develop an Action Plan to reduce the risk of contamination to your drinking water supply and surrounding surface waters.

I. HAS IT BEEN OVER THREE YEARS SINCE YOUR CISTERN WAS EMPTIED & CLEANED?

Your cistern water quality is directly dependent upon how you manage your collection system. You should empty and clean your cistern every three to five years to remove sludge deposits. This will minimize the amount of coliform bacteria and other contaminants in your drinking water. Some people may need to clean their cisterns more often, depending on how much vegetation is overhanging the roof or other parts of the collection system. Screens and downspouts need to be inspected and cleaned on a more frequent basis, ideally once a month or after heavy rainstorms.



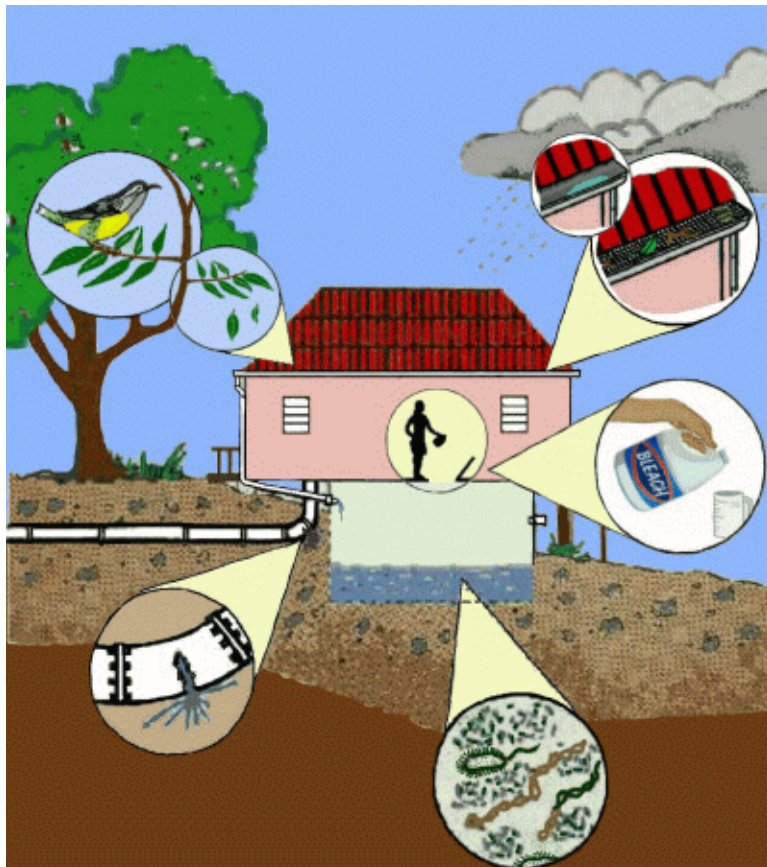
2. HAS IT BEEN OVER ONE MONTH SINCE YOU TREATED YOUR CISTERN WATER WITH CHLORINE?

You should add chlorine to the water in your cistern on a regular basis to disinfect (kill bacteria and other disease-causing organisms) your water supply. Treat cistern water with five fluid ounces of liquid chlorine bleach per 1000 gallons of water monthly or bimonthly, depending upon the frequency and amount of rainfall or upon weekly testing of the chlorine residual. If there is lots of organic matter (leaves and other debris) in the cistern, you may have to add chlorine more frequently. For further information on chlorinating your cistern, contact the DPNR Public Water Supply Supervision Program, or the UVI Water Resources Research Institute.

3. HAS IT BEEN OVER ONE MONTH SINCE YOU CLEANED DEBRIS FROM YOUR ROOF AND/OR YOUR COLLECTION SYSTEM (DRAINS, PIPES, CISTERN)?

Your maintenance program should include regular cleaning of rooftops (or other collection surfaces), gutters, and pipes leading to the cistern. This will prevent clogging of the system and reduce bacterial contamination. Roofs, gutters and screens should be checked and cleaned every month of debris.

You should inspect the collection system for blockages and/or debris after every major storm event. (Studies conducted in the Virgin Islands have found leaf litter and other organic debris left on rooftops and in gutters and cisterns to be the primary source of coliform bacteria in cistern drinking water).



Trees should be pruned back so that branches do not hang over rooftops, gutters, or other collection areas.

4. IS YOUR ROOF MADE OF OR COATED WITH TOXIC MATERIALS (I.E. ASBESTOS, LEAD PAINT, ZINC, ETC.)?

Many roof coatings, paints and collection materials can contain toxic substances such as zinc, copper, and lead that can contaminate your cistern water. Asphaltic compounds, glues or adhesives, and elasometric roofing can contain volatile organic compounds that can also get into cistern water. Even temporary roof coverings, such as tarps, may contain toxic compounds or leach plastics into cistern water.

For example, galvanized roofing is a source of zinc, roofs with copper flashing can have high copper and lead concentrations, and some roof coatings or paints may contain lead. You should consider treating or replacing your roof covering with coatings or components that are made from nontoxic materials. The DPNR Division of Environmental Protection is in the process of promulgating regulations requiring testing of roofing materials for toxic compounds.

If you think your collection system may contain or be treated with toxic materials, you should have your drinking water tested. Call the DPNR Division of Environmental Protection, the Health Department, or a private laboratory for information on getting your cistern water tested.



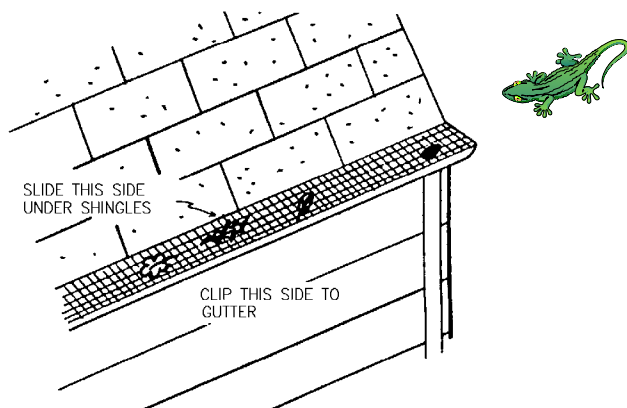
5. ARE THERE PLACES ON YOUR ROOF, COLLECTION AREA, OR IN YOUR GUTTER SYSTEM WHERE WATER STANDS INSTEAD OF FLOWING INTO YOUR CISTERN?

Standing water on roofs, in the collection system, or in improperly sloped gutters creates birdbaths, mosquito breeding areas, and stagnant water that can harm the quality of water entering your cistern.

Inspect your system after a heavy rain to see if you have any standing water. Reshape gutter areas where water stands.

6. CAN ANIMALS OR DEBRIS ENTER THROUGH THE SCREEN(S) ON YOUR RAINWATER COLLECTION SYSTEM?

All openings to your cistern (including the overflow) should be screened to prevent animals and debris from entering. Check all screens after major storms to remove any debris that may have collected. It is also a good idea to fence any portion of your collection system that may be accessible to animals or children.



7. HAS IT BEEN LONGER THAN TWO YEARS SINCE YOU INSPECTED YOUR CISTERN FOR CRACKS OR LEAKS?

Pollutants from failing septic systems, livestock areas, or leaking petroleum storage containers can enter cisterns through cracks or leaks, contaminating your drinking water supply. Check your cistern for leaks and cracks on a regular basis, or especially if you notice abnormal water loss. The presence of tree roots in your cistern is a good indicator that you may have cracks or leaks. Any cracks or leaks found in the cistern should be immediately filled and sealed.

FOR MORE INFORMATION

This assessment does not cover all potential risks on your property that could impact the quality of your drinking water. It is designed to: create an awareness of potential risks to water quality on your property; provide voluntary solutions to reduce pollution risks; and develop an action plan to protect your drinking water supply. Individual areas and states may vary in requirements on minimum standards for water supply protection. Always check with your local offices listed in the reference section of each worksheet before making changes to your water supply system. There are other, more detailed, Farm*A*Syst/Home*A*Syst programs available. If you have specific questions about protecting your drinking water, contact your local Extension Service Office, local USDA Natural Resources Conservation Service Office, or your local Soil and Water Conservation District Office. You may also contact the National Farm*A*Syst/Home*A*Syst Office at B142 Steenbock Library, 550 Babcock Drive, Madison, Wisconsin 53706-1293, Phone (608) 262-0024.

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If You Answered "Yes" to the Following Questions	What to Do	Who to Call	Other References	What You Did
Question 1	Empty and clean cistern every 3-5 years.	UVI Cooperative Extension Service (CES), DPNR Division of Environmental Protection (DEP), UVI-Water Resources Research Institute (WRRI), USDA-NRCS office, or V.I. Conservation District (VICD) office		
Question 2	Add chlorine to your cistern at recommended rates and intervals.	UVI-CES, DPNR-DEP, UVI-WRRI, USDA-NRCS or VICD		
Question 3	Develop a regular maintenance schedule. Inspect after large storms.	UVI-CES, DPNR-DEP, UVI-WRRI, USDA-NRCS or VICD		
Question 4	Cover with nontoxic material or remove toxic material.	UVI-CES, DPNR-DEP, UVI-WRRI, USDA-NRCS or VICD		
Question 5	Inspect gutters for places where water may stand.	UVI-CES, DPNR-DEP-PWSS, UVI-WRRI, USDA-NRCS or VICD		
Question 6	Inspect and repair all damaged screens. Fence collection areas accessible to animals and/or children.	UVI-CES, DPNR-DEP, UVI-WRRI, USDA-NRCS or VICD		

PHONE NUMBERS:

UVI-CES: 692-4080 (St. Croix); 693-1080 (St. Thomas - St. John)

UVI-WRRI: 693-1063

DPNR-DEP: 773-1082 (St. Croix); 774-3320 (St. Thomas)

USDA-NRCS & VICD: 692-9632, x. 101