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## Spring Yield Test & Water System Inspection

7625 Tarwater Rd, Santa Rosa Ca 95404

Date: 4/8/15  
Report #: 7167-2  
Client Name: Torgeson Trust  
Agent Name: Doug Swanson - Pacific Union  
Phone: 707 291 4400

### Type of Spring:

There is a 1.5" PVC pipe emerging from the hillside near the storage tanks. There is a clay seal around the pipe. It appears to be a horizontally drilled spring source.

### Spring Yield Test:

We measured the flow of the spring with a container and stop watch. The flow consistently measured 0.85 Gallon Per Minute for the duration of the 2 hour test. The water was visibly clear. This test may not represent the long term or seasonal yield. We cannot predict the future or dry season yield of this water source.

### Note:

- The spring and spring pump system provide water to the main house.
  - The well and well pump system provide water to the rental house.
- See Report #7167-1



Spring source

1.5" PVC pipe



The spring gravity flows to fill the 1100 gallon storage tank. It fills the tank from the bottom flange. There is an overflow pipe that routes the overflow water out of the top of the tank to a nearby drainage ditch.

There is also a 2000 gallon storage tank (pictured left), which is empty and the valve at the base is closed since the tank has a leak.



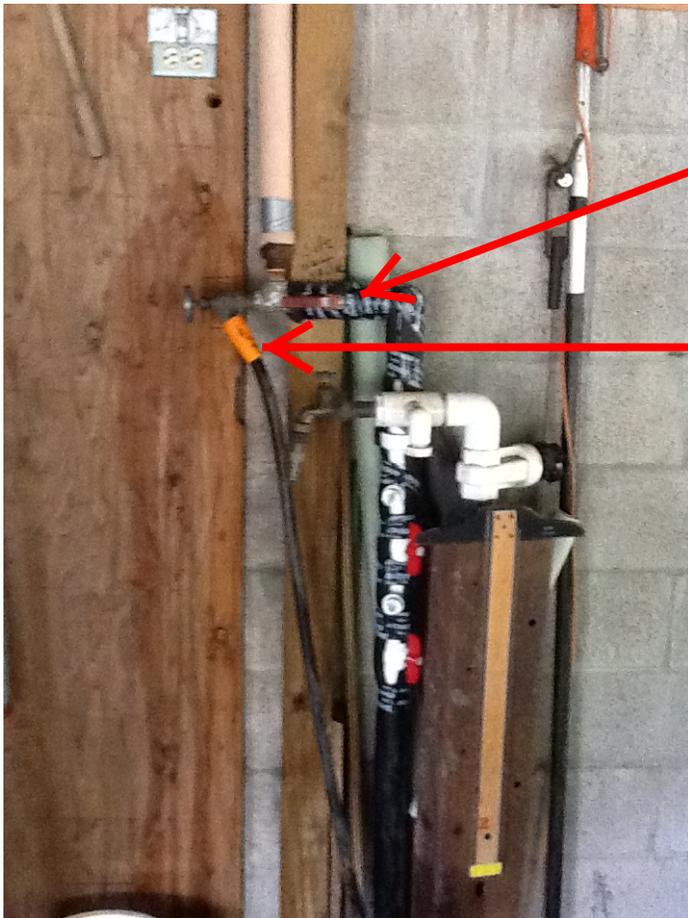
The pump system located next to the spring pressurizes water up the hill to the house.

Pump:  
1HP 230V FloTec FP4032  
Jet pump

Breaker:  
15 amp 2 pole

Pressure Tank:  
FP7110T  
Air charge:  
30 psi

System operating  
pressure:  
32 psi to 52 psi (at pump  
elevation)



The house water main located in the garage.

There is a cross connection with a garden hose that allows the well located near the rental house to supply the house in an emergency. Similarly, the spring pump can supply the rental using the same garden hose.



There is an old galvanized tank up the hill from the house. The tank is empty and is not connected.



There is a 2500 gallon poly tank at the top of the hill above the house.

There is a hose spigot on the 1" black poly tube fill pipe. The spigot did not run.

There is a 2" PVC line leaving the bottom of the tank that appears to run down the hill. The valve at the base of the tank was closed. It appears this serves a fire hydrant along the driveway. Since the valve was found closed, this line was not tested.

## Recommendations:

1. The booster pump is not protected from dry running. Recommend installing a low level float in storage tank.
2. The pressure tank is only sized for one occupant. Recommend installing larger pressure tank to prevent the pump from short cycling or installing a gravity feed system (possibly using the existing storage tank at the top of the hill).
3. The pressure switch setting on the booster pump is too low relative to the elevation change from the pump to the house therefore the pressure at the house tested 22 psi. Recommend readjusting the system pressure or installing a gravity feed system.
4. We noted a garden hose connects from the well to the main water pipe at the house. The well is only used as a backup source to the house. A more reliable method of allowing the well to cross connect to the house would be to install a buried water pipe.
5. Spring sources are vulnerable to bacteria since they are surface water sources. We recommend installation of an Ultraviolet treatment system for the house supply. Water test results pending.