



NEW YORK STATE DEPARTMENT OF HEALTH

Bureau of Water Supply Protection

Flanigan Square, 547 River Street, Troy, New York 12180-2216

INDIVIDUAL WATER SUPPLY WELLS - FACT SHEET #5 SUSCEPTIBLE WATER SOURCES

(Well Points, Dug Wells, Springs and Shore Wells)

Individual (residential) water supplies (IWS) need to provide adequate quantities of water fit for consumption and intended uses. A drilled well, located and constructed in accordance with 10NYCRR Appendix 5-B “Standards for Water Wells”, should routinely be the water supply option selected. Well points, dug wells, springs and shore wells are susceptible to contamination from pathogens, spills, etc. and the effects from drought. These water sources may be considered only as a last resort with proper protective measures and, in most cases, will require approval by County or State health department officials through issuance of a specific waiver pursuant to Part 75 of the State Health Department’s Administrative Rules and Regulations or via a county sanitary code waiver provision.

SPECIFIC INFORMATION FOR SUSCEPTIBLE WATER SOURCE TYPES

The following types of water sources typically utilize surface water bodies or shallow groundwater sources. Surface waters can contain bacteria, parasites, viruses and possibly other contaminants and shallow groundwater sources are also at significant risk of contamination. These water sources typically have distinguishing construction characteristics which do not comply with Appendix 5-B requirements and would therefore require a specific waiver or other county approval if utilized.

Well Points

A well point (or “driven point”) is a special type of well installed using a drive point with a built-in screen fastened to the end of a small diameter pipe (usually 1-1/4 to 2 inches) and without a protective outer casing. Well points are installed by pounding, driving or excavating down to the water table. These wells are usually constructed in shallow aquifers with sandy soils, within 10 to 30 feet of the ground surface and use a suction pump to draw water. Single pipe driven point wells under suction are not in compliance with Appendix 5-B and should be avoided.

Dug Wells

A dug well is constructed by making a large diameter excavation into a shallow aquifer, by hand digging or backhoe and shoring the excavation with large diameter concrete rings. (Shoring constructed with stone or brick are not in compliance with Appendix 5-B and should be avoided.) Dug wells are typically less than 15 feet deep and usually use a suction pump to draw water.

Springs

Springs occur where an aquifer discharges naturally at or near the ground surface, and are broadly classified as either rock or earth springs. It is often difficult to determine the true source of a spring (that is, whether it truly has the natural protection against contamination that a groundwater aquifer typically has.) Even if the source is a good aquifer, it is difficult to develop a collection device (e.g., “spring box”) that reliably protects against entry of contaminants under all weather conditions. (The term “spring box” varies, and, depending on its construction, would be equivalent to, and treated the same, as either a spring, well point or shore well.) Increased yield and turbidity during rain events are indications of the source being under the direct influence of surface water.

Shore Wells

“Shore wells” (also known as “infiltration galleries” or “cassion wells”) are shallow wells influenced by surface water and are installed near a waterbody in a shallow aquifer that is directly connected to surface water. Shore wells can also be shallow subsurface devices adjacent to a water body, installed to collect water through a covered stone-filled trench or similar arrangement that drains surface water to a “storage” well or tank. Soils surrounding shore wells provide minimal filtration. The risk of contamination of these water sources can be similar to those of surface water sources.

ADDITIONAL CONSIDERATIONS AND RECOMMENDATIONS

The use of susceptible sources as described above is discouraged. A properly installed drilled well should be considered first before considering the use of a susceptible source. As a last resort, when the use of a susceptible source is considered, the following is recommended:

Well Points, Dug Wells and Springs

Where shallow ground water aquifers exist, well points, dug wells and springs can be allowed if they are installed by a certified New York State Department of Environmental Conservation (NYS DEC) registered water well contractor and, in most cases, require issuance of a specific waiver by the LHD or county sanitary code approval as needed. For these sources, installation of appropriate treatment should be considered (e.g., continuous disinfection). For springs, an engineering report, which may include a hydrogeologic study, should also be provided to assure that the water source is satisfactory.

Shore Wells

In cases where satisfactory groundwater cannot be developed according to Appendix 5-B standards, a specific waiver or approvals via county sanitary code can be requested for development of a shore well. All such requests should demonstrate unsatisfactory availability of groundwater via an engineering report or other evidence (such as a hydrogeologic study) deemed acceptable by the approval authority. Since shore wells provide minimal natural filtration of surface water, all requests should include proposed design, treatment (including filtration and continuous disinfection) and an operation, maintenance and monitoring plan developed by a professional engineer. After health department approval, the shore well needs to be installed by a certified NYS DEC registered water well contractor. Inclusion of a deed amendment as a condition on the specific waiver approval should also be considered. A professional engineer should certify that the construction and installation of treatment has been provided according to plans.

WATER QUALITY TESTING

Water quality testing is important for all drinking water wells to identify water characteristics and determine treatment needs. See NYS DOH Fact Sheet #3, "Recommended Residential Water Quality Testing" for a recommended minimum list of parameters to test for. It is recommended to test for coliform bacteria every year and to periodically re-test water quality; this is particularly important for water supplies susceptible to contamination.

COUNTY OR STATE HEALTH DEPARTMENT APPROVAL PROCESS REQUIRING A SPECIFIC WAIVER FROM PART 75 OR A COUNTY SANITARY CODE PROVISION

The local health official (see below) for the geographic area where the property that will utilize the water source is located should be contacted for information about how to apply for a specific waiver or other county sanitary code approval. **It is recommended that, before an application for a waiver or other approval is submitted, the local health official be contacted regarding conceptual acceptability of the proposal.** A specific waiver or other approval **IS NOT** intended as a device for routinely approving individual water sources that do not meet state standards. It is intended to provide administrative flexibility to address rare cases when hardships exist and/or other circumstances that make it impractical to meet Appendix 5-B standards.

ADDITIONAL INFORMATION:

Appendix 5-B can be found at:

<http://www.health.state.ny.us/environmental/water/drinking/part5/appendix5b.htm>

NYSDEC registered well drillers can be found at: <http://www.dec.ny.gov/cfm/xtapps/WaterWell/index.cfm>

For a copy of Appendix 5-B or other Fact Sheets or questions concerning this Fact Sheet:

Contact Your Local Health Department
Official
(look for environmental health contacts)
www.nyscho.org/Directory/directory.h

or

Residential Sanitation Section
Bureau of Water Supply Protection
New York State Department of Health
(518) 402-7650 or FAX (518) 402-7659