

ENVIRONMENTAL Fact Sheet



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Wellhead Protection Tips for Small Public Water Systems

Small public water systems such as residential subdivisions, apartment buildings, schools, or workplaces should take steps to protect their wells from contamination. Wellhead protection begins with the owner and operator of a well. To achieve protection, follow the six steps listed below. Each step is explained in detail in this fact sheet:

1. Review the Source Assessment Report prepared by DES.
2. Familiarize yourself with the established protection areas around the well.
3. Examine activities in your protection areas.
4. Practice good management procedures.
5. Talk with municipal officials.
6. Educate staff and water users about the importance of clean water.

1. Source Assessment Report

DES prepared a Source Assessment Report for each system. The report, which was sent to the system owner, includes a map of the wellhead protection area(s), an inventory of potential sources of contamination, and a rating of each well's vulnerability to contamination. The report also includes a description of suggested protection measures. If you have difficulty finding your copy of the Source Assessment Report, please view the results online at <http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/part1.htm>, or call DES at (603) 271-0688.

2. Protection Areas

Sanitary Protective Radius – This area should receive the greatest attention. The sanitary protective radius is a 75' to 400' radius around the well that under current law must be controlled by the water supplier through ownership or easements. The extent of the sanitary protective radius depends on the maximum daily amount of water withdrawn from the well. Know the extent of your sanitary protective radius, and be sure only activities that are both directly related to your water system and non-threatening to the water quality occur within the radius.

| Sanitary Protective Radius | |
|----------------------------|---------------|
| Volume (gal) | Radius (feet) |
| 0-750 | 75 |
| 751-1,440 | 100 |
| 1,441 – 4,320 | 125 |
| 4,321 – 14,400 | 150* |
| 14,401 – 28,800 | 175 |
| 28,801 – 57,600 | 200 |
| 57,601 – 86,400 | 250 |
| 86,401 – 115,200 | 300 |
| 115,201 – 144,000 | 350 |
| > 144,000 | 400 |

*minimum SPR for new community wells under Env-Dw 301.06 (b) and Env-Dw 302.06(b).

Wellhead Protection Area – The area under which groundwater flows to a producing well is known as the wellhead protection area (WHPA). For bedrock wells producing less than 57,600 gallons in any 24-hour period, the WHPA is a circle whose radius depends on the maximum daily amount of water withdrawn from the well. For small overburden wells within unconfined aquifers, the WHPA is typically calculated based on existing hydrogeological information.

| Wellhead Protection Area | |
|--|----------------|
| Volume (gal) | Radius* (feet) |
| 0 – 7,200 | 1,300 |
| 7,201 – 14,400 | 1,500 |
| 14,401 – 28,800 | 2,050 |
| 28,801 – 43,200 | 2,850 |
| 43,201 – 57,599 | 3,600 |
| * for bedrock and small overburden production wells only Env-Dw 301.07 (b)(2) | |

3. Examine Activities

Look carefully at activities and businesses within the wellhead protection area. Identify any threats to water quality and develop strategies to address them. Be sure to include:

Underground and Above-Ground Storage Tanks (USTs & ASTs) – Leaking oil and gasoline USTs contaminate soil and groundwater. If a UST or AST is located within the sanitary protective radius of a well, remove it to a location outside the sanitary protective radius and check for signs of previous spills or leaks. (Call DES regarding UST closure rules.) All new USTs must be located at least 400 to 500 feet (depending upon UST contents) from a public water supply well. If you need to store fuel to power an emergency generator, use natural gas or propane. Any heating oil tanks in the larger WHPA should be above ground or in basements on an impermeable surface and contained in an area large enough to hold the complete liquid volume should a spill occur.

Herbicides, Pesticides, and Fertilizers – Herbicides and pesticides must not be used or stored within your sanitary protective radius. Commercial pesticide applicators may not apply pesticides within 400 feet of gravel packed wells used as a public water supply or within 250 feet of any other wells without prior state approval. If you use them outside of but near the sanitary protective radius, be careful to follow label directions and any specific restrictions, registration requirements, and storage guidelines, which vary depending upon the quantity and types of products you choose to apply. Fertilizers are potential sources of nitrates and bacteria; don't use them within the sanitary protective radius. Contact the DES Drinking Water and Groundwater Bureau for more information on best management practices and additional fact sheets regarding these topics.

Effluent Disposal System – Septic tanks, leach fields, etc., should be removed and placed outside the sanitary protective radius of a well. Septic systems outside of but near the sanitary protective radius should be well-maintained. Inspect septic tanks every year and pump when needed. Never dump hazardous household chemicals down the drains. Do not use septic system cleaners.

Storage Areas – Do not store, either indoors or outdoors, hazardous substances (e.g., gasoline, garden chemicals, paints, deicers/salt, motor oil, or antifreeze) within a sanitary protective radius. Outside the sanitary protective radius, store them in a secure building equipped with an impermeable floor and with adequate spill containment equipment.

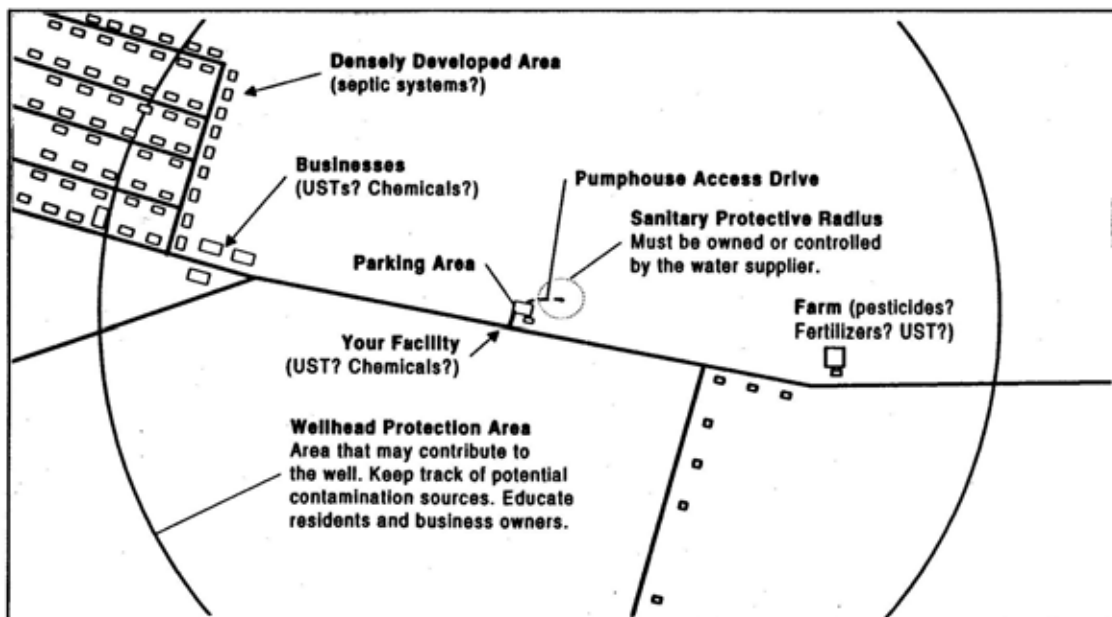
Parking and Vehicle Use – Do not establish a parking area within the sanitary protective radius. Perform maintenance and washing of vehicles outside the sanitary protective radius. Commercial vehicle washing that results in any discharges to the ground may require a DES Groundwater Discharge permit or registration. For more information, please visit the fact sheets webpage at <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm> and scroll to WD-DWGB-22-10 “Wastewater Discharges from Vehicle Washing,” or call (603) 271-2858. Keep any vehicles that

must operate within the sanitary protective radius in good repair to prevent leaks and spills. Thoroughly clean up any leaks or spills immediately.

Municipal/Institutional Systems – These facilities may be conducting some of the potentially harmful activities listed above. In addition, they may use regulated substances or produce hazardous waste. Inspect these facilities, record what is being used, and be sure all potentially harmful materials are stored and disposed of properly.

For example, at a school, be sure that:

- Art supplies are properly stored and hazardous wastes produced by the art studio are managed in accordance with state and federal rules and are not discharged down the sink.
- Laboratory chemicals are properly labeled, stored, and disposed.
- Waste oils and antifreeze from the automotive shop are properly labeled, stored, and disposed.



4. Good Management

A well must be secure and protected. To ensure the safety and purity of the well, follow the do's and don'ts listed below:

DO:

- Regularly inspect activities in the sanitary protective radius.
- Restrict access to the well.
- Clearly label any **hazardous materials** essential to your treatment system located near the well.
- Cap and/or screen all vents, access ports, and other openings of the well or nearby monitoring wells.
- Check the condition of sanitary seals and replace those that are not intact.
- **Slope parking areas and concrete pads under storage areas away from the well;** periodically check their condition, and repair any permeable areas.
- Safeguard chemical feeders from inadvertent physical disturbances or tampering.
- Use a properly constructed sample tap and take other measures to avoid cross-connections.

- Inspect backflow prevention valves and replace as needed.

DON'T:

- Allow the installation of floor drains that discharge to a drywell or any surface leaching system (except for water system backflush) within the sanitary protective radius.
- Store any non-essential chemicals in or near the well house.
- Risk cross-connections by using a hose bib as your sample tap or allowing hoses to be submerged in swimming pools or slop sinks.

5. Municipal Officials

Be sure that officials know you operate a public water system. Explain the exact location of your well, your sanitary protective radius, and your WHPA. Discuss the results of your Source Assessment Report. You may be able to work with municipal officials to educate residents and businesses within your WHPA and to reduce threats from community-wide activities such as road salting. Ask that your WHPA be included in any groundwater protection planning efforts. If you are concerned about a particular activity near your well, ask the health officer or code enforcement officer for help in informing the property owner about Env-Wq-401 Best Management Practices for Groundwater Protection. For more information, contact DWGB at (603) 271-2947 or (603) 271-0688.

6. Educate

It is critical to water supply protection that the public be aware of a protection area. Post signs at access routes entering the WHPA to inform visitors that they are entering a sensitive area. Use periodic mailings to educate residents and businesses in your WHPA about the importance of protecting groundwater. Inform your staff and your water users about potential threats; they may help you locate and resolve a problem. Community systems are required to include a summary of their source assessment report in their annual consumer confidence report (often called a water quality report). DES can provide you with sample notices to post within your facility to remind your staff that they are within the protected area of a water supply.

Benefits

Wells with an approved wellhead protection plan are eligible for money-saving chemical monitoring waivers. Also, protecting your source saves you the added expense of water treatment associated with contamination. Ultimately, the protective measures you take help protect your investment, ensure healthy drinking water, and improve consumer confidence!

For Additional Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at <http://des.nh.gov/organization/divisions/water/dwgb/index.htm>. All of the bureau's fact sheets are on-line at <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm>.