CERTIFIED PROPERTY INSPECTION
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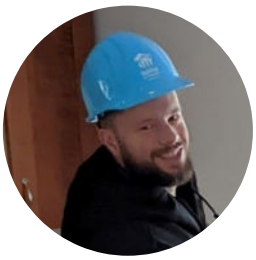
https://www.CertifiedProperty.us/

1-HOUR WELL YIELD ASSESSMENT

39 Lake Dr
Bel Air, MD 21014

Jeanne Schmidt
NOVEMBER 20, 2023



Inspector
Greg Chapman
4108180088
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1: INSPECTION DETAILS

Information

General Inspection Info: In Attendance
Client

General Inspection Info: Temperature (approximate)
40 Fahrenheit (F)

General Inspection Info: Weather Conditions
Clear

General Inspection Info: Occupancy
Partially Occupied

General Inspection Info: Well Records Available/Reviewed
Unavailable

When possible, we review any permit or repair records for the well system. We may not always receive any or all records but any that are received are reviewed to assist in understanding the history of the system. These records are not always complete or accurate. Some information in this report may be based on the information in these records, specifically related to the type, depth, and age of the well. We make no guarantee as to the accuracy of this information but are simply reporting information available about the well. The information is not verified during the well assessment.

Limitations

General Inspection Info

WELL ASSESSMENT EXPLANATION AND LIMITATIONS

Our 1-hour assessment of the well is offered to provide an affordable test of the well system, however, time is a limiting factor in this test. A longer test is the the surest way to veryify the long-term health of a well. We do offer a 3-hour test if preferred, but this test is much more expensive due to the extended time onsite monitoring the system. If you think the demands of your well will go beyond what we can measue in an hour or have further concerns about the well, please ask us about an extended test of your well.

Certified Property Inspection does not sell or install water treatment systems. Contact your local water treatment company for additional testing and recommendations to address any conditions noted in the report. If water quality sampling was performed, results will be provided when received from the lab where testing is being conducted. No assessment of life expectancy is offered regarding any components. This test is to observe current conditions on the day of inspection and note the yield produced over a 1-hour period as documented in this report. This is not a warranty or guarantee of future working conditions. No physical inspection of the interior well casing or well pump is performed.

The inspection report is not a pass or fail report.

The inspection is not a code inspection and is not to be used as a code inspection.

This report is for the exclusive use of our Client and is not intended for any other purpose. The report is based on the information available to us at the time of the inspection. Should additional information become available at a later date, we reserve the right to determine the impact, if any, the new information may have on our discovery and recommendations and to revise our opinions and conclusions if necessary.

We can make no representations regarding conditions that may be present but concealed or inaccessible during the scope. Additional reportable conditions may be discovered with further access and an opportunity for inspection. Inspection of the inaccessible areas will be performed at an additional cost after access is provided.

Blue: **Observations**
These items generally are minor maintenance items, DIY items, or recommended minor upgrades.

Orange: **RECOMMENDATIONS**
Items recommended for repair or improvement.

Red: **IMMEDIATE ACTION**

Items which should be addressed immediately.

General Inspection Info

CHANGE IN OCCUPANCY

Change in occupancy can impact the future performance of a well system. A vacant home or a home that is "under-occupied" may prevent defects with the system from being observed that can surface after a significant change in occupancy. During your inspection we make every effort to stress test the system to ensure the system is fully functional, but increased demands on the system may reveal issues that simply can't be determined during even the most thorough inspection.

Observations

1.1.1 OVERALL FINDING

Recommendation

WATER STOPPED FLOWING AFTER 55 MINUTES

WATER STOPPED FLOWING PRIOR TO COMPLETION OF TEST

Water stopped flowing from the old well during the yield test, an indication of limited reserves in the well system. Water conservation efforts like installing low-flow fixtures and conscientious water usage recommended. Limit excessive use of water for extended periods to prevent draw down of water in system and allow for ample time for recovery. Consult a well contractor for potential system improvements as needed.

1.1.2 OVERALL FINDING

Recommendation

SEE REPORT DETAILS FOR ADDITIONAL INFO

SEE REPORT BODY AND DETAILS FOR ADDITIONAL INFO AND RECOMMENDATIONS

2: NEW WELL

Information

General Well Info: Well Location
Rear Yard

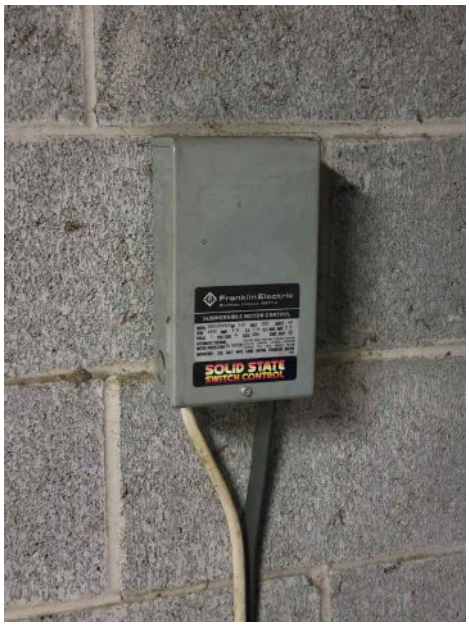
General Well Info: Well Casing
PVC, 12+" Above Grade

General Well Info: Well Cap
2-Pc Vermin Proof Cap, Secure

General Well Info: Well Conduit
Plastic, Damaged

Well Equipment: Well Pump Type
Submersible (Not Visible)

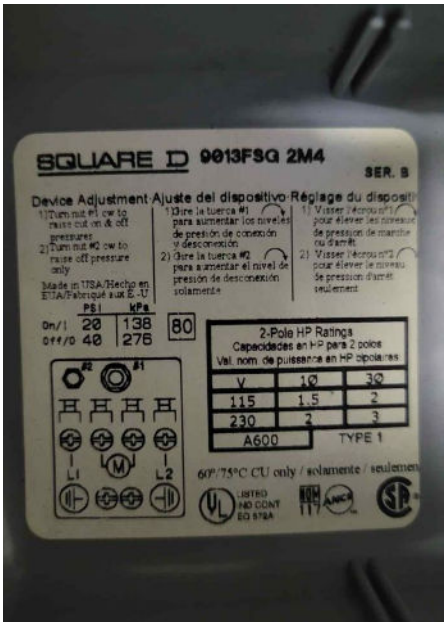
Well Equipment: Control Box
Pump Control Box is present

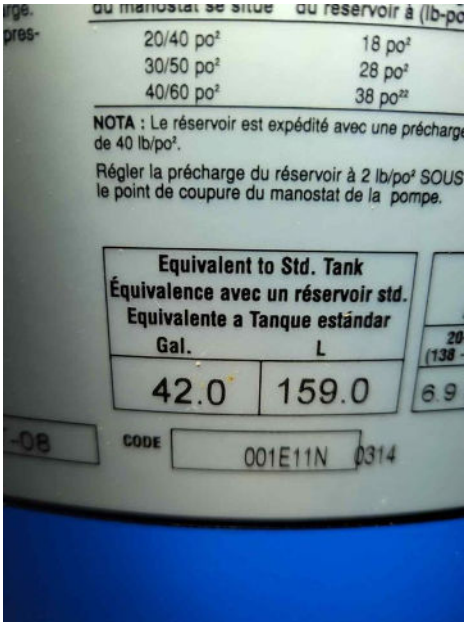


Well Equipment: Pressure Switch Settings
20-40

Well Equipment: Pressure Tank Size
42 Gallons

Well Equipment: Pressure Tank Age (Estimated)
4 years old





Water Treatment: General Photos

Water Treatment: Water Treatment Type

Water Treatment: Water Treatment Installation


Salt softener system

Salt

Not in Use, Bypass Loop Present


Bypass loop

Yield Assessment Findings: Initial Flow Reading
31 Seconds

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: 15 Min Flow Reading
36 Seconds

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: 30 Min Flow Reading
36 Seconds

Time to fill a 5 Gallon Bucket.


Bucket and gauges used to monitor pressure and flow

Yield Assessment Findings: 45 Min Flow Reading
36 Seconds

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: 60 Min Flow Reading
36 Seconds

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: Final Flow Rate
8.6+ GPM

Yield Assessment Findings: Water Appearance
Clear

General Well Info: Type
Drilled


Well head

Well ID tag

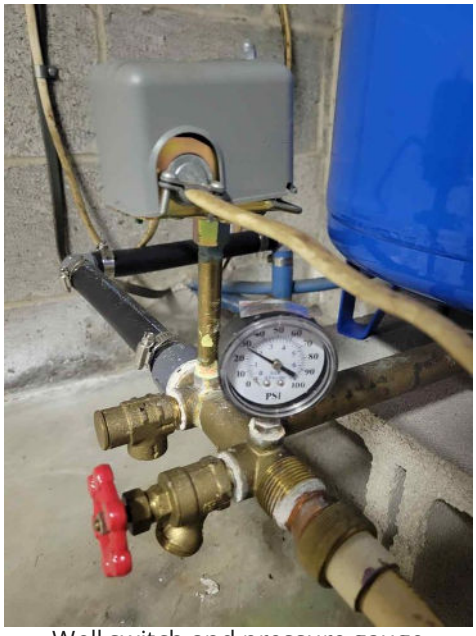
General Well Info: **Depth (ft)**

0 Unknown

Based on the well records provided (we do not verify this information during the yield testing).

Well Equipment: **General Photos**


Pressure tank


Well switch and pressure gauge

Well Equipment: **Well Pump Age (Estimated)**

Unknown

This information is not physically verified at the pump but rather taken from any labeling left by the installer.

Well Equipment: **Well Pump Size**

Unknown

This information is not pysically verified at the pump but rather taken from any labeling left by the installer.

Well Equipment: **Pressure Tank Pressure**

38 Normal

The pressure tank pressure should be charged to approx. 2PSI lower than the low pressure switch limit. Ie, if the pressure switch is a 40/60 PSI switch, the pressure tank should be charged to approx. 38 PSI.

Limitations

Well Equipment

PUMP HORSEPOWER UNKNOWN

Pump is inside well so no information is available.

Yield Assessment Findings

FLOW CONTROLLED AFTER INITIAL READINGS

The flow was observed initially with the valve "wide open" and measurements are taken. This flow rate is typically in excess of household needs. After 15-30 minutes, if the water is flowing in excess of 8GPM, the water is dialed back to this level. The goal is to observe approx. 500 gallons of water during the 1-hour test.

Observations

2.1.1 General Well Info

WELL CONDUIT DAMAGED

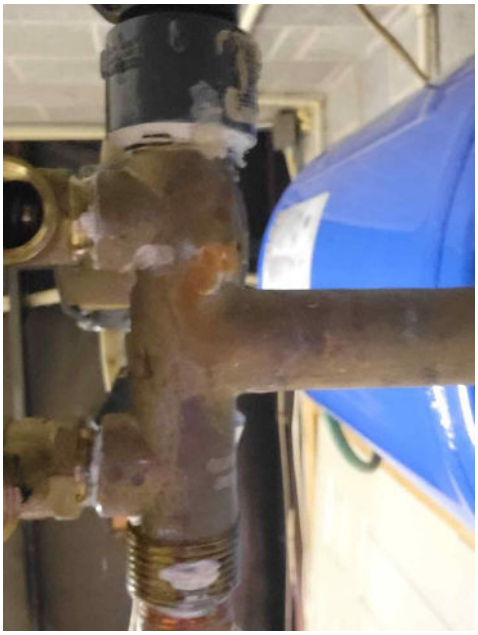
Recommendation

2.2.1 Well Equipment

Observation

PRESSURE GAUGE/MANIFOLD CORRODED

Pressure gauge and/or manifold corroded at pressure tank which may cause premature failure or leak. Recommend replacing.



3: OLD WELL

Information

General Well Info: Well Location
Left Side Yard

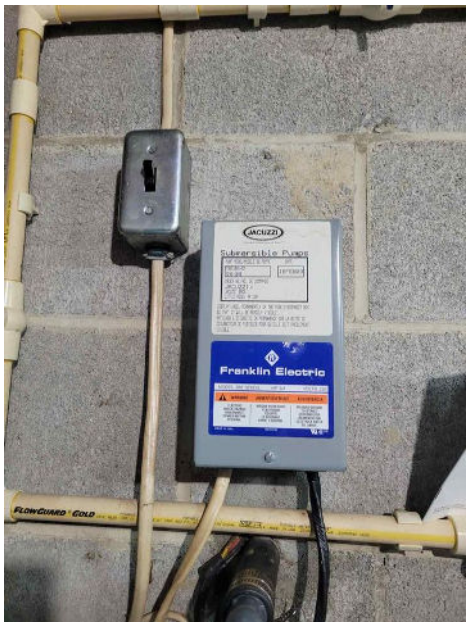
General Well Info: Well Casing
ST, 12+" Above Grade

General Well Info: Well Cap
1-Pc Cap, Loose

General Well Info: Well Conduit
Metal, Functional

Well Equipment: Well Pump Type
Submersible (Not Visible)

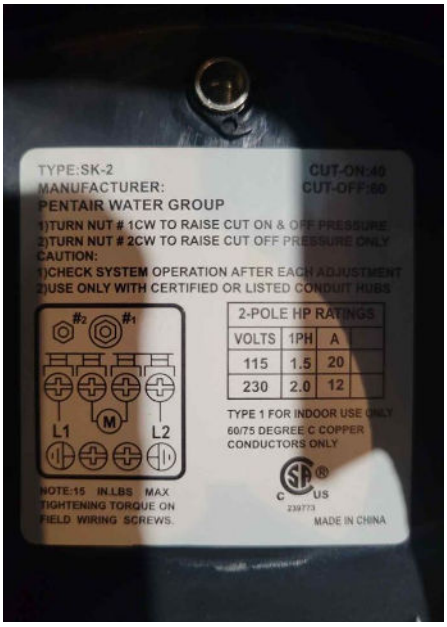
Well Equipment: Control Box
Pump Control Box is present

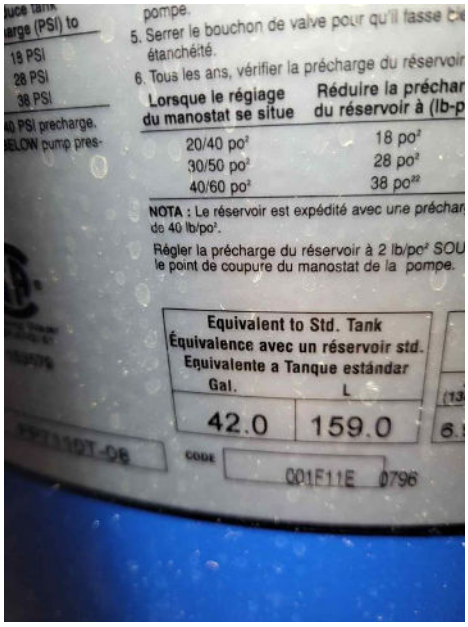


Well Equipment: Pressure Switch Settings
40-60

Well Equipment: Pressure Tank Size
42

Well Equipment: Pressure Tank Age (Estimated)
4 years old





Water Treatment: General Photos

Water Treatment: Water Treatment Type

Water Treatment: Water Treatment Installation


Salt Softener System

Salt

Not in Use, Bypass Loop Present


Bypass Loop

Yield Assessment Findings: Initial Flow Reading

41

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: 15 Min Flow Reading

49

Time to fill a 5 Gallon Bucket.

Yield Assessment Findings: 30 Min Flow Reading

60

Time to fill a 5 Gallon Bucket.


Bucket and gauges used to monitor pressure and flow

Yield Assessment Findings: 45 Min Flow Reading

69

Time to fill a 5 Gallon Bucket.

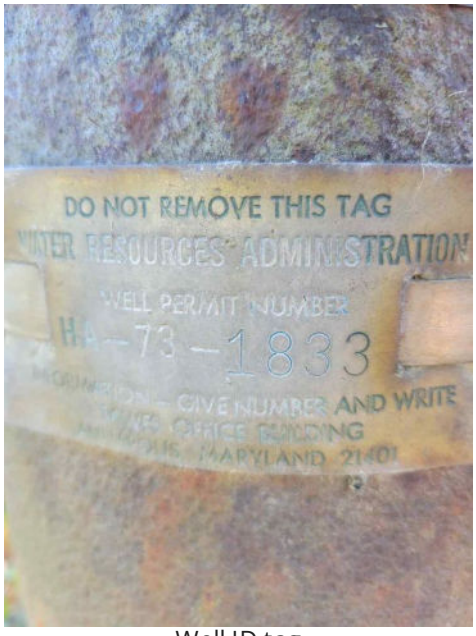
Yield Assessment Findings: Water Appearance

Clear

General Well Info: Type

Drilled

Well head



Well ID tag

General Well Info: Depth (ft)

0 Unknown

Based on the well records provided (we do not verify this information during the yield testing).

Well Equipment: General Photos

Pressure tank

Well switch and pressure gauge

Well Equipment: Well Pump Age (Estimated)

Unknown

This information is not physically verified at the pump but rather taken from any labeling left by the installer.

Well Equipment: Well Pump Size

Unknown

This information is not pysically verified at the pump but rather taken from any labeling left by the installer.

Well Equipment: Pressure Tank Pressure

38 Normal

The pressure tank pressure should be charged to approx. 2PSI lower than the low pressure switch limit. Ie, if the pressure switch is a 40/60 PSI switch, the pressure tank should be charged to approx. 38 PSI.

Yield Assessment Findings: **Estimated Recharge Rate**

1.2 GPM

Intitial Estimated Recharge Rate was # GPM.

Water stopped flowing during the well test. When this occurs, the test is stopped for a period of time, typically 15-20 minutes. When the test is continued, we estimate the recharge rate by catching all water which has accumulated in the system during the stoppage. It's recommended to have at least 1 GPM of recharge, however, other factors like the total system reserve are equally relevant to the health of the well system.

It's important to understand that if water stops flowing during a 1-hour test, this is an indication of a well system with limitations that should be taken into consideration. Improvements to the system may be needed depending on the water usage practices of the occupants. A longer test may find declining recharge rates over time. Consult a well contractor for possible improvements to the system as deemed necessary.

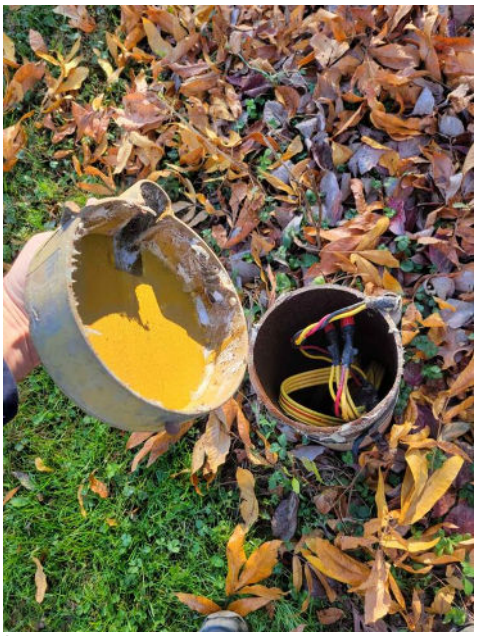
Observations

3.1.1 General Well Info

Recommendation

WELL CAP LOOSE/DAMAGED

Repair/secure as needed.



Loose cap

Cracked cap

3.1.2 General Well Info

Observation

RECOMMEND 2-PIECE WELL CAP

3.2.1 Well Equipment

Observation

PRESSURE GAUGE/MANIFOLD CORRODED

Pressure gauge and/or manifold corroded at pressure tank which may cause premature failure or leak. Recommend replacing.

3.4.1 Yield Assessment Findings

Recommendation

WATER STOPPED FLOWING AFTER 55 MINUTES

Water stopped flowing from the old well during the yield test, an indication of limited reserves in the well system. Once the system recharged, the recovery rate was above the minimum of 1.0 GPM. Water conservation efforts like installing low-flow fixtures and conscientious water usage recommended. Limit excessive use of water for extended periods to prevent draw down of water in system and allow for ample time for recovery. Consult a well contractor for potential system improvements as needed.

4: UNDERSTANDING YOUR WELL SYSTEM

Information

:: Private Water Wells

Private Water Wells

If your family gets drinking water from a private well, do you know if your water is safe to drink? What health risks could you and your family face? Where can you go for help or advice? The EPA regulates public water systems; it does not have the authority to regulate private drinking water wells. Approximately 15% of Americans rely on their own private drinking water supplies, and these supplies are not subject to EPA standards, although some state and local governments do set rules to protect users of these wells. Unlike public drinking water systems serving many people, they do not have experts regularly checking the water's source and its quality before it is sent to the tap. These households must take special precautions to ensure the protection and maintenance of their drinking water supplies.

Basic Information

There are three types of private drinking water wells: dug, driven, and drilled. Proper well construction and continued maintenance are keys to the safety of your water supply. Your state water-well contractor licensing agency, local health department, or local water system professional can provide information on well construction. The well should be located so rainwater flows away from it. Rainwater can pick up harmful bacteria and chemicals on the land's surface. If this water pools near your well, it can seep into it, potentially causing health problems. Water-well drillers and pump-well installers are listed in your local phone directory. The contractor should be bonded and insured. Make certain your ground water contractor is registered or licensed in your state, if required. If your state does not have a licensing/registration program, contact the National Ground Water Association.

Many homeowners tend to forget the value of good maintenance until problems reach crisis-levels. That can be expensive. It's better to maintain your well, find problems early, and correct them to protect your well's performance. Keep up-to-date records of well installation and repairs, plus pumping and water tests. Such records can help spot changes and possible problems with your water system. If you have problems, ask a local expert to check your well construction and maintenance records. He or she can see if your system is okay or needs work.

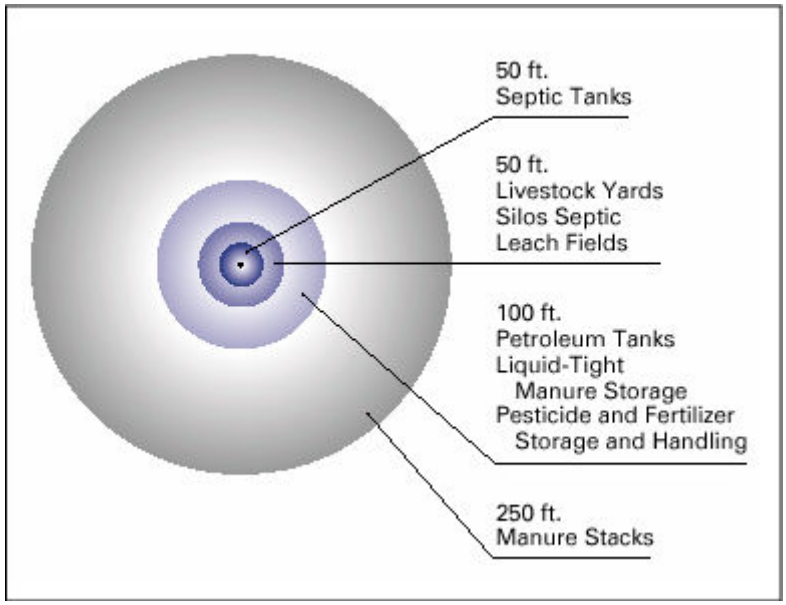
Protect your own well area. Be careful about storage and disposal of household and lawn-care chemicals and wastes. Good farmers and gardeners minimize the use of fertilizers and pesticides. Take steps to reduce erosion and prevent surface water runoff. Regularly check underground storage tanks that hold home heating oil, diesel, or gasoline. Make sure your well is protected from the wastes of livestock, pets and wildlife.

:: Well Location

Well Location Info

To keep your well safe, you must be sure that possible sources of contamination are not close by. Experts suggest the following distances as a minimum for protection — farther is better (see graphic on the right):

- septic tanks: 50 feet;
- livestock yards, silos, septic leach fields: 50 feet;
- petroleum tanks, liquid-tight manure storage and fertilizer storage and handling: 100 feet; and
- manure stacks: 250 feet.

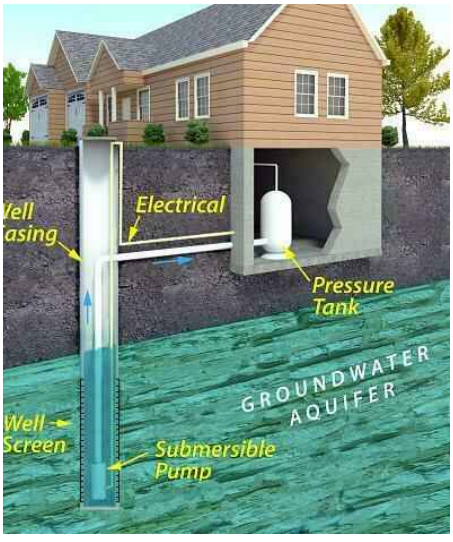


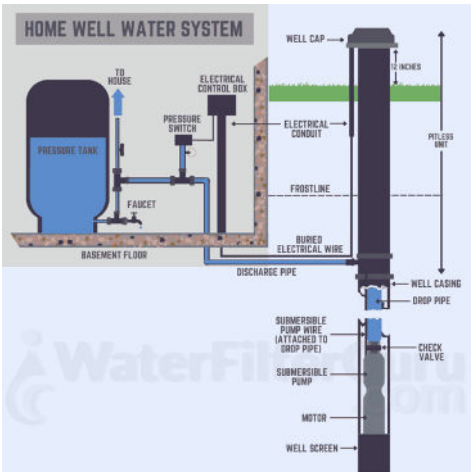
:: Drilled Well Basics

Drilled Well Basics

Drilled wells are the most common modern type of well, constructed by percussion or rotary-drilling machines. Drilled wells can be hundreds of feet deep and require the installation of casing. Drilled wells have a lower risk of contamination due to their depth and use of continuous casing. Drilled wells should have a casing that extends above the surface with a secure cap.

- Well Casing is the pipe placed in the well to maintain the well opening from the target ground water to the surface. Along with grout, the casing keeps dirt and surface water out of the well. This helps prevent contaminants from less desirable groundwater from entering the well and mixing with the drinking water. Most states and local governing agencies have laws that require minimum lengths for casing. The most common materials for well casing are carbon steel, plastic, and stainless steel. Local geology often dictates what type of casing can be used.
- Well Caps are placed on top of the well casing to prevent debris, insects, or small animals from getting into the well. Well caps are usually made of aluminum or plastic.
- Well Screens are attached to the bottom of the casing to prevent too much sediment from entering the well. The most common well screens are continuous slot, slotted pipe, and perforated pipe.
- Pitless Adapter is a connector that allows the pipe carrying water to the surface to remain below the frost line. It provides ensures that a sanitary and frost-proof seal is maintained.
- Jet Pumps are the most commonly used pumps for shallow wells (depth of 25 feet or less). Jet pumps are mounted above ground and use suction to draw water from the well.
- Submersible Pumps are the most commonly used pumps for deep private wells. The pumping unit is placed inside the well casing and connected to a power source on the surface.





:: Basic Well System Equipment

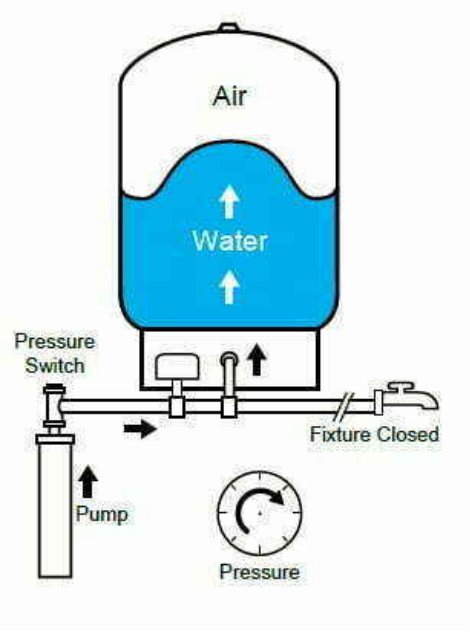
Understanding Well Equipment

In order for your well system to function properly and supply water to the house, we need more than just a well drilled in the yard. There are several important components above ground that make sure the water gets to and is distributed through the house.

The pressure tank is the first stop in the house. This is typically a metal tank, often blue, with a bladder inside for the water and charged with compressed air. This is used to create a pressure range for the water inside the house and cycle the pump and normal intervals.

The pressure tank will generally have a manifold consisting of a control switch with pressure settings corrosponding to the pressure in the pressure tank. In addition there is typically a pressure gauge to read the settings as well as a drain valve.

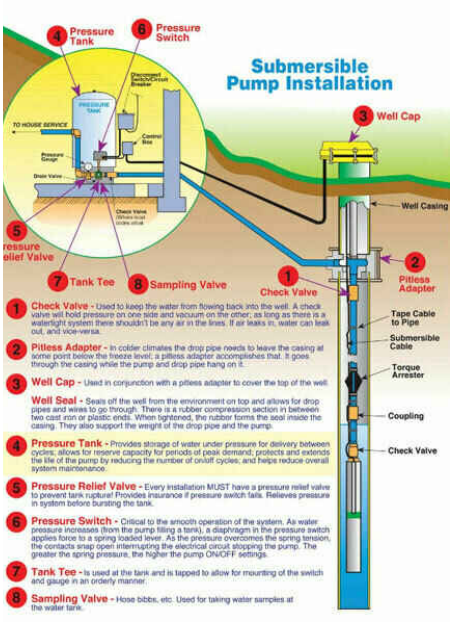
The most common settings for these systems are 30/50 or 40/60. The pump would turn on when the system hits the low pressure setting and the pump would shut off when hitting the high pressure limit.



:: Submersible Pumps

Submersible Pumps

Your system has a submersible pump. The great news is that you won't hear each time the pump turns on and off because the pump is down in your well. However, generally speaking, if the pump requires any repairs, it will usually mean calling a professional as the pump will have to be pulled from the well to assess and repair and wells with submersible pumps can be several hundred feet deep. During your inspection we do not physically inspect the pump. We assess the pump based on performance, ie, how it pumps water.


Submersible
Pump Installation
4 Pressure Tank
6 Pressure Switch
3 Well Cap
Well Casing
5 ressure elief Valve
7 Tank Tee
8 Sampling Valve
1 Check Valve
2 Pitless Adapter
Tape Cable to Pipe
Submersible Cable
Torque Arrester
Coupling
Check Valve
1 Check Valve - Used to keep the water from flowing back into the well. A check valve will hold pressure on one side and vacuum on the other; as long as there is a watertight system there shouldn't be any air in the lines. If air leaks in, water can leak out, and vice-versa.
2 Pitless Adapter - In colder climates the drop pipe needs to leave the casing at some point below the freeze level; a pitless adapter accomplishes that. It goes through the casing while the pump and drop pipe hang on it.
3 Well Cap - Used in conjunction with a pitless adapter to cover the top of the well.
Well Seal - Seals off the well from the environment on top and allows for drop pipes and wires to go through. There is a rubber compression section in between two cast iron or plastic ends. When tightened, the rubber forms the seal inside the casing. They also support the weight of the drop pipe and the pump.
4 Pressure Tank - Provides storage of water under pressure for delivery between cycles, allows for reserve capacity for periods of peak demand, protects and extends the life of the pump by reducing the number of on/off cycles, and helps reduce overall system maintenance.
5 Pressure Relief Valve - Every installation MUST have a pressure relief valve to prevent tank rupture! Provides insurance if pressure switch fails. Relieves pressure in system before bursting the tank.
6 Pressure Switch - Critical to the smooth operation of the system. As water pressure increases (from the pump filling a tank), a diaphragm in the pressure switch applies force to a spring loaded lever. As the pressure overcomes the spring tension, the contacts snap open interrupting the electrical circuit stopping the pump. The greater the spring pressure, the higher the pump ON/OFF settings.
7 Tank Tee - Is used at the tank and is tapped to allow for mounting of the switch and gauge in an orderly manner.
8 Sampling Valve - Hose bibbs, etc. Used for taking water samples at the water tank.