
WELL CERTIFICATION

Location 105 Round Hill Rd, Kennett Square, PA 19348
Inspection date 7/27/2018

Scope

Chester County Home Inspections LLC performed a flow test of this well to certify that the pumping equipment and the well can supply sufficient water. This is not a well recovery test. Required minimum daily level is 100 gallons per bedroom plus 100 gallons, delivered in two hours or less, i.e. 500 gallons per day for this home.

Well equipment

Pump type:	Submersible; 240 V 30 Amp
Well depth:	indeterminable; no records at equipment; no records with two prominent local well installers (Powell and Keyes)
Pressure switch:	45/60 PSI measured
Tank:	Amtrol Well-X-Trol. No model data tag found on tank. Size estimated at 32-40 gallon.
Filters:	1 sediment cartridge partially clogged
Water treatment & conditioners:	Water softener not in use Ultraviolet bacterial disinfection system not in use

Pressure switch setting of 45/60 PSI means that that the pump starts when the tank pressure reaches 45 PSI and stops when it reaches 60 PSI.

Test data

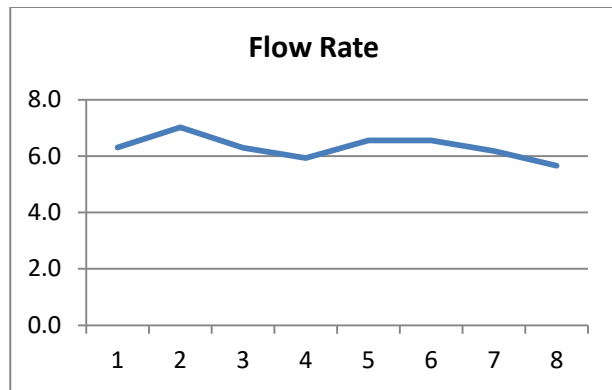
Test length:	1.95 hours (1 hour 57 minutes)
Well yield:	4.3 gpm average over duration
Water drawn:	500.2 gallon
Tank drawdown measured:	2.9 gallon at 45/60 PSI [manufacturer specification unknown]

Definitions:

- **Drawdown** refers to the amount of water that exits a full tank until the pressure switch turns the pump on again. It is affected by pump and pressure settings.
- **Draw time** is how long it takes to drain the tank from the high pressure point to the next cycle.
- **Cycle time** is the run time of the pump starting when the tank reaches the low pressure limit, ending when the high pressure limit stops the pump. Note: Cycle time is typically measured without water being drawn at same time. For the purpose of this well certification procedure, cycle times were measured while water was being drawn, hence cycle times are elevated.

Sampling #	Cycle time	Draw time	Flow (gpm)
1	0.67	0.63	6.3
2	0.78	0.73	7.0
3	0.65	0.60	6.3
4	0.63	0.65	5.9
5	0.70	0.65	6.5
6	0.70	0.65	6.5
7	0.67	0.67	6.2
8	0.62	0.68	5.7

(Times in fractions of a minute)



Observations

1. Water delivery remained constant for the duration at about 6 gpm.
2. Amount of water needed for house (500 gallon) was delivered in 1 hour 57 minutes. The well yield with tank as set is adequate.
3. The 2.9 gallon drawdown before pump starts again is small. This means that the pump will run frequently and for shorter than typical times. Generally speaking, it is better for the pump to run less frequently but for longer periods.

Test conclusion

Condition of equipment: **Satisfactory**
Condition of well: **Satisfactory**

Notes & recommendations:

1. The small drawdown is due to the narrow pressure differential. Typical settings are 30/50, 40/60, or 50/70 PSI though any range can be set. The lower thresholds are easier on the equipment but sometimes it does not work well for the water use pattern of the household. The middle range is often suitable, we therefore recommend adjusting the pump pressure settings to 30/50 (20 PSI differential).
2. Sediment filters prevent sediment from getting into the hot water tank, ice maker and fridge drinking water filters, and also in water treatment systems. Clogged sediment filters put a strain on pump. Replace filters regularly.
3. Quality of the water is as important as the quantity. We recommend annual water testing.

Edwin Dunckley, CPI