



INDIVIDUAL WATER SUPPLY WELLS - FACT SHEET #2 WATER STORAGE

A drinking water well capable of providing a sufficient quantity of water is indispensable for homes that are not served by a public water system. Low yielding wells may be able to provide sufficient quantity for daily use, yet be unable to meet peak demand. Supplemental water storage can allow low yield wells to meet peak water use demand.

Well Yield, Water Demand, and Storage

Well yield is a sustainable rate of water flow, usually expressed in gallons per minute (gpm), that a well can draw continuously over an extended period. The Department's well construction standards, Appendix 5-B of 10 NYCRR Subpart 5-1, require that all new, replacement, and redeveloped drinking water wells be tested for yield.

Daily water usage can be estimated for typical households based on the number of occupants or bedrooms. A household with moderate water use will typically need 110 gallons of water per day per bedroom. This number, however, does not take into account extra water needed for homes with high occupancy, lawn irrigation, spa tubs, and other activities and plumbing fixtures that have a high water demand. Higher water use activities and fixtures are not recommended for homes served by low yield wells.

Peak residential water demand typically occurs in the morning and evening when more than one water use is occurring. Peak demand can vary greatly based on the number of simultaneous water uses, the flow rates of individual water fixtures, and the length of time fixtures operate. 5 gpm (two fixtures running simultaneously at 2.5 gpm) is a good estimate of peak demand, for the typical household. Water wells that reliably yield 5 gpm should be able to meet peak and daily needs for most residences.

Wells yielding less than 5 gpm, however, are sometimes the only water source available. These lower yield wells can often meet the total daily water demand, but may not be able to satisfy a household's peak demand. Incorporating supplemental water storage into a household water system can allow low yielding wells to meet both daily household and peak demand. This can prevent low pressure and inadequate water flow when multiple fixtures are in use, reducing the need to schedule showers, laundry, and other water uses for inconvenient times.

Steps in Determining Supplemental Storage Needs

1. Determine the yield of the well. An accurate yield test is essential for evaluating storage. Water well drillers are required to follow Appendix 5-B when determining well yield.
2. If the well yield is less than 5 gpm the table on the reverse can be used to select the amount of supplemental storage needed for households with typical moderate water use.
3. Sufficient storage can be provided by a storage tank. A storage tank may be reduced in size, however, or may not be necessary if sufficient storage is available within the well itself. The typical 6-inch diameter well will hold approximately 1.5 gallons of water per foot of casing. The height of the water above the pump when it is not operating, multiplied by the gallons of water per foot of casing approximates the amount of available storage within the well casing. Shallow wells and wells with slow recovery may not contain reliable storage and caution is advised when considering their potential for storage capacity.

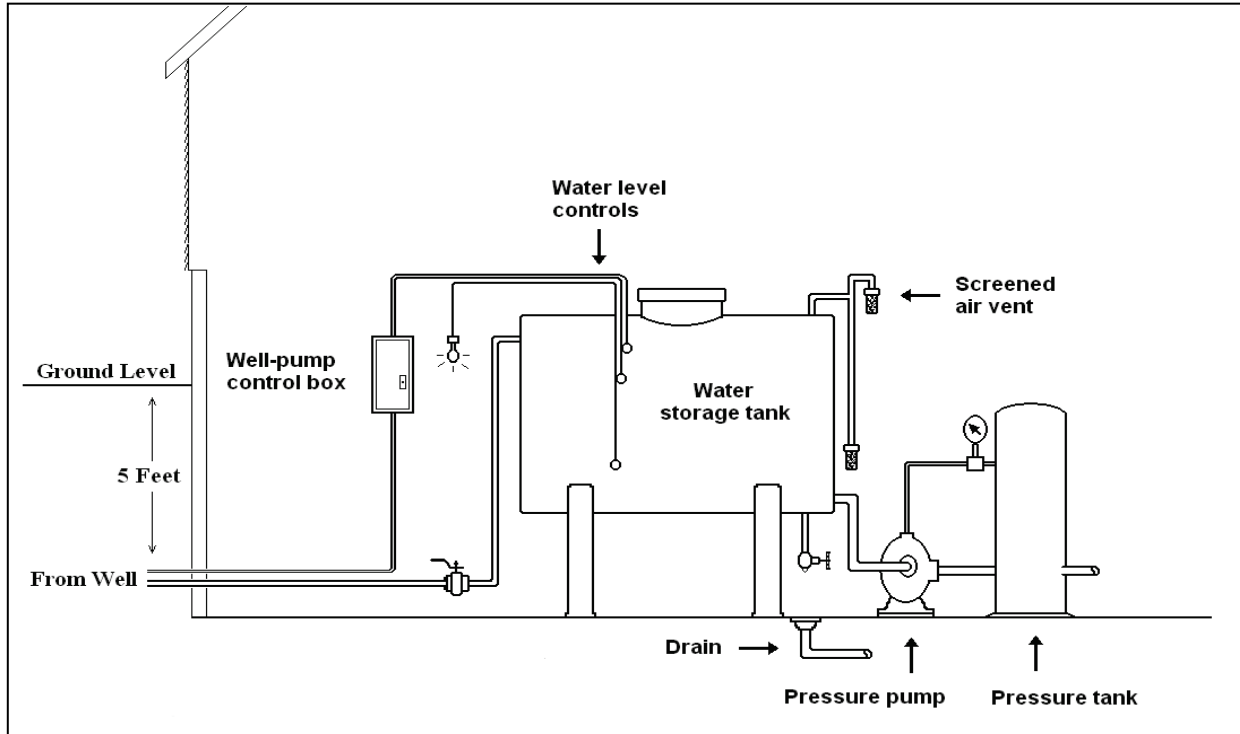
4. Water well professionals should be consulted for advice on selecting storage for households where water use is higher than at typical households, and when storage in the well casing is being considered. A list of registered water well drillers can be found at http://www.dec.state.ny.us/website/dow/driller_ext.html.

Storage Recommendations

A well for a private residence should, if possible, be constructed to produce a minimum long-term sustainable yield of 5 gpm or more. Where this can not be achieved, the following table can be used to help select water storage that will allow low yield wells to meet peak household water demand. This storage can be provided by a tank, storage in the well, or a combination of both.

Recommended Minimum Storage (Gallons)				
	Number of Bedrooms			
Well Yield (GPM)	2	3	4	5
≥ 5	None			
3 to 5	100	150	200	250
1 to 3	150	200	250	300
0.5 to 1	200	250		
< 0.5	Not recommended for use			

Diagram of a typical water tank, providing supplemental storage for a well water system.



Appendix 5-B can be found at <http://www.health.state.ny.us/nysdoh/water/part5/appendix5b.htm>

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

Tompkins County Health Department
 55 Brown Rd.
 Ithaca, NY 14850
 (607) 274-6688 FAX 607-274-6695

or
 Residential Sanitation Section
 Bureau of Water Supply Protection
 New York State Department of Health
 (518) 402-7650 or FAX (518) 402-7659
 E-mail: bpwsp@health.state.ny.us