

CLEAN WATER
AND
YOUR HEALTH



1-800-286-5700
93 West Main Street
Clinton, CT 06457
www.ctwater.com

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Prepared by
The Source Water Protection Committee
of the Connecticut Section of the
American Water Works Association

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WHERE DOES WATER COME FROM?

SOURCES OF DRINKING WATER

Drinking water supplies come from two sources, either surface water or groundwater. A watershed is the land area that drains to a surface water supply such as a stream, lake or reservoir. An aquifer area is where water is stored underground and provides water to a well.

Natural processes and human activities within a watershed or aquifer area can affect the quality of a surface water supply well as well as a groundwater supply. As water travels over the surface of the land or through the ground, it can carry soil particles, oils, road salts, hydrocarbons, bacteria, viruses, fertilizers, pesticides and other potential contaminants that can impact the quality of our public drinking water supplies.

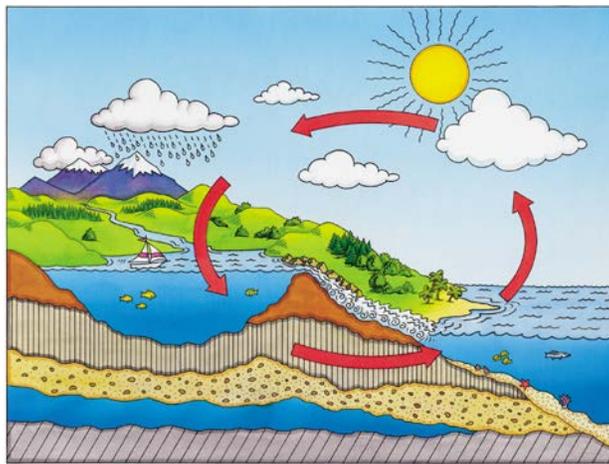
ANNUAL SANITARY SURVEY

In order to safeguard our public drinking water supplies for the future, water utilities are required by the State of Connecticut to conduct an annual sanitary survey of all properties that are located on public drinking water supply watersheds and to report their findings to the Connecticut Department of Public Health. Water utilities as well as watershed residents have an important stake in maintaining and protecting our sources of drinking water.

WHERE DOES IT GO WHEN WE FLUSH IT DOWN THE DRAIN?

Few of us give much thought to this seemingly simple question, however it is an important concern to local water utilities when you consider the fact that there is no such thing as “new” water. Basically, the same water that existed in the day of our ancestors exists today. Water is continually recirculated through the hydrologic cycle and is used over and over again. This constant reuse of water makes it vital that water utilities and watershed/aquifer area residents alike, work together to maintain clean, safe drinking water supplies for the future.

HYDROLOGIC CYCLE



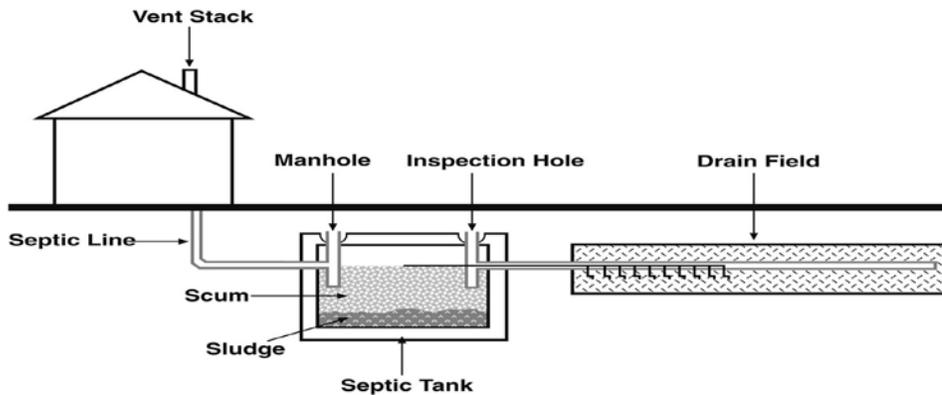
In nature, water endlessly moves from the land and bodies of water to the atmosphere. Then from the atmosphere back to the land. Contaminants which the water contacts in this journey may move with it through the cycle.

You can learn more about protecting water supplies by contacting the U.S. Environmental Protection Agency (1-800-426-4791) or www.epa.gov/drink.

SEPTIC SYSTEMS

A potential water quality concern is the domestic subsurface sewage disposal system. Failure of such a system will result in an unsightly and odorous discharge and could create a serious health hazard by harboring bacteria, viruses and pollutants which may cause disease (e.g. polio, hepatitis, dysentery).

The Connecticut Public Health Code sets standards for the design, installation, and location of subsurface sewage disposal systems. No part of a septic system may be located within 100 feet of a drinking water supply reservoir or 50 feet from its tributary stream or watercourse, or within a minimum separating distance of 75 feet from a well, depending on soil and pumping conditions.



Septic Tank Functioning: Sanitary household wastes are conveyed from the internal plumbing to the septic tank. In the tank, solids settle, forming a "sludge", while grease and other light materials float to the surface and form a "scum". Bacterial action in the tank breaks down organic material but the scum and sludge must be periodically removed. The liquid portion of the waste leaves the tank and is evenly dispersed by the distribution box into the leaching field where it passes through and is treated by the soil.

The following suggestions and precautions can help prevent system failure and avoid health hazards and costly repairs:

1. Avoid dumping excessive amounts of fats, grease, or cooking oils down the drain as they may clog the system or interfere with the septic tank function.
2. Reduce the use of commercial septic tank and leaching field cleaners, additives, or home remedies as they generally will not improve system performance. Some may actually harm the beneficial bacterial action of the septic tank, plug the leaching field, and possibly cause pollution of nearby wells and watercourses.
3. Reduce the use of household chemicals and cleaning agents (bleaches, drain and toilet cleaner, detergents, soaps) since large quantities may interfere with proper functioning of the system and cause water pollution. Use alternative cleaning products that do not contain hazardous chemicals. Contact the CT DEEP for more information.
4. **Never** pour harmful chemicals down the drain! As little as one cup of a chemical can cause pollution to millions of gallons of water. Disposal of toxic chemicals (pesticides, oil, gasoline, paint thinner) into the system can have serious detrimental effects on the system itself and the quality of groundwater. Many hazardous substances disturb septic systems or pass through them untreated. Others corrode the plumbing and/or release dangerous fumes through the drains. Store hazardous chemicals in a safe place until they can be brought to a household hazardous waste collection program.

5. **Never** flush unused pharmaceuticals down the sink or toilet! This can cause contamination in our aquatic environment because wastewater treatment systems, including septic systems, are not designed to remove many of these medications. Instead, place them in the household trash after taking precautions to prevent accidental ingestion by people or animals. For more information on disposal options, contact the CT DEEP or U.S. EPA. Whenever possible take your unused pharmaceuticals to a collection program or event.
 6. Establish a sound program of regular inspection and septic tank cleaning every two to three years. Keep an accurate record of cleanings with a sketch of the entire system (including tank location and clean-out points).
 7. Excessive amounts of water entering the system within a short period of time will overburden the leaching field and may shorten its useful life. (Laundry, for example, should be one load each day rather than several loads in one day.)
 8. Do not discharge salt brine solution from water softeners into the system unless authorized by CT DEEP because it can result in contamination of wells and surface water and clog the soils surrounding the leaching areas.
 9. Do not operate heavy equipment (trucks, tractors) on leaching areas or place structures (pools, sheds) over them as they will crush or compact the field, thereby reducing the efficiency of the system.
 10. Guard against the danger of tree and shrub roots growing on or near the system. They may penetrate the leaching field and pipe joints, causing system failure.
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PESTICIDES, HERBICIDES & FERTILIZERS



Lawn and Garden Care

Chemical pesticides, herbicides, and fertilizers are toxic. Careless handling of them can result in contamination of the environment, polluting streams and ponds, and rendering wells and public drinking water supplies unsafe. Fertilizers can fuel nuisance algae blooms in reservoirs which degrade water quality and consume large amounts of oxygen upon decomposition. Even modern water treatment facilities may not be relied upon to remove all toxic chemicals.

The utmost care must be exercised in the application of these chemicals. The manufacturers' instructions must be explicitly followed. Never over-apply these chemicals. Winds can cause sprays to drift long distances. Rain, shortly after an application, can wash these chemicals into watercourses, wetland areas, or storm drains. The improper use of these chemicals can lead to contamination far from the point of application. Avoid hiring unlicensed commercial sprayer services.

Mix only enough chemicals to do the job. Avoid surplus. Store leftovers in a safe place until they can be disposed of at a household hazardous waste collection facility. **Never** flush them down drains or discarded into the environment.

Empty containers are never empty! Some toxicant always remains; therefore, containers should be disposed of properly. On-site disposal or burning of containers is not allowed in Connecticut.

Pesticides are poisons; consider using natural alternatives

For additional information, contact:

- Connecticut DEEP www.ct.gov/deep or 860- 424-3369

- UCONN Cooperative Extension System:

- Home & Garden Education Center: www.ladybug.uconn.edu or 877- 486-6271
- Water Quality & the Home Landscape: www.sustainability.uconn.edu

OIL POLLUTION

After a period of years, fuel or heating oil storage tanks can develop leaks from corrosion and cause contamination of ground and surface water. All underground tanks and lines should be examined on a periodic basis for leaks. Be especially watchful for oil seepage or odor around the tank and unusually high consumption rates. Even accidental polluters may be liable for clean-up and damages on neighboring properties. The CT DEEP has regulations governing nonresidential underground fuel storage tanks. It is recommended residential and nonresidential underground tanks be prohibited on aquifer and watershed areas.

Waste oil from cars and machinery can contaminate ground and surface waters. **Never** dump waste oil down a catchbasin, on the ground, in a watercourse, or in the trash. It is illegal to dispose of oil in this manner. The state mandatory recycling law requires all towns to have waste oil disposal facilities for residential waste oil. Check with your town about proper waste oil disposal facilities or contact your local gas station.

Chemical degreasers to clean up oil spills should not be used. They disperse the problem over a large area and may contain carcinogenic (cancer-causing) chemicals.

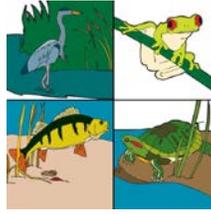
OIL, GASOLINE OR CHEMICAL SPILLS



Toxic materials, when transported overland by motor vehicles or pipeline, pose a serious hazard in the event of a mishap. Spills along roads, rails, and pipelines can contaminate wells and surface waters.

If you see any type of spill (liquid or solid) please report it immediately the Connecticut Water Company at 1-800-286-5700 (sources of information will be kept confidential). The spill should also be reported to the State Department of Energy and Environmental Protection at 860-424-3338.

SMALL POND MANAGEMENT



During the summer months when stream flow decreases and the water warms up, ponds are subject to increased weed and algae growth and may become stagnant mosquito breeding areas.

The use of chemical pesticides, herbicides or oils to control such problems REQUIRES the Department of Energy and Environmental Protection's approval for each application. These chemicals are toxic and classified as controlled substances. Improper use of such materials can kill fish and other desirable aquatic life and can contaminate drinking water supplies.

Environmentally sound approaches to controlling noxious weeds include pulling or cutting of weeds or brush from waters and shoreline and varying pond water levels. Local health departments, wetland and conservation commissions, and county offices of the state's Cooperative Extension System should be consulted concerning local regulations and additional advice.

Overpopulation of a pond by waterfowl or domestic animals will seriously degrade water quality and should not be encouraged by feeding waterfowl or allowing livestock and domestic animals access to water bodies.

The introduction of any fish to the waters within the state is regulated by CT DEEP and **requires a permit**. Furthermore, the use of carp or goldfish as bait or their release is **specifically prohibited** because of their harmful effects on shoreline vegetation, the aquatic food chain, and water quality.

Remember, irresponsible management of a pond will adversely affect the downstream users.

ANIMAL WASTES



Inadequate or improper handling of manure and other animal wastes can result in a pollution problem. In addition to harboring large amounts of harmful bacteria, animal wastes greatly increase the growth of algae in watercourses. The algae can be odorous, unsightly, and cause the death of other beneficial aquatic life.

State health regulations **require** that any structure where animals are housed or manure accumulated **cannot** be located within 100 feet of a drinking water supply reservoir or within 50 feet of its tributary streams or watercourses. Such structures must be constructed so that manure and other polluting materials are prevented from entering or being washed into tributary watercourses. Further advice is available from your county office of the U.S. Department of Agriculture, Natural Resource Conservation Service or the University of Connecticut Cooperative Extension System.

SOIL EROSION AND SEDIMENTATION

Soil erosion is the process where exposed, unprotected soil is subject to rapid erosion by the action of wind and water. Accelerated erosion and sedimentation caused by construction activities can contaminate streams and reservoirs and destroy the soil's capability to support vegetation. Care should be taken not to expose large areas during construction activities and to reseed these areas as soon as possible. Erosion control measures (i.e. haybales, silt fence) will be needed when working near wetlands or watercourses and on steep slopes. The state law requires projects which disturb an area larger than one-half acre must have an erosion and sediment control plan.

A General Permit must be obtained from the CT DEEP for the discharge of stormwater and dewatering wastewaters from construction activities which result in the disturbance of land as required by Section 22a-430b of the CT General Statutes.

POOL FILTERS AND WATER SOFTENERS

The backwash water from swimming pool filters contains large accumulations of bacteria, chemicals, and suspended solids. Due to their pollution potential, these waste waters cannot be discharged onto the ground, into a sanitary sewer or dedicated subsurface disposal system unless authorized by CT DEEP. This waste water must **not** be discharged to a household septic system.

The waste discharges of home water softener systems are also a source of pollution and should not be discharged to the environment. For example, one home water softener may discharge up to 1/2 ton of salt per year plus other chemicals, which can impact nearby surface and groundwater supply wells. Discharge of waste water from water treatment systems (i.e., water softeners, iron or manganese removal filters) to surface water, sanitary sewer system, subsurface sewage disposal system (septic system) or to the ground surface are prohibited unless otherwise authorized by CT DEEP. On-site disposal of water treatment system waste water via a separate/dedicated subsurface disposal system shall be in accordance with CT DEEP guidance or General Permit. For more information on recommended disposal alternatives call CT DEEP (860-424-3018) or your local health department. In many cases, less costly and environmentally safe alternatives are available to water softeners including use of boiler additives to prevent scaling in hot water heating systems; using detergents and bar soaps designed for use with hard water; and annual flushing of heating systems, with or without acid. Very few Connecticut waters require softening, and it may be worthwhile to consult an independent laboratory, not associated with the softening industry, for advice.

We all share in the responsibility for clean water. Pollution problems can negatively affect both surface and groundwater drinking water supplies. We hope this booklet has been informative. If you have any questions or comments concerning material in this booklet, please contact us at 1-800-286-5700. Sources need not divulge their identities. We appreciate your concern and cooperation.

FOR MORE INFORMATION CONTACT THE FOLLOWING AGENCIES

CT DEPT. OF PUBLIC HEALTH

410 Capitol Avenue
Hartford, CT 06134-0308
www.ct.gov/dph

General Information	860- 509-8000
Drinking Water Section	860- 509-7333
Septic System Information	860- 509-7296
Environmental Lab Certification	860- 509-7389
Local Health Administration Branch	860- 509-7660

USDA NATURAL RESOURCES CONSERVATION SERVICES

-State Office 860- 871-4011
www.ct.nrcs.usda.gov

SOIL & WATER CONSERVATION DISTRICTS

www.conservect.org

Northwest Conservation District	860- 626-7222
Eastern CT. Conservation District	860- 887-4163
South West Conservation District	203- 269-7509
CT River Coastal Conservation District	860- 346-3282
North Central Conservation District	
Vernon Office	860- 875-3881

CT DEPT. ENERGY AND ENVIRONMENTAL PROTECTION

79 Elm Street
Hartford, CT 06106-5127
www.ct.gov/deep

General Information	860- 424-3000
Pesticide Management	860- 424-3369
Solid Waste Management	860- 424-3366
Education Program	860- 424-3542
Watershed Management	860- 424-3020
Hazardous Waste Mgt.	860- 424-4193
Oil/ Chemical Spills	860- 424-3338
	or
	860- 424-3333

Leaking Underground Storage Tank	860- 424-3374
Septic System Information	860- 424-3018
Aquifer Protection	860- 424-3020

UNIVERSITY OF CONNECTICUT COOPERATIVE EXTENSION SYSTEM

College of Agricultural and Natural Resources
Storrs, CT 860- 486-9228
www.extension.uconn.edu

Home & Garden Education Center

Toll free 877- 486-6271

CLEAN WATER: YOU CAN MAKE A DIFFERENCE

Here are some examples of what you can do to protect water resources:

Litter: Place litter, including cigarette butts, fast food containers in the trash. Never throw in the street or into storm drains or catch basins.

Fertilizer: Avoid overuse and don't apply before a heavy rainfall. Fertilizers contain nitrates and phosphates that in abundance can cause algae blooms and fish kills. For natural alternatives visit:

www.sustainability.uconn.edu

Pesticides: Use natural alternatives whenever possible. Many household pesticide products are also toxic to humans, animals and the environment. If you use a pesticide, follow label directions.

Household Hazardous Products: Use natural and less toxic alternatives when possible.

Visit: www.ct.gov/deep/cwp/view.asp?a=2708&q=323956&deepnav_gid=1763

Motor Oil: Do not dump used motor oil down storm drains or on the ground. Take it to your local transfer station or recycling facility.

Animal Waste: Animal wastes contain bacteria and viruses that can contaminate water. Pick up after pets and properly dispose the waste. Never dump into storm drains.

Septic Systems: Inspect annually and pump out your tank every 3-5 years, depending on use. Avoid adding grease, household hazardous products or solids to your system. Visit:

www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf.

Vehicle Maintenance: Maintain your vehicle properly so that motor oil, brake linings, exhaust and other fluids don't contribute to water pollution.

Vehicle Washing: Consider using a commercial car wash that recycles its wash water. If you wash your car at home use a non-phosphate detergent.

Keep Storm Drains Clean: In the first rush of water from a rainstorm, much of the debris and other pollutants on the land surface and in storm drains will be carried into local streams and water bodies. Never dump any of the following into storm drains or catch basins: motor oil, animal waste, grass trimmings, leaves, debris, or hazardous chemicals.

Use Low Impact Development (LID) Practices: Design with nature to control the quality, quantity and timing of storm water runoff: minimize impervious surfaces; divert rain water from roofs and paved surfaces onto vegetated areas (use rain gardens) to permit gradual infiltration; choose appropriate landscape plantings for your soil conditions; avoid planting invasive species- choose natives; maintain natural stream buffers.

For more information visit:

www.sustainability.uconn.edu

www.cipwg.uconn.edu

www.epa.gov/drink

www.clear.uconn.edu

www.lowimpactdevelopment.org

www.nemo.uconn.edu

Portions of this text are based on the following State of
Connecticut Statutes and Regulations:

Connecticut General Statutes

www.cga.ct.gov/asp/menu/Statutes.asp

- Sec. 22a-42fNotification of Inland Wetland Application to Water Co. and DPH
- Sec. 8-3iNotification of Planning and Zoning Application to Water Co. and DPH
- Sec. 22a-66zPermits for Use of Pesticides in State Waters
- Sec. 22a-417Discharge of Sewage to Water Supply Impoundment
- Sec. 22a-329Erosion & Sediment Control Plan
- Sec. 22a-430bGeneral Permit for Construction Activities
- Sec. 25-38Carcass of Animal in Water Supply
- Sec. 25-43Bathing In & Pollution of Reservoirs
- Sec. 26-128Carp & Goldfish
- Sec. 25-51Utility Inspection Authority

Regulations of State Agencies- Connecticut Public Health Code

www.ct.gov/dph/cwp/view.asp?a=3118&q=397982

- Sec. 19-13-B1Constitution of Public Nuisance
- Sec. 19-13-B21Manure Storage
- Sec. 19-13-B31Stagnant Water
- Sec. 19-13-B32Watershed Sanitation
- Sec. 19-13-B102.....Standards for Quality of Public Drinking Water
- Sec. 19-13-B102(b) .Utility Requirement for Watershed Inspection

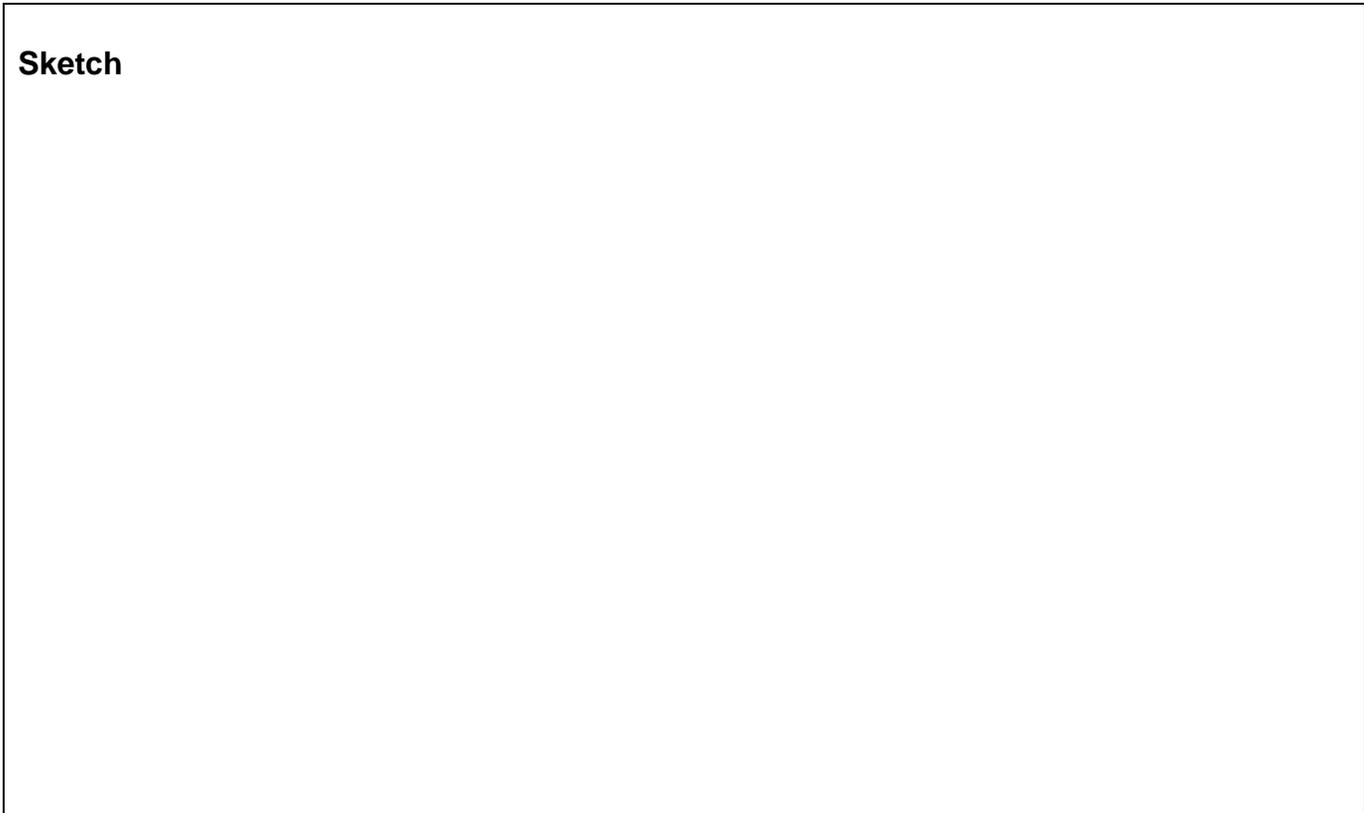
Regulations of State Agencies- Connecticut Dept. Energy and Environmental Protection

www.ct.gov/deep/cwp/view.asp?a=2704&q=323518

- Sec. 22a-449(d).....Nonresidential Underground Storage of Oil & Petroleum Liquids

Please use this page to maintain a record of your septic system information. In the diagram be sure to note location of tank, clean-out manholes, distribution box, leaching field, etc.

Sketch



TANK INSPECTION RECORD

DATE	COST	CONTRACTOR	DESCRIPTION OF WORK