BUILDING WITH WELL AND SEPTIC
This booklet is intended for use by people planning to develop an existing residential lot to be served by private water well and onsite sewage disposal systems (OSDS), commonly referred to as “septic” systems. It is not intended for those planning to subdivide property or to develop commercial property.

For information regarding subdivision or commercial developments, contact the Development Coordination office at 410-887-5859.

Questions regarding information contained in this booklet should be directed to Ground Water Management 410-887-2762.

Visit us online at: http://www.baltimorecountymd.gov/agencies/environment/groundwatermgt/

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New homes constructed outside the service area of public water and sewerage in Baltimore County requires considerable site evaluation before a building permit can be approved. Careful planning prior to construction is in the best interests of the potential homeowner and the public at large. The proper placement and construction of your well and septic system is extremely important in protecting water quality and human health.

The 10 steps outlined in this booklet will assist you in understanding procedures and the information that will be required in the building process.

Step 1 - Prepare a site plan.

Step 2 - File for a percolation test.

Step 3 - Schedule the percolation test.

Step 4 - Obtain a well permit.

Step 5 - Arrange for well site approval.

Step 6 - Drill the well.

Step 7 - File for a building permit.

Step 8 - Build the house.

Step 9 - Arrange for water quality testing.

Step 10 - Obtain the Certificate of Potability.
Step 1: Prepare a site plan

The first step in the building process is preparation of a scaled site plan and vicinity map. Consider the desired placement of your house on the property and then contact the County Zoning Office (410-887-3391) for guidance and setback requirements.

The proposed house, well drilling area, and septic reserve area (SRA) must be depicted on the plan using the siting restrictions. The siting restrictions are required by state and local codes to protect the well and ground water from contamination and to ensure a properly functioning OSDS.

The plan must include topographic lines and be drawn to a scale of 1 inch = 60 feet or larger. Features such as existing wells, OSDS, streams, and structures, which are within 200 feet of a property line must be shown. The zoning and tier designation for the property must be noted on the plan. Mapped soil types as designated in the Baltimore County Soil Survey Manual may expedite review and approval. An example of an acceptable site plan is presented.

Well Locations Must Be:

- At least 10 feet from property lines.
- At least 15 feet from roads or dedicated easements.
- At least 30 feet from a building foundation.
- At least 100 feet from neighboring SRA.
- At least 100 feet from neighboring wells.
- At least 100 feet from stormwater infiltration devices.
- At an elevation higher or equivalent to the highest elevation of the OSDS.
SRAs Must Be:

- At an elevation lower or equivalent to the well.
- At least 20 feet from the proposed house.
- At least 100 feet from any well.
- At least 10,000 square feet in areas for property subdivided after March, 1972. Property subdivided prior to March, 1972, must have sufficient area for one OSDS installation and one complete repair (generally, 5,000 square feet area is needed).
- At least 10 feet from property lines or dedicated easements.
- At least 25 feet from steep slopes (i.e., slopes 25% or greater).
- At least 100 feet from any stream or body of water.
- Outside of forest buffer and forest conservation easements or habitat protection area in the Chesapeake Bay Critical Area.
Step 2: File for a Percolation Test
County certified soil percolation tests, or “perc” tests, are required to determine the suitability of a sewage disposal system on your property. To file for a perc test permit, an application must be made, in person, and four site plans submitted, at the Baltimore County Department of Permits, Approvals and Inspections (PAI: 410-887-3900). Currently, a $60.00 fee per lot is required with this application.

To process your permit application, a review must be conducted by:

1. The Department of Planning to determine zoning requirements or restrictions;
2. The Department of Public Works to determine the Master Water and Sewer Plan designation, and individual street address of your property, and
3. The Department of Environmental Protection and Sustainability (EPS).

The EPS, Ground Water Management (GWM) section will conduct a preliminary review of the drawing(s) prepared by an engineer or surveyor. If details depicted on the preliminary engineered site plan are found to be in conformance with the siting criteria, the permit application will be accepted.

The perc application and plans will subsequently be reviewed by the Environmental Impact Review (EIR) section of EPS for compliance with forest conservation, forest buffer and wetland regulations. The plan will also be reviewed by the Department of Planning.

Depending on the property, you may be contacted for additional information or a request to visit the site before approving the perc test locations.

Upon completion of EPS review, you will be sent a letter indicating the status of your perc application. If approval is granted, you may proceed with scheduling the perc tests.
Step 3: Scheduling the Perc Test

An excavation contractor is usually hired by the property owner to dig the soil evaluation pits. The contractor should contact GWM directly to make an appointment with one of the Licensed Environmental Health Specialists (LEHS).

Typically, the pits are dug with a backhoe to a depth of approximately 16 feet. Soil characteristics, ground water levels (if encountered), and depth to bedrock (if encountered) are noted. A water test to assess the soil permeability will be performed by the LEHS at a depth equivalent to where the soil absorption system will be installed (typically 4 to 6 feet).

For a single lot, standard perc tests can be completed in about an hour. Sand mound testing (for soils of slow permeability only) may take up to 5 hours to complete. A letter indicating results of the perc tests and whether the lot is approved or disapproved for the construction of an on-site sewage disposal system will be sent to you by GWM.

Occasionally, modifications must be made to the proposed plan prior to approval. The applicant will be notified in writing regarding the revisions.
necessary. These changes are the responsibility of the applicant and should be completed as soon as possible so that site development may progress.

**Step 4: Obtain a Well Permit**

Upon completion and approval of the perc tests and SRA, arrangements should be made to drill a well for a domestic water supply. You must hire a well driller who is licensed in the State of Maryland. The well driller should visit the site and be provided a copy of the most recent site plan to properly bid on the job.

The well driller is responsible for obtaining the well permit, as well as submitting to EPS a well completion report, and yield test results after the well is drilled.

**Step 5: Arrange for Well Site Approval**

Prior to drilling, the applicant (or driller) must call GWM to approve the proposed well location area. You are responsible for accurately locating the property corners, house corners, and well area according to the approved perc test plot plan. It is recommended that a professional surveyor be hired to stake the pertinent features on your property. If the well location is in conformance with the approved plan, a representative from GWM will sign the well stake and authorize the drilling to proceed.

**Step 6: Drill the Well**

The driller may only drill within the approved well area. If an unsuccessful well is drilled, the driller may move to another location within the approved well area without an additional inspection by GWM. If locations are proposed outside of the staked area, revised plans must be submitted to GWM for review and approval.
After drilling the well, the driller is required to perform a yield test to determine whether there is a sufficient quantity of water in the well.

The testing procedure takes from three to six hours, depending on the well yield. The well driller must record the water level and pumping rate every 15 minutes until the test is completed.

**As stipulated in the MD State Well Construction Regulations (COMAR 26.04.04), a minimum yield of one gallon per minute for six hours is required. A building permit will not be issued for a property unless it has an individual water supply that meets the minimum yield requirements.**

Upon verifying adequate yield, the well driller completes the well by sealing the casing into the bedrock with a procedure known as grouting. The grout seal prevents surface water from contaminating the ground water.

A cap is placed on the well and the well tag containing the State identification number is attached. It is recommended that the well cap be securely fastened to the casing to prevent vandalism.
Step 7: File for a Building Permit

Once the SRA has been established and the well has been drilled, it is time to apply for a Building Permit. An application must be filed with the Department of Permits, Approvals, and Inspections (PAI) with a site plan that will be reviewed again for compliance with all siting requirements. If it has been in excess of five years since the soil percolation tests have been performed, additional tests may be required. Soil percolation tests may be revalidated by submitting a request to GWM. According to Article 35, Baltimore County Code, if a water yield test is over three years old, a new test must be performed.

Eleven copies of the site plan must be submitted with the Building Permit application. Upon review and approval by GWM, you will be sent a letter detailing the OSDS system design and well information. A copy of the approved OSDS design and layout is also sent to PAI, Plumbing Inspection, so that your licensed plumber or sewage disposal contractor can obtain the appropriate permits and inspections for the system installation.

Step 8: Build the House

During construction of the house, care should be taken to ensure that the OSDS installed in accordance with the approved plans and that the well and SRA are protected from damage. Vehicular traffic or heavy equipment should not be allowed in the SRA. In addition, no trenching, or cutting and filling of soils should be performed within the SRA without GWM approval. Compaction or removal of soils in the SRA may severely impact the proper functioning of the OSDS.

Left: Typical manhole risers on a newly installed OSDS

Photo courtesy of Miranda Livas
**Step 9: Arrange for Water Quality Testing**

While supervising the construction of your house, it is important to keep in mind that prior to obtaining your Use and Occupancy permit, water quality tests must be performed on the water supply. The OSDS design letter will detail what water quality parameters must be tested for the well serving the subject property.

GWM may be contacted to arrange for the collection of water samples or you may elect to have a private Maryland State certified laboratory collect water samples for analysis.

To obtain a representative bacteriological sample, the entire house plumbing system must be disinfected. The well water supply and distribution system must be disinfected at least 24 hours prior to water testing. This disinfection should be performed by a licensed plumber, well pump installer, or well driller.

GWM will sign-off on the Use and Occupancy permit upon receipt of a satisfactory water analysis report.

**Step 10: Obtain Certificate of Potability**

Approval of a Use and Occupancy Permit constitutes preliminary approval of a well water supply for potability (safe to drink). Maryland State regulations require that a second bacteriological sampling be made of the water supply within six months after the first sample in order to obtain the Full Certificate of Potability. The homeowner is responsible for arranging the second test. A private certified laboratory or GWM (410-887-2762) may be contacted for these services.
Questions?

You may contact the EPS Ground Water Management by:
Phone: 410-887-2762
Email: groundwater@baltimorecountymd.gov

Or you can visit us online at:
http://www.baltimorecountymd.gov/agencies/environment/groundwatermgt/

Other Booklets Available:


Ground Water and Wells in Baltimore County

Radionuclides and Your Well Water: A Homeowners Guide