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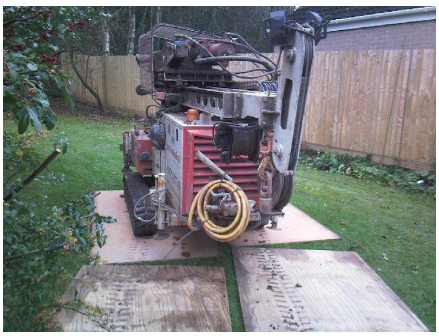
Complete Water Solutions

Below is a step-by-step guide to the process of installing a borehole

Step 1 – A Site Consultation/Basic feasibility study

After your initial contact we may arrange a site consultation. This may involve a representative of the drilling team and our installation team visiting site to establish the most suitable drilling site, and either a water diviner attending or a hydrological survey being undertaken. From our site visit an initial idea of whether the water bearing aquifer will yield the quantity of water required will be established. Our visiting engineer will be happy to explain all the options to ensure that you get the correct system for your needs.

Step 2 - The drilling and lining of the borehole



This is not undertaken by FWT but we have joined forces with a number of specialist drilling companies who have a wide variety of drilling rigs capable of drilling in any location.

The rig will come to site and the borehole drilled, the depth may vary depending on the actual level at which the water is found. The drillers will also line the borehole with a slotted liner at lower levels to allow water to percolate and a solid liner near the surface to prevent migration of surface water into the well.

Step 3 - Pump Testing

Once the borehole has been drilled, the borehole may require a pump test. The borehole is pumped over a period of time to assess both the volume of water it will produce and the speed at which the surrounding rocks will release the water. If required FWT have developed a data recording pump controller that can be left onsite during this process (this requires a 230V 16Amp power supply). The scope and length of the test pump will be dependant on a number of factors, such as anticipated flow rate, volume and/or EA requirements.

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Step 4 Potable water test

This will give you a breakdown of the chemical and bacterial parameters within the water, from this any additional water treatment equipment can be recommended.

Step 5- System Design

FWT will design a complete system catering for all your needs based on the information provided along with the yield and water test results.

Step 6- Installation of pump, water supply equipment and controls

Depending upon the speed at which the water is released from the rock there are two options. If the water is released quickly then the borehole itself can be used as the storage reservoir and a high output pump installed. If the rock releases water slowly then we can install a potable water storage tank on the surface to store the water above ground and a lower output pump will be used in the borehole with an additional transfer pump in the tank. The water storage tank can be on the surface, partially buried or below ground depending on your location and requirements.

Dependant on the results from the above FWT generally installs one of two types of pumping system.

- Single speed pumping system

Pumping at a constant rate regardless of demand, these systems can be used to pump to a tank or used direct with a pressure vessel and control panel. FWT always recommend the use of dry run protection on all fixed speed systems.

- Variable speed pump system

FWT only use variable speed pumping systems if the ground is capable of releasing the water quickly, they are capable of maintaining a constant pressure in relation to the varied flow rates. The pressure can be adjusted on the variable speed unit, which also includes protection against pump overheating and abnormal voltages in power supply. The main advantage of using a variable speed pump is the reduced running costs.

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Pipe work and Trenching

If required we are able to carry out all ground-works, laying of pipes and cables from the borehole to the system controls and on to the service line. If, however, you are undertaking a major project we are flexible and happy to liase with any on site contractors.

Step 7 – Additional treatment

The quality of water and minerals supplied by boreholes sometimes may require treatment, typically for bacteria or sediment but sometime for other chemical parameters

If the property you and your family live in is the only property supplied by a water source, and only your family drink the water, and the water sample is clear, treatment may not be required although you do have a duty of care to supply a safe supply of water. If the supply is being used by a company/ business or is a shared supply then treatment for sediment and bacteria will be required as a minimum by the local authority along with any other recommendations made from the findings of the water test in line with a site specific risk assessment.

Step 8-Maintenance and risk assessments

Once installed and commissioned your borehole system should provide many years of trouble free service, if maintained properly. As a minimum, annual checks should be made to the pumping equipment, pipe work and any treatment equipment. We would be happy to help in the production of your private water risk assessment if required. FWT offer a comprehensive service and maintenance scheme so you can be sure your borehole is operating efficiently.