

Ref: Lightmoor Water ID # 66934K

On August 18, 2014 I visited the above site to conduct a system inspection. The water source is a 6" drilled well located outside of the well house. This type of installation will need to be protected from freezing which appears to have split a flow valve at the top of the well. The submersible pump is a ½ hp 230 volt Webtrol with a date code of 1978 which has a typical service life of 18 years. The well needs several components. First it will need to be protected from freezing. Second the flow valve will need to be replaced to prevent leaking. The current well vent is not properly gasketed or terminated. Last a source meter should be installed prior to the reservoir.

The reservoir is below the well house and was not accessed while on site due to a large steel plate with approximately 12 fasteners with an unconfirmed seal. The water is drawn from the reservoir by a 2 hp booster pump which has a date code of 2012 with a typical service life of 18 years. This pump ran the entire time I was onsite (approx. 90 minutes) and does not appear to be reaching the cut off pressure of the system. The pressure at that time was 54 psi @ the pump and ranged from 51 to 43 psi throughout the distribution system. The piping in the well house has several connections which are dissimilar metals and may lead to leaks.

Prior to supplying water to the distribution system the water is pumped from the reservoir to the booster pump and then to a steel pressure tank approximately 270 gallons along with an 86 gallon Challenger bladder tank. The steel tank requires an air charge to be added approximately every 30-60 days depending on water usage. This equipment is housed by a failing structure which has signs of rodents along with electrical which is not up to code.

In my opinion this system needs upgrades to allow for a fair operating system.

1. Install a pitless adapter on the well with proper electrical and piping connections or pour a slab around the well with a proper structure and heat to prevent freezing. This would also address the venting concern. Approx. cost \$970.00 either way.
2. Install a source meter prior to reservoir. Approx. \$285.00.
3. Replace piping in well house to eliminate brass to galvanized connections. Approx. \$550.00.
4. Remove steel tank and install 3 82 gallon pressure tanks. Approx. \$2650.00.
5. Rewire well house with proper heat source, disconnects, generator provisions, and connections. Approx. \$2160.00
6. Insulate well house and seal penetrations. Approx. \$750.00

This system would benefit from a new well house with above ground storage reservoir, pressure tanks, proper booster pump, necessary components. This would be achieved by an engineer submitting for approval to the health department, getting approval, then constructing the system. Approximate cost of \$19,500, depending on location, power supply, and materials used.

Thank you,

Chad A Gresham