B A L T I M O R E C O U N T Y

DEPARTMENT OF ENVIRONMENTAL PROTECTION & SUSTAINABILITY

GROUND WATER MANAGEMENT POLICY MANUAL

Mission Statement: To regulate the sanitary use of ground water and the proper disposal of wastewater by on-site sewage disposal system; and to implement the County's Ground Water Management and Protection Strategy (which is an Amendment to the Master Plan).

SOIL EVALUATION PROGRAM

The Soil Evaluation Program ensures the proper siting and design of on-site sewage disposal systems (OSDS) for new construction as well as OSDS repairs.

Percolation Test Application Procedures

The applicant must submit a completed application form (see Appendix A-1), four (4) copies of an acceptable site plan prepared by a Maryland licensed professional engineer, professional land surveyor, or landscape architect, and payment to the Department of Permits, Approvals and Inspections (PAI) (see Appendix A-2). The fee for percolation testing should be based on the total number of sewage reserve areas being proposed, including existing dwellings.

Site Plan Requirements:

- Plan must be to scale (1" = 100' or less) and show existing and proposed property lines and existing structures on and within 200 feet of the subject property.

- Proposed lots on the plan must be labeled with consecutive numbers (i.e., Lot 1, Lot 2, Lot 3, etc.)

- Plan must show the accurate location of all existing and proposed wells and well areas, OSDS components (i.e., septic tanks, seepage pits, trenches, etc.), sewage disposal areas, and USTs within 200 feet of the property line.

- Plan must show proposed dwelling sites with associated 10,000 sq. ft. sewage disposal areas (SDAs), proposed soil test sites (min. of 3 per SDA), and proposed well sites on the subject property. Proposed soil test sites must have unique labels (i.e., 1A, 1B, 1C on Lot 1 and 2A, 2B, 2C on Lot 2, etc.).

- Plan layout should be in compliance with COMAR 26.04.02.04 K and COBAR 01.03.01.05A.

- Plan must show topography (at 5 foot intervals or less) with a note indicating the source and date of the information shown (i.e., Baltimore County GIS tiles or field run topography).

- Plan must show soil types and soil boundaries with a note indicating the source and date of the information shown (i.e., Baltimore County Web Soil Survey).

- The plan must show the owner name, address (and subdivision name, lot, block and section number, if applicable) of all of the surrounding properties within 200 feet of the subject property.

- The plan must include a chart which lists by address each of the adjacent properties depicting specifically how the information regarding existing well, septic systems, and USTs was obtained (see example below).

- Plan must note the existing zoning, Master Water and Sewerage Plan designation and Tier Map designation on the plan.

- All plans must be signed sealed and dated from a Maryland licensed professional engineer, professional land surveyor or landscape architect.

- It is expected that the licensed professional will initially check with Department files with regard to existing well and OSDS information, and verify all information in the field by visual observation and/or direct contact with the property owners. If an owner is not home at the time of inspection, the engineer/surveyor should make other arrangements to contact the owner in order to gain the information requested. If an owner refuses to cooperate or allow entry to locate the required facilities, it should be noted on the plan.

The Department may consider relief from the above requirements for existing lots of record on a case-by-case basis.

Example of Chart for Well and OSDS Information for Surrounding Properties

Property	Type of Info	Exists	Source			Unknown
Address		(Y/N)	As Per DEPRM Files	As Per Property Owner	Located by Survey	
Address #1	Well					
	OSDS					
	UST					
Address #2	Well					
	OSDS					
	UST					
Address #3	Well					
	OSDS					
	UST					

Preliminary Assessment

Prior to obtaining approval to schedule percolation testing, a preliminary assessment (Perc PA) must be conducted by the Ground Water Management and Environmental Impact Review Section of EPS as well as a review by the Department of Planning. Applicants will be notified by mail or email if application is denied, approved, or if additional information is required.

Wet Weather Testing

Percolation testing will be required during wet weather season in accordance with COBAR 01.03.01.04. Regardless of property location, installation of ground water piezometers and water level monitoring may be required for a period of up to one year if the Department has reason to suspect a seasonal fluctuating ground water table.

Master Water and Sewer Plan Designation and Tier Map Designation, and Zoning

Percolation testing will not be performed in areas not designated as S-5, S-6 or S-7 in the Master Water and Sewerage Plan unless the applicant has variance from DPW. If a sewage disposal area is approved, an Interim Agreement for each approved lot must be signed and recorded in Land Records prior to building permit. Also see COBAR 01.03.01.03 L. Appendix A-3 contains the Master Water and Sewerage Plan Variance application. Appendix A-4 contains the Interim Agreement form.

If percolation testing is being conducted for a proposed subdivision, the number of lots proposed must be consistent with the allowable number of lots for the property's Tier Map designation. Tier Map designations for properties may be obtained through the Department of Planning.

For properties with split zoning, both the well and sewage disposal areas to serve the proposed use must be located within the same zoning or within zoning with compatible uses, (i.e., residential vs. commercial).

OSDS Siting Requirements

Minimum Setback Distances

OSDS siting requirements must be in accordance with COMAR26.04.02.04 J and COBAR 01.03.01.05.

Proposed OSDS and repair areas must be at least 50 feet from wells that have been properly abandoned. The Department may allow for a sewage reserve area to be up to 25 feet from an abandoned well, if documentation is submitted that verifies the well was back-filled with a bentonite grout using a tremie pipe from the bottom of the borehole to the surface by a licensed well driller.

Use of Easements

Proposed sewage disposal areas may not be located in off-site easements to support subdivision of land except for community systems approved by this Department and MDE. Existing OSDS may be permitted to remain in a temporary off-site easement for planned public sewer areas on a case-by-case basis. The use of easements for an off-site sewage disposal area may be permitted for existing lots of record or existing dwellings on a case-by-case basis where it is demonstrated that there is no suitable area onsite and lot-line adjustment is not feasible.

OSDS Testing Requirements

Soil Treatment Zones

Minimum acceptable soil treatment zones must be in accordance with COBAR 01.03.01.04 B.

Percolation Testing

For unimproved property, at least three (3) test pits demonstrating suitable soil conditions shall be excavated at locations generally representative of the proposed sewage disposal areas. At least one (1) percolation test (water test) shall be required for each proposed sewage disposal area. Additional percolation tests may be required as determined by the Department based on soil variability and anticipated type of OSDS to be installed.

For unimproved properties established prior to March 3, 1972, at least two (2) soil tests demonstrating suitable soil conditions shall be excavated in an area representative of the proposed sewage disposal area. At least one (1) percolation test (water test) shall be required for each proposed sewage disposal area. Additional percolation tests may be required as determined by the Department based on soil variability and anticipated type of OSDS to be installed.

For an existing dwelling with an existing and adequately functioning OSDS system for which a sewage disposal area has not been established, at least one (1) test pit demonstrating suitable soil

conditions and one (1) percolation test (water test shall be excavated in an area representative of the proposed sewage reserve area.

Soil test pit excavations for conventional deep trench systems shall be 16' feet, unless bedrock or groundwater is encountered, or it is otherwise determined to be unnecessary by the Department. Soil test pit depths when evaluating a site for an at-grade system, sand mound systems, low pressure dosing systems or other shallow pressure dosed systems should be a minimum of 7 feet unless bedrock or groundwater is encountered.

OSDS Approval

As per COMAR 26.04.03.02 I, and COMAR 26.04.02.03B, upon completion of percolation testing and submission of a site plan that has been approved by all applicable Baltimore County agencies, Ground Water Management will issue a “perc approval letter” granting approval for the installation of an OSDS in the approved sewage disposal areas (SDAs) designated on the approved plan. Perc approval letters will generally be valid for 5 years provided there is no disturbance of the approved SDAs.

OSDS Design Requirements

General Requirements

Conventional absorption trenches must have a minimum 2-ft. sidewall into porous soil.

Initial installation of OSDS must be installed in that portion of the sewage reserve area with the highest elevation.

As per COBAR 01.03.01.05 A(5), OSDS and sewage disposal areas must maintain 50 feet from the design water surface elevation level (WSEL) for structural stormwater management devices. Where Environmental Site Design (ESD) is used for stormwater management, the following setback criteria shall be used for siting OSDS:

ESD Practice	Setback/Restriction from an OSDS or SRA
Permeable Pavement	25 ft.
Sheet Flow to Conservation Area	20 ft. and not immediately downgradient
Submerged Gravel Wetlands	25 ft. and not immediately downgradient
Landscape Infiltration	25 ft. and not immediately downgradient
Infiltration Berms	25 ft. from WSEL and not immediately downgradient
Dry Wells	25 ft. and not immediately downgradient
Micro-Bioretention Facilities	25 ft. and not immediately downgradient
Rain Gardens	25 ft. and not immediately downgradient
Swales	25 ft.
Enahance Filters	25 ft. and not immediately downgradient

All proposed development utilizing OSDS must do so by gravity flow sewer service whenever possible. Exceptions may be made on a case-by-case basis as approved by the Department.

As per Baltimore County Plumbing Code 16.6.1, septic tanks for single-family dwellings up to five bedrooms shall be at least 1,500 gallons. Single-family dwelling units having 3 bedrooms or greater must utilize 2 compartment septic tanks.

As per Baltimore County Plumbing Code 16.9.5, capped, accessible observation pipes shall be installed to the full depth of the stone at the end of all deep absorption trenches of 4-foot depth or greater.

Conventional sand mound systems to be utilized on property to be subdivided may not have linear loading rates in excess of 0.8 gal/ft/day.

Where enhanced sewage pretreatment units (a.k.a. BATs) are required for conventional systems the Owner/Operator must sign (and may be required to record in the Land Records of Baltimore County) an agreement to operate the approved system in accordance with the manufacturer's recommendations and to keep a continuous service contract with a qualified contractor to routinely inspect and maintain the system (See Appendix A-5). A copy of the service contract shall be submitted to the Department. The Owner/Operator shall notify the Department in writing upon changing to a different qualified contractor.

Use of OSDS Innovative and Alternative Technologies

Soils that have been deemed suitable to handle loading rates of 0.5 gal/ft.^{2}/day or greater will generally be approved for a conventional system. Soil loading rates between 0.25 and 0.5 gal/ft.^{2}/day will generally meet the criteria for an alternative system. Innovative technologies are systems with soil loading rates less than 0.5 gal/ft.^{2}/day. These soil loading rates assume that the effluent being discharged is domestic wastewater strength or better. Consequently, the Department will normally require sewage pre-treatment for alternative and innovative technologies.

As per COBAR 01.03.01.03 D, prior to approving a permit for installation of any Alterative or Innovative Technology (as designated by MDE), the property owner shall be required to sign and record an agreement in the Land Records of Baltimore County that underscores the specialized operation and maintenance required for the system and the owners responsibility to have a certified operator. See Appendix 6 for the Alternative OSDS Agreement and Appendix A-7 for the Innovative OSDS Agreement.

Sewage Ejector Pumps

As per COBAR 01.03.01.05 F, OSDS utilizing sewage ejector pumps or effluent pumps must have a high water alarm and a single pump pit sized for wastewater retention of up to 24-hours, or twin alternating pumps.

Backwash from Water Treatment Devices

As per COMAR 26.08.04.01, a state discharge permit is required for any wastewater regardless of volume unless is it authorized as an approved discharge through a permitted OSDS. This includes backwash from a water treatment device. In most cases, backwash can be directed to the OSDS

without impacting the hydraulic capacity of the OSDS. If the OSDS has a pre-treatment device (i.e., a BAT), the manufacturers recommend that backwash from softening systems be discharged after the BAT (i.e., after the pre-treatment unit but before the distribution box). Whole-house reverse osmosis (R/O) systems will significantly increase the wastewater load to the OSDS. Our office should be consulted prior to installation of any whole-house R/O device to verify whether the OSDS can handle the additional hydraulic loads anticipated. Additional trenches may be required to accommodate the wastewater from whole-house R/O systems.

Non-residential OSDS

Percolation Test Applications or building permits for non-residential uses must be accompanied by a **Water Usage Letter**. The Water Usage Letter should include the following information:

For Undeveloped properties

1. A description of the proposed facility operations, square footage, number of full-time and part-time employees.
2. An estimate of the proposed peak daily flow at the facility (not average daily flow). This estimate should be consistent with the document entitled "MDE Guidance on Wastewater Flows for Use in Designing Onsite Systems" or supported by actual water usage data from a similar facility for at least a 1 year period. It is preferred to have daily water meter readings, but if only average daily water usage data is available, the peak daily flow will be assumed to be double the highest average daily flow.
3. An estimate of the anticipated strength of the raw wastewater (i.e, BOD, TSS, FOG and Total Nitrogen levels). This information must be supported by actual sampling results from similar facilities or, if appropriate, numbers from the literature.

For properties where there is an existing OSDS

1. A description of the existing facility operations, square footage, number of full-time and part-time employees.
2. An evaluation of the existing OSDS from a licensed sewage disposal contractor, that includes the location, description and functionality of each septic system components (see Appendix A-8, Existing Private Well and OSDS Assessment)
3. An estimate of the original design flow for the existing system, and comparison with the actual daily water usage of the facility (preferably from water meter information). If water meter data is not available, an estimate of the peak daily water usage should be consistent with the document entitled "MDE Guidance on Wastewater Flows for Use in Designing Onsite Systems" or supported by actual water usage data from a similar facility for at least a 1 year period.
4. A description of the proposed facility operations, square footage, number of full-time and part-time employees.
5. An estimate of the proposed peak daily flow at the facility (not average daily flow). This estimate should be consistent with the document entitled "MDE Guidance on Wastewater Flows for Use in Designing Onsite Systems" or supported by actual water usage data from a

similar facility for at least a 1 year period. It is preferred to have daily water meter readings, but if only average daily water usage data is available, the peak daily flow will be assumed to be double the highest average daily flow.

6. An estimate of the anticipated strength of the raw wastewater (i.e., BOD, TSS, FOG and Total Nitrogen levels). This information must be supported by actual sampling results from similar facilities or, if appropriate, concentrations from the literature.

The Department may require that distribution boxes be installed accessible to final grade by use of manhole risers and lids.

The Department may require a water meter be installed so that that wastewater flows to the OSDS can be monitored.

When considering approval of peak daily flows between 1,500 and 5,000 gallons per day, the following will be required:

1. The proposed sewage pre-treatment units shall be certified by a professional engineer as being able to meet reduce the nitrogen by at least 50%.
2. The design plans shall provide the specifications on the pre-treatment units' compressors/blowers, control panels, pump, alarms, etc., in addition to other components of the OSDS design.
3. An operations and maintenance manual outlining the procedures necessary to optimize the engineered systems' performance shall be provide to the Department and the operator/owner of the system.
4. A method of monitoring sewage flows and sewage treatment performance (i.e., sampling) must be incorporated into the design.

Holding Tanks and Chemical Toilets

In accordance with COMAR 26.04.02.K, holding tanks are only to be used to resolve an existing onsite sewage disposal system failure where a community sewerage is not available and an onsite repair is not possible. Holding tanks may not be used to support new construction or for adding capacity to an existing usage. Appendix A-9 contains the residential holding tank agreement.

In accordance with COMAR 26.04.02 I, the use of chemical toilets may be used where water under pressure is not available. Chemical toilets may also be appropriate for temporary events but may not be used to support an on-going or regular usage.

OSDS Installation and Repair Requirements

A Baltimore County plumbing permit is required for all new OSDS installations and repairs. A plumbing reconstruction permit signed by this Department must also be obtained prior to performing any septic repairs. This work must be performed under the supervision of a sewage disposal contractor or master plumber licensed in Baltimore County. MDE certification is required for any contractor installing an at-grade and sand mound system. MDE and vendor certification is required for any contractor installing a BAT unit.

NOTE: Replacement of an existing conveyance line, repair to a clean-out or observation port, or addition of manhole risers to grade is not considered alteration of the system and does not require a plumbing permit.

New Construction

Installations of OSDS for new residential or commercial use must be performed in accordance with the approved building permit site plan and the OSDS design criteria that is specified by the Department. Any alteration to the location or design of the system must be approved by this Department prior to installation. The design information will be conveyed to the building permit applicant in a letter with a site plan that is issued after building permit approval.

OSDS installations must be inspected by Plumbing Inspection prior to covering the system. Inspections are scheduled directly with Plumbing Inspection. An electrical permit and inspection is also required for installation of sewage pre-treatment unit, and /or effluent pumps.

As of January 2013, OSDS for all new construction must include a sewage pre-treatment unit that is designated by MDE as the best available technology for nitrogen removal (BAT). "New construction" is defined in COBAR 01.03.01 (3) and under certain conditions includes permits for house replacements, change in use, and additions**. In general, if the Department finds that the existing OSDS is not sufficiently sized or functioning adequately to accommodate the proposed usage, a BAT will be required.**

Where BATs are required for new construction, the building permit will not be release until the property owner has submitted a signed contract with the distributor of an approved BAT unit and signed the BAT Maintenance Agreement.

OSDS Repairs

Prior to approval of a permit to repair an OSDS, the Department must be provided with the information necessary to design an appropriate repair. It is strongly advised that any contractor assisting a property owner with an OSDS repair, should first contact this office to determine what records may be available concerning the site.

If public sewerage is reasonably proximate to the property, the Department in coordination with the Department of Public Works may require that existing or proposed structures be connected to public sewage system.

At a minimum, the contractor must provide an accurate site plan with the following information:

- Address of the property, locations of on-site structures, and number of bedrooms (for residential usage);
- Locations of streams, and ponds within 100' of property lines or 150' of proposed septic repair location;
- Location of adjacent off site wells within 100 ft. of property line or 150' of proposed septic repair location. (It is the contractors' responsibility to contact neighbors to obtain this information.)

- Locations of existing septic system components and layout;
- Location of on-site well(s) and specify well construction (i.e., drilled well, well in a pit, or hand dug well) if known;
- Topography or indication as to degree and direction of slope; and
- Proposed septic system repair location and design.

Based on the nature of the proposed repair and the available information in the Department files, the following additional work may be required:

- A site inspection of the property by a County Environmental Health Specialist; and/or
- Soil percolation tests in the proposed septic repair area.

If soil percolation tests indicate that the site is not suitable for a conventional repair, the Department may require that the property owner contract with a qualified private consultant to design and submit to our office a proposed design for a non-conventional OSDS.

Contractors intending to install Innovative or Alternative OSDS must be both licensed by Baltimore County to install sewage disposal systems and be certified by MDE to install sand mound and/or at-grade sewage disposal systems.

Repairs in the CBCA

Existing septic systems located in Chesapeake Bay Critical Area (CBCA) must upgrade to a BAT for any repair that involves a replacement of a septic tank and/or the soil absorption system.

For the purposes of this policy, an OSDS will be considered in the CBCA if any part of the system or repair area is within the CBCA.

OSDS Abandonment

OSDS Abandonment must be performed in accordance with the Baltimore County Code 21-5. General guidelines are as follows:

1. All septic system components containing a measurable sewage level (i.e., septic tank, cesspool, seepage pits (dry wells)) must be pumped by a licensed sewage waste hauler.
2. Existing piping should be disconnected from the buildings.
3. Septic Tanks shall be removed or crushed and then filled with stone or clean fill. Cesspools and seepage pits must be filled with stone or clean fill. Fill should be compacted to minimize subsidence.
4. Absorption trenches/tile lines may be left in place.

See an OSDS Abandonment Form in Appendix A-10

WELL PROGRAM

The Well Program reviews and approves all new well permit applications (including geothermal wells) and ensures compliance with setback distances, well construction, hydrofracturing, well yield and water quality requirements.

Well Permit Application Procedures

Well permit applications must be submitted to the Department by a Maryland licensed master well driller in accordance with COMAR 26.04.04.04 and 26.04.04.05 along with an application fee.

Per COMAR 26.04.04.14, well drillers are required to notify the Department at least 1 business day prior to commencing drilling activities for both domestic well and closed loop geothermal wells.

Percolation tests and an approved site plan are required prior to issuance of a well permit for a new building lot.

Site plans are not required for well permits for replacement wells or wells to be used for farming or irrigation.

In accordance with COMAR 26.04.04.03, up to 20 geothermal wells may be permitted under the same permit for wells located on the same property for the same use. Driven wells used for ground water monitoring (also referred to as geoprobe, hydropunch, direct push, or penetrometer wells) may also be clustered on one permit, up to 20, assuming they are on the same property for the same use in the same general vicinity. A map showing well locations along with a summary of well depth and construction must be submitted to the Department along with an application and payment. Each driven well must be abandoned and sealed with a bentonite slurry or portland cement.

Well Siting Requirements

Minimum Setback Requirements

Water supply wells shall meet the minimum siting requirements set forth in COMAR 26.04.04.04 B(2) and COBAR 01.03.02.03

As per COBAR 01.03.02.03 A(3), wells must maintain 50 feet from the design water surface elevation level (WSEL) for non-infiltrative structural stormwater management devices, and 100 feet from the design WSEL for infiltrative structural stormwater management devices. Where Environmental Site Design (ESD) is used for stormwater management, the following setback criteria shall be used for siting wells:

ESD Practice	Setbacks for Confined / Unconfined Aquifers.
Permeable Pavement	50 ft. / 100 ft
Sheet Flow to Conservation Area	NA / 20 ft. and not immediately downgradient
Submerged Gravel Wetlands	50 ft. / 100 ft.
Landscape Infiltration	50 ft. / 100 ft

Infiltration Berms	25 ft. from WSEL
Dry Wells	50 ft. / 100 ft
Micro-Bioretention Facilities	50 ft. / 100 ft
Rain Gardens	30 ft. / 30 ft
Swales	30 ft. / 30 ft
Enhanced Filters	50 ft. / 100 ft

For the purposes of meeting the minimum 100-foot well setback requirement set forth in COMAR 26.04.04.05 B (2)(d), "sources of contamination" include septic systems, underground fuel storage tanks (and associated fuel lines and pumps), landfills, cemeteries, and known areas of ground water pollution.

Proposed wells should not be drilled in close proximity to a stream, surface water body or other environmentally sensitive area such that the drilling operations will negatively impact the resource. Sediment control measures or other special conditions may be required by the Department on a case-by-case basis.

Replacement Wells

Every effort must be made to site replacement wells for improved properties to meet the same minimum setback distances as for unimproved properties.

Drilling in Forest Conservation Easements (FCE) and/or Forest Buffers (FB) will not be considered until all reasonable alternative drilling options have been exhausted. Approval to access FCE and FB for this purpose must receive prior approval by the Environmental Impact and Review Section of this Department.

Replacement wells required by the Department to meet approval for subdivision of land shall be drilled prior to approval of a minor subdivision plan or record plat.

Variance Requests

Requests for a variance to a well setback requirement must be submitted by the owner in writing. Responses to such requests will be made by the Department after consideration of the underlying geology, location of neighboring wells, and the location of potential sources of ground water contamination.

Variances will generally not be given to support new construction.

Requests to maintain a private well for irrigation after connection to public water must be made by the owner in writing. Wells must be in good physical condition and pass a bacteriological analysis. In addition, the well supply may only be used for outdoor purposes and may not be connected with the public supply. The Department will send an approval/denial letter to the owner. COMAR 26.04.04.34 B, wells drilled prior to April 1, 1969 that are not in use must be abandoned and sealed (i.e., non-grouted wells).

Use of Easements

Proposed well areas may not be located in off-site easements to support subdivision of land except for community systems approved by this Department and MDE. Existing wells may be permitted to remain in a temporary off-site easement for planned public water areas on a case-by-case basis. The use of easements for an off-site well area may be permitted for existing lots of record or existing dwellings on a case-by-case basis where it is demonstrated that there is no suitable area onsite and lot-line adjustment is not feasible.

Master Water and Sewer Plan Designation and Zoning

Well permits will not be approved in area not designated as W-5, W-6 or W-7 in the Master Water and Sewerage Plan unless the applicant has variance from DPW and an Interim Agreement has been signed and recorded in Land Records. Also see COBAR 01.03.02.03 D. Appendix A-3 contains the Master Water and Sewerage Plan Variance application. Appendix A-4 contains the Interim Agreement form.

For properties with split zoning, both the well and sewage disposal areas to serve the proposed use must be located within the same zoning or within zoning with compatible uses, (i.e., residential vs. commercial).

Well Siting Approval

Prior to drilling, each well site or well area must be accurately staked in the field in accordance with the approved plan.

Unless a valid "Well Siting Agreement" is on file with the Department (see Appendix A-11), a representative of Ground Water Management must perform a field inspection prior to drilling to verify and approve each well site or well area.

Approval must be obtained from Ground Water Management prior to relocating a drilling attempt outside of the original approved well area or well location.

Locations for community and nontransient noncommunity water systems, as defined in COMAR 26.04.01.01 (19), must also be approved by Maryland Department of the Environment, Water Management Administration.

Well Yield Tests

Valid well yield tests shall be performed in accordance with COMAR 26.04.04.26 G and COBAR 01.01.02.04. See Appendix A-12 for sample of well yield test data sheet.

For the purposes of transferring property, well yields shall be considered valid for a period of three (3) years, in accordance with Baltimore County Code 34-2-102.

Well yield tests for existing wells may be required by the Department for building permits and change of use permits to verify that the water supply is adequate to support the proposed use.

Wells should also be evaluated against the well standard detailed specified in 26.04.04.26 J and K for storage.

Hydrofracturing

See COMAR 26.04.04.28. Appendix A-13 contains the MDE Water Well Fracturing Report

Geothermal Wells

Drilled wells to be used in a closed loop geothermal heat pump system must be permitted and constructed in accordance with COMAR 26.04.04.23 A(4) and COBAR 01.03.02.03 A(5). A Geothermal Well Report (see Appendix A-14) shall be submitted to the Department by the well driller along with the Well Completion Report.

Hydrogeologic Studies

As per Baltimore County Code 34-1 and 32-4-224, and COBAR 01.03.02.03H, Hydrogeologic Studies are required for all major subdivisions and non-residential developments. See Appendix A-15 for the General Requirements for Hydrogeologic Studies.

Disinfection Procedures for Wells

Following completion of well construction and installation of all plumbing including well pump, pressure tank and distribution lines and fixtures, drinking water wells must be disinfected according to COMAR 26.04.04.24 C and D. Due to the complications that may arise as a result of improper/ineffective disinfection of a well, it is recommended that this work be performed only by experienced licensed master well drillers, master plumbers, or pump installers.

Certificate of Potability

Water Quality Sampling

As per COMAR 26.04.04.30 A, a new water supply may not be put into service for human consumption until a Certificate of Potability (Interim or Full) has been issued by the Department.

At the request of the property owner, the Department will provide water quality sampling and analysis, free of charge, for all new wells seeking a Certificate of Potability. Analyses will be limited to bacteria, nitrates, sand and turbidity, unless otherwise determined by the Department. Alternately, the owner may elect to have the required water quality testing performed by a Maryland certified laboratory at his/her expense.

All compliance samples must be collected by a Maryland certified water sample collector. Initial samples should be collected prior to any water treatment devices and representative of the “raw” water quality.

Elected or required testing subsequent to issuance of a Certificate of Potability will be the responsibility of the property owner. The Department may perform additional testing, free of

charge, to investigate potential ground water contamination complaints or to complete a sanitary survey.

Complaints/concerns about contamination of ground water from pesticides should be referred to Maryland Department of Agriculture, Pesticide Regulation Section (410-841-5710).

Public Water Systems

For the purposes of water quality sampling, public water systems are those that meet the definition as defined in COMAR 26.04.01.01 (19). Generally speaking, public water systems include those water supplies categorized as either:

1. A community system which serves 15 residential house connections or a residential population of 25 or more people;
2. A nontransient noncommunity system which serves institutions or businesses with an employee population of 25 or more people.
3. A transient noncommunity system which serves institutions or businesses that serves food to the public or offers a public restroom to the public.

The Department will not release a Use and Occupancy Permit for a new construction, until it has been demonstrated that the water supply meets the requirements set forth in COMAR 26.04.04.30. For community and nontransient noncommunity systems, the certificate of potability must be issued by MDE prior to Use and Occupancy Permit approvals.

Domestic supply wells constructed in the Baltimore Gneiss, Setters Gneiss, and Slaughterhouse Gneiss Aquifers must also be in compliance with the maximum contaminant levels set forth for radioactive substances in COMAR 26.04.01.09 prior to putting the water supply into use.

Community water supplies and nontransient noncommunity water systems must receive approval from Maryland Department of the Environment prior to installing any water treatment devices and putting system into service.

Public Water Systems that Fail to Meet Water Quality Requirement

Public water supplies that fail to meet the water quality requirements set forth in COMAR 26.04.04.30 C must conform to COMAR 26.04.04.30 H, I and J, COMAR 26.04.01 and COBAR 01.03.02.05.

Bacteriological contamination of a water supply serving a food service facility must utilize an approved alternative water supply if the facility wishes to continue to operate while corrections are made to the water system.

Private Water Systems

Private water systems includes all systems not defined as a Public System in COMAR 26.04.01.01 (19).

Use and Occupancy Permits

Prior to the Department releasing a Use and Occupancy Permit for a new construction, the water supply to be used must meet the requirements set forth in COMAR 26.04.04.30 B and G, for an Interim Certificate of Potability.

All compliance samples must be collected by a Maryland certified water sample collector. Initial samples should be collected prior to any water treatment devices and representative of the "raw" water quality.

Domestic supply wells constructed in the Baltimore Gneiss, Setters Gneiss, and Slaughterhouse Gneiss Aquifers must also be in compliance with the maximum contaminant levels set forth for radioactive substances in COMAR 26.04.01.09 prior to putting the water supply into use.

Notification will be sent by mail to the building permit applicant indicating that follow-up water sampling should be conducted by a qualified private laboratory or scheduled with the Department within 6 months to obtain a Full Certificate of Potability.

Private Water Supplies that Fail to Meet Water Quality Requirements

Private water systems that fail to meet the water quality requirements set forth in COMAR 26.04.04.30 D must conform to COMAR 26.04.04.30 H, I, and J, and COBAR 01.03.02.05.

Permanent Deviations to the Certificate of Potability

Permission to install an ultraviolet disinfection device may be granted by the Department in accordance with COBAR 01.03.02.05 B and COMAR 26.04.04.30 J. Appendix A-16 contains variance request to install at UV disinfection device.

In accordance with COMAR 26.04.04.30 J (5), if a permanent deviation is granted by the Department, an attachment to the property deed shall be made that reflect the need for treatment prior to issuance of the certificate of potability (see Appendix A-17).

Transfer of Property

Transfer of properties served by individual water supply must be in accordance with Baltimore County Code 34-2, and wells must comply with the minimum well yield requirements set forth in COMAR 26.04.04.26A (i.e., the same standards required for obtaining a Use and Occupancy permit). Testing for chemical quality and well yield may be waived (see Appendix A-18, and A-19, and A-20 for well waiver letters). The required bacteriological testing may not be waived. If a well fails the initial bacteriological test, at least two consecutive satisfactory test results must be confirmed from water samples collected at least 24 hours apart without introduction of a disinfectant in between satisfactory samples as per the procedure described in COBAR 01.03.01.02.05

For transfer of property, the minimum well yield standard will be considered to be met for tandem wells if the total combined well yield is 1.0 gallons per minute after a 6-hour yield test.

For transfer of property chemical testing should include radionuclides if the well is completed in the Baltimore Gneiss, Setters Gneiss, and Slaughterhouse Gneiss Aquifers.

As per COMAR 26.04.04.33 G, prior to entering into a contract of sale or lease, property owners are required to disclose to the contract purchaser, or lease, if a well has been issued a permanent deviation to the certificate of potability.

Well Abandonment

Abandonment of a well must be performed by a licensed well driller, or under the direction of the Approving Authority in accordance with COMAR 26.04.04.34 E and F as well as COMAR 26.04.04.35 and COMAR 26.04.04.36. General guidelines are as follows:

Hand dug wells are to be filled with clean sand, or stone up to 5 feet below the surface, topped by a 2-foot seal of portland cement, and covered with 3 feet of soil.

Drilled wells are to be filled with clean sand or stone up to 20 feet from the bottom of casing, and then sealed with an approved grout (typically Portland cement) from the top of the fill material to the ground surface. Well casings should be terminated just below ground surface. A minimum of 40 feet of grout is required.

Alternately, the entire borehole may also be filled with an approved grout material.

DEVELOPMENT PLAN REVIEW

See Appendix A-21 for Concept Plan Review checklist for Ground Water Management issues.

SANITARY SURVEYS

A Sanitary Survey is an evaluation of the adequacy of existing water supplies and sewage disposal systems for potential human health and environmental considerations in a given geographic area.

Health Projects

Sanitary Surveys are typically performed by the Department at the request of the Department of Public Works (DPW) in areas of existing residential development that are being considered for public water and sewer extensions due to unsanitary or unhealthy living conditions.

Recommendations of whether to extend public water and/or sewer based on human health and/or environmental considerations are based on a comprehensive evaluation of all the properties surveyed for the most practical long-term solution. Consequently, a recommendation by the Department to extend public water and/or sewer does not necessarily require failures or problems from 100% of the surveyed area.

If the Department recommends that public water and/or sewer should be extended in accordance with Baltimore County Code 20-2-102 and the Department of Public Works concurs, the project is designated as a “Health Project” and given certain priorities and financial considerations as determined by the Department of Public Works.

Sanitary Survey Procedures

Initially, a file search is performed to assess historical problems in the area. The Baltimore County Web Soil Survey should also be reviewed for mapped soil types and water table conditions.

An on-site survey is conducted of each property that qualifies as an existing dwelling (see COBAR 01.03.01.02 B(2)) to determine the condition and adequacy of the private water and sewage disposal system. Soil evaluations and/or water samples may be conducted at the discretion of the Department.

Assessing Well Supplies

Springs, shallow augered wells and hand dug wells are not considered safe supplies due to the potential influence from surface waters (i.e., coliform bacteria contamination). Consequently, water samples are not typically collected from these supplies.

Drilled wells may exist in several states: casing above grade; casing buried below grade; or casing below grade in a pit or vault.

Indications of potential water supply problems include:

- Lack of well yield;
- Lack of well cap, or a loose well cap (not a sanitary seal);
- Lack of screen over vent hole;
- Presence of a “safety rope” through the casing;
- If in a pit or well house, presence of water marks above the well head that indicate periodic flooding;
- Potential sources of contamination located within 100 feet of the well and/or immediately upgradient;
- Presence of coliform bacteria and/or elevated levels of nitrates;
- Shared wells; and
- Small lot sizes that preclude drilling of a new well that meet all setback restrictions.

Assessing On-site Sewage Disposal Systems

- Obvious failures/inadequacies of OSDS include:
- Ponding of water on the surface in vicinity of the dry wells or trenches;
- Direct discharge pipes from septic tank to streams, ditches, or bulkheads;
- Laundry waste/kitchen waste surface discharges;
- Use of privies and cesspools; and
- Inadequate space for a septic system repair.

Evidence of periodic failures or signs that the sewage disposal system is hydraulically overloaded include:

- Abnormally lush vegetation growth over septic system;
- Abnormally wet/damp conditions over septic system;
- Sewage odor in vicinity of septic system;
- Abnormally high sewage levels in septic tank, seepage pit cleanouts and/or absorption trench observation pipes; and
- Reported need for frequent pumping of system.

Evidence that a sewage disposal system is discharging directly to ground water include:

- Elevation of the septic system area is within 5 feet of a nearby surface water elevation;
- Auger tests which indicate a water table within 5 feet of the surface; and
- Property is underlain by wet weather testing soils.

Dye tests may be conducted to confirm source(s) of observed or suspected septic system failures. If property owner(s) refuse to allow a dye test or further inspections, a determination will be based on topography, and available information on soil conditions and ground water elevations in the vicinity.

UNDERGROUND STORAGE TANKS

Removal shall be done in accordance with Baltimore County Code 33-7. General guidelines are as follows:

- A building permit to perform tank removal must be obtained by a Maryland certified tank technician or remover.
- For residential tanks less than 1,100 gallons, Ground Water Management must be notified at least 3 days prior to conducting tank removal work (410-887-2762) to arrange for an inspection.
- For all commercial tanks and residential tanks 1,100 gallons or greater, Maryland Department of the Environment must be notified at least 30 days prior to conducting tank removal work (410-537-3442). A copy of the MDE inspection report must be submitted to the Department subsequent to removal.
- All liquids must be removed from the tank and properly disposed of off-site.
- After liquids have been removed, the tank should be properly ventilated and monitored for explosive hazards prior to disconnecting piping or removing the tank.
- After the tank has been removed, the excavation should remain open and the tank scraped clean for inspection by the county or state representative.
- Upon removal of the UST, a minimum of (1) soil sample must be collected from the bottom of the excavation. Analysis shall include Total Petroleum Hydrocarbons Gasoline Range

Organics/Diesel Range Organics by EPA Method 8015 and Volatile Organic Compounds by EPA Method 8260. Additional tests may be required at the inspector's discretion.

- Evidence of a petroleum release must be reported to MDE within 2 hours. Contaminated soil and/or ground water must be properly disposed off-site

Requests for permission to abandon a tank in place must be accompanied by sufficient evidence that excavation and removal would compromise the integrity of on-site structures or be complicated by the presence of utilities or other hazards. A site inspection will be conducted by this office to verify site constraints. Prior to granting permission to abandon the UST in place, the tank must be exposed, opened and cleaned. An opening in the bottom of the tank must be made in order to collect a soil sample for TPH DRO/GRO and VOC analysis. A representative of this office must be present to witness this work. Once the soil analysis results have been received, permission may be granted to proceed with final closure. If the property is served by a private domestic water supply well, a VOC sample may be required as part of the review.

UST's may be abandoned by filling with non-organic inert materials such as concrete, flo-ash slurry or sand.

Each UST removal inspected by GWM will be documented in a Tank Closure Inspection Report (Appendix A-22).

SCAVENGER INSPECTIONS

As per COMAR 26.04.06.15C, the Department shall perform annual inspections of septage waste haulers. See Scavenger Inspection form in Appendix A-23. In lieu of performing an inspection, the Department may accept another jurisdictions' inspection form.

WASTE MANAGEMENT PROGRAM

The goal of the Waste Management Program is to ensure that the hazardous materials generated by Baltimore County residents are properly handled and disposed. The program also helps to ensure that the Baltimore County Eastern Sanitary Landfill (ESL) complies with COMAR 26.04.07 and the conditions of its operating permit which prohibits acceptance of friable asbestos or hazardous materials. Asbestos is regulated at the federal level through 40 CFR Part 61, Subpart M and also by state regulations, COMAR 26.11.21. Hazardous wastes are defined in Baltimore County Code 13-4-101(i) as wastes that are highly flammable, explosive, pathological or radioactive. The goal of the Waste Management Program is primarily accomplished by review of permits for interior alterations, razings, open burnings, solid waste collection vehicles as well as requests for special waste disposal at ESL. Waste Management also oversees the Household Hazardous Waste (HHW) Program which is operated in cooperation with the Department of Public Works, Bureau of Solid Waste Management.

Interior Alteration Permits

The primary objective in the review of interior alteration permits is to determine if there are asbestos-containing materials (ACM) (or other hazardous materials) on the subject property and, if so, to determine whether the ACM could become friable during the proposed alteration work. Interior alteration permits can be released without inspection if the applicant can provide documentation that:

1. The certified industrial hygienist has surveyed the subject building and determined there are no ACM or hazardous materials which could become friable during the proposed alteration work, or during landfill disposal of building debris generated by the proposed work; or
2. Previous inspection of the subject property by this office has determined that there are no ACM or hazardous materials which could become friable during the proposed alteration work, or during landfill disposal of the building debris generated by the proposed work; or
3. Documentation is provided by the applicant that ACM identified in a survey is in good condition and will not be disturbed during the proposed alteration work. If mastic is involved, the documentation may indicate disturbance provided that the mastic is not physically abraded, and the property is not likely to contain significant quantities of hazardous materials. The applicant must also indicate that no mercury thermostats are present in the work area, or if present, will not be disturbed during the proposed work.

If the conditions above cannot be satisfied, an inspection by a representative of GWM must be conducted. GWM will contact the applicant to arrange for the inspection and access to the property.

The permit can be released if the inspection reveals no suspect ACM which could become friable and there are no mercury thermostats or other hazardous materials which would be disturbed during the proposed work.

If inspection by this office reveals the presence of suspect ACM which could become friable, or hazardous materials are present, the applicant shall be notified that the permit will be held by this Department until such time as:

1. The applicant provides testing results which indicate that the suspect ACM does not contain asbestos. (Inspector will notify applicant of the number of samples and materials to be sampled); or
2. The applicant provides documentation that the suspect ACM will not be disturbed during proposed alteration work: or
3. The ACM is removed by state licensed abatement contractor and the applicant provides a copy of the asbestos abatement report, which includes final clearance air sample results, and disposal manifest: and
4. The hazardous materials are removed and properly disposed of and documentation is provided to this office

Razing Permits

All razing permits require an inspection by a representative of GWM to determine if there are any of the following on-site:

1. Suspect ACM which could become friable during razing or landfill disposal;
2. Hazardous materials;
3. Underground Fuel Storage Tanks;
4. Private well and/or septic systems;
5. Rodent problems.

Suspect ACM which could become friable must be either assumed to contain asbestos or be sampled and analyzed for asbestos and copies of results forwarded to this office for review.

All ACM which could become friable must be removed and disposed of as ACM by land filling and a copy of the landfill manifest or receipt provided to this office.

Friable ACMs must be removed by state licensed asbestos contractors;

Non-friable ACM can be removed by homeowners or other non-licensed parties, however, removal by licensed asbestos abatement contractor is always recommended and a listing of licensed contractors is provided upon request.

Hazardous materials, such as mercury thermostats, fluorescent light bulbs, drums of materials, containers of pesticides, swimming pool chemicals, etc. must be identified and be disposed of properly with a copy of the manifest provided to this office. Hazardous materials from residential properties can be taken to Baltimore County's Household Hazardous waste drop off centers for recycling or proper disposal.

Underground fuel storage tanks (USTs) must be removed or properly abandoned in place under separate county permit by an MDE licensed UST removal contractor. Above ground fuel storage tanks must be emptied and documentation provided to this office.

Private wells and septic systems must be properly abandoned, as described in EPS abandonment procedures and documentation provided to this office on forms provided by this office. Any requests to maintain wells or septic systems must be submitted to the Supervisor of the Well Permit Program or Soil Evaluation Program on forms provided by this office. Note: Requests to maintain hand dug wells or metal septic tanks will not be considered.

Any evidence of **rodent problems** (as determined by the inspector) must be corrected by a licensed pest control company before a razing permit can be released.

If a building has been razed before an inspection could be conducted, and before a permit has been issued, the permit will not be released until the property owner or legal representative has signed the post facto certification form.

Open Burning Permits

Baltimore County Fire Prevention Code (1:10.11.1.5) requires that a permit be obtained for any bonfire or other open burning. Open burning permits are issued by the Fire Marshall's Office after inspection by GWM for compliance with COMAR 26.11.07.03. These regulation require that our office verify that the proposed materials to be burned:

- Will not cause an hazardous condition, air pollution or nuisance;
- Do not include tires, roofing material or other materials that could produce dense smoke;
- Only includes materials generated on the premises on which it is to be burned;
- Are at least 500 yards from an occupied building or heavily traveled public road, or are generated as part of agricultural operations.

In general open burning permits are only issued to farms that wish to burn natural materials (i.e., brush, and tree limbs). Agricultural burning sites must be at least 50 feet from any structure, 200 feet from a woodland area, and burning piles may not exceed 10 ft. x 10 ft.

Open burnings are prohibited from June 1 thought August 31 of each year.

Solid Waste Collection Vehicle Permits

As per Baltimore County Code § 13-4-204, 13-4-205 and 13-4-402, all operators of vehicles used in solid waste collection are required to have annual truck inspections and be issued a permit by the Department of Permits, Approvals and Inspections (PAI) by January 1st of each year. Truck inspections are scheduled with the Waste Management Program following receipt of the permit application and fee by the PAI, Miscellaneous Permits Division.

Baltimore County Code 13-4-08 requires that any vehicle used for solid waste collection must be sufficiently watertight to prevent loss of liquid, and be sufficiently clean to minimize odors and insect and rodent breeding. Open topped vehicles must provide adequate cover for the waste being transported.

Requests for Special Waste Disposal

As defined in Baltimore County Code 13-4-101(z), "special waste" means any solid waste material approved for sanitary landfill disposal by the Approving Authority (Ground Water Management) that requires special handling procedures. Persons requesting permission to dispose of petroleum contaminated soils, non-friable ACM or other suspect materials in ESL must obtain approval from Ground Water Management prior to disposal at ESL. Analytical testing may be required.