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B A L T I M O R E C O U N T Y, M A R Y L A N D
DEPT. 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).

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I. 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.

A. Percolation Test Application Procedures (revised 3/5/07)

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).

1. **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 reserve areas, and USTs within 200 feet of the property line.

- Plan must show proposed dwelling sites with associated 10,000 sq. ft. sewage reserve areas (SRAs), proposed soil test sites (min. of 3 per SRA), and proposed well sites on the subject property.

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

- 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).

- 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 Address	Type of Info	Exists (Y/N)	Source			Unknown
			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					

2. Preliminary Assessment

Prior to obtaining approval to schedule the field testing, a preliminary assessment (Perc PA) must be conducted by the Ground Water Management and Environmental Impact Review Section. If the property is zoned RC-2, 4, 6, 7, 8, 20, or 50, the application is also reviewed by the Agricultural Land Preservation Section. If the property is zoned RC-5, Office of Planning must review the percolation test application. Applicants will be notified by mail if application is denied, approved, or if additional information is required.

3. Wet Weather Testing

Wet weather testing will be required 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.

4. Master Water and Sewer Plan Designation

See COBAR 01.03.03 H. Appendix A-3 contains the Master Water and Sewerage Plan Variance application. Appendix A-4 contains the Interim Agreement form.

B. OSDS Siting Requirements

1. Minimum Setback Distances

OSDS siting requirements must be in accordance with COMAR 26.04.02.04 J and COBAR 01.03.01.05.

Proposed septic systems 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 bentonite by a licensed well driller.

2. Use of Easements

The use of easements to provide for off-site sewage disposal systems and/or off-site sewage reserve area will be permitted for existing recorded lots or existing dwellings only. They may not be used for proposed subdivision of land except for community systems approved by this Department and the Maryland Department of the Environment. Temporary easements for planned public sewer areas may be permitted by the Department on a case-by-case basis.

C. OSDS Testing Requirements

1. Soil Treatment Zones

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

2. Percolation Tests

At least one (1) percolation test (water test) shall be required for each proposed sewage reserve area. Additional percolation tests may be required as determined by the Department based on soil variability and anticipated type of OSDS to be installed.

3. Soil Test Pit Excavations

For unimproved property, at least three (3) test pits demonstrating suitable soil conditions shall be excavated at locations generally representative of the proposed sewage reserve areas.

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 reserve area.

For an existing dwelling with an existing and adequately functioning OSDS system for which a sewage reserve area has not been established, at least one (1) test pit demonstrating suitable soil conditions 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 testing depths when attempting sand mound disposal systems, low pressure dosing systems or other shallow pressure dosed systems will be a minimum of 7 feet.

D. OSDS Design Requirements

1. General Requirements

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 reserve 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
Permeable Pavements	25 feet and not immediately downgradient
Sheetflow to Conservation Area	20 feet and not immediately downgradient
Submerged Gravel Wetlands	25 feet and not immediately downgradient
Landscape Infiltration	25 feet and not immediately downgradient
Infiltration Berms	25 feet from design WSEL and not immediately downgradient
Dry Wells	25 feet and not immediately downgradient
Micro-Bioretention	25 feet and not immediately downgradient
Rain Gardens	25 feet and not immediately downgradient
Swales	25 feet
Enhance Filters	25 feet 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 1500 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 8 gal/ft/day.

Where enhanced sewage pretreatment units and/or low pressure dosing systems are required for conventional systems the Owner/Operator must sign and 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. 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 (Appendix A-5).

2. Use of OSDS Innovative and Alternative Technologies

a) Use of OSDS pretreatment may be required for high strength wastes as determined by the Department

b) Where OSDS pretreatment is required, pretreatment methods may include aerobic tanks, re-circulating sand filters or similar devices

which serve to reduce TSS, BOD, FOG, and nitrates to target levels to be established by the Department on a case-by-case basis. The specific pretreatment product and/or design must be approved by the Department.

c) A signed agreement must be in place prior to the use of any Alternative OSDS (see Appendix A-6) or Innovative OSDS (see Appendix A-7).

d) When considering approval of high strength flows in excess of 2,000 gallons per day, the following will be required of the owner/developer:

(1) The peak flow and raw sewage strength data that will be used to design the pretreatment unit shall be provided to the Department.

(2) Pretreatment units shall be certified by a professional engineer as being able to meet the discharge quality parameters noted below.

(3) Proposed pretreatment units shall be designed to treat the waste such that the effluent reduces the concentrations of TSS, BOD, and FOG and nitrogen to target levels to be established by the Department on a case-by-case basis.

(4) Detailed plans and specifications on the pretreatment units' compressors/blowers, control panels, alarms, etc, shall be provided to the Department.

(5) Provisions for odor control shall be specified in the proposal.

e) As per COBAR 01.03.01.03 D, the owner/operator shall be required to sign and record in the Land Records of Baltimore County an agreement to operate the approved OSDS 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. 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 (Appendix A-5).

3. Sewage Ejector Pumps

See COBAR 01.03.01.05 H

4. Non-residential OSDS

Percolation Test Applications must be accompanied by a Water Usage Letter (see Appendix A-8) detailing the proposed water consumption.

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

The Department requires observation pipes installed to grade at the end of each absorption trench.

5. Holding Tanks

See COMAR 26.04.02.03. Appendix A-9 contains the residential holding tank agreement.

E. OSDS Approval and Limitations

See COBAR 01.03.01.03 F

F. OSDS Installation and Repair Requirements

A Baltimore County plumbing permit is required for all OSDS installations and repairs. A plumbing reconstruction permit signed by this Department must also be obtained prior to any septic repairs. This work must be performed under the supervision of a septic disposal contractor or master plumber licensed in Baltimore County. Where new effluent pumps are being installed or repaired, an electrical permit is also required.

1. New Installations

Installations of OSDS for new residences must be performed in accordance with the approved building permit site plan and the OSDS design criteria that is specified by the Department. This information will be conveyed to the building permit applicant in a letter that is issued after building permit approval.

An inspection of OSDS installations must be performed by Plumbing Inspection prior to covering the system. Where new effluent pumps are being installed, an electrical permit is also required.

Contractors intending to install Innovative or Alternative OSDS must be both licensed by Baltimore County to install sewage disposal systems and

be certified by Maryland Department of the Environment (MDE) to install sand mound waste disposal systems.

2. OSDS Repairs

a) Prior to approval of a permit to install a sewage disposal system repair, a licensed sewage disposal contractor (or qualified consultant) may be required to submit an accurate site plan to the Department with the following information:

(1) Address of the property, locations of on site structures and number of bedrooms;

(2) Locations of streams, and ponds within 100' of property lines or 150' of proposed septic repair location;

(3) Locations of existing septic system components and layout;

(4) Location of on-site well(s) and specify well construction (i.e., drilled well, well in a pit, or hand dug well) if known;

(5) Proposed septic system repair location and design;

(6) Topography or indication as to degree and direction of slope; and

(7) 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.).

NOTE: The contractor may wish to contact this office by telephone for consultation regarding the proposal or to schedule a site inspection with one of the County Sanitarians.

b) Based on this Department's review of the proposed septic repair, and available information in the Department files, the following additional work may be required:

(1) A site inspection of the property by a County Sanitarian; and/or,

(2) Soil percolation tests in the proposed septic repair area.

3. New Installation and Repairs in the CBCA (added May 8, 2009)

New construction and replacement structures to be served by OSDS in the Chesapeake Bay Critical Area (CBCA) are required to incorporate

nitrogen removal technology, as approved by MDE, into the design of the septic system.

For existing structures served by on-site sewage disposal systems in the CBCA:

a) Septic system repairs involving replacement of a septic tank and/or the field system are also required to incorporate nitrogen removal technology, as approved by MDE, into the design of the septic system. Replacement or repair of sewer piping only is excluded from this requirement.

b) Where the Department finds that proposed construction or alteration of an existing structure will potentially result in an increase in sewage flows, the Department may require the existing septic system to be upgraded to incorporate nitrogen removal technology, as approved by MDE.

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

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 in lieu of the installing nitrogen removal technology.

4. Requests to Install OSDS Repair of a Lesser Design

A property owner wishing to install a septic system repair with a lesser design than recommended by this Department must request a variance in writing. The request must explain the rationale for the variance in design and present assurances by a qualified professional that it will be environmentally sound. Approval of a variance is subject to Department review and the property owner signing an agreement (see Appendix A-10) that recognizes:

a) The final approved septic system design is less than the design standards recommended by this Department and may reduce the systems' potential operational life; and

b) In the event that the subject property is transferred (or sold), it is the responsibility of the property owner to disclose the agreement to the purchaser, in writing, at least five days prior to settlement.

5. OSDS Repairs for Problem Soils

If it is determined that the site and/or soil conditions preclude a septic repair that will meet the minimum acceptable design criteria, the Department will provide the property owner a recommendation letter outlining other methods that may mitigate the problem. It should be made clear that the options presented in the recommendation letter are suggested remedies to alleviate the problem and not to be construed as permanent solutions, or a guarantee of future functioning of the prescribed system (See Appendix A-11).

G. OSDS Abandonment

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

- 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.

- Existing piping should be disconnected from the buildings.

- 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.

- Absorption trenches/tile lines may be left in place.

II. Well Program

The Well Program reviews and approves all new well permit applications and ensures compliance with setback distances, well construction, well yield and water quality requirements.

A. 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.

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.

Driven wells used for ground water monitoring (also referred to as geoprobe, hydropunch, direct push, or penetrometer wells) are required to be permitted under COMAR 26.04.04. However, up to 10 driven wells per site may be clustered on 1 permit. 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 well must be abandoned and sealed with a bentonite slurry or portland cement.

B. Well Siting Requirements

1. Minimum Setback Requirements

Water supply wells shall meet the minimum siting requirements set forth in COMAR 26.04.04.05 (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 Pavements	50 feet / 100 feet
Sheetflow to Conservation Area	NA / 20 feet and not immediately downgradient
Submerged Gravel Wetlands	50 feet / 100 feet
Landscape Infiltration	50 feet / 100 feet
Infiltration Berms	25 feet from design WSEL
Dry Wells	50 feet / 100 feet
Micro-Bioretention	50 feet / 100 feet

Rain Gardens	30 feet
Swales	30 feet
Enhance Filters	50 feet / 100 feet

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

2. 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.

3. 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 careful 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. The well 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 letter to the owner.

4. Use of Easements

The use of easements to provide off-site access to an individual well supply will be considered for existing lots of record and existing dwellings only. Easements may not be used to support proposed subdivision of land except for community systems as approved by this Department and Maryland Department of Environment. Temporary easements for planned public water areas may be permitted by the Department on a case-by-case basis.

C. 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-12), a representative of Ground Water Management must perform a field inspection prior to drilling to verify and approve each well site or well area (see Appendix A-13).

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.

D. Well Yield Tests

Valid well yield tests shall be performed in accordance with COMAR 26.04.04.01 Q and COBAR 01.01.02.04. See Appendix A-14 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.

E. Hydrofracturing

See COBAR 01.03.02.06. Appendix A-15 contains the Water Well Fracturing Report

F. Geothermal Wells (added April 27, 2007)

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. and COBAR 01.03.02.03A(4). A Geothermal Well Report shall be submitted to the Department by the well driller along with the Well Completion Report (See Appendix A-16).

The borehole of a closed-loop geothermal well shall be grouted from the bottom of the borehole to the ground surface.

The upper terminal of a closed-loop geothermal well may terminate below grade if:

- The well location is marked by a metal plate so that it can be found by a metal detector; or
- The manifold and horizontal lines are marked with detection tape.

Piping material, jointing, pressure testing and anti-freeze solutions for a closed-loop geothermal well shall conform to the standards of COMAR 09.15.05.

G. Hydrogeologic Studies

See Baltimore County Code 34-1 and 32-4-224, and COBAR 01.03.02.03I. Appendix A-17 contains the General Requirements for Hydrogeologic Studies.

H. 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 26.04.04.07 N (as detailed below). 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:

1. Calcium hypochlorite, designated as 65% available chlorine by weight, should be used for well disinfection. A dosage of 1 tablespoon of calcium hypochlorite for every 10 ft. depth of standing water in the well should be applied. Calcium hypochlorite is available commercially under several trade names, such as, H.T.H., Perchloron, or Pitt-Chlor. Any chlorine disinfecting chemicals designated as "stabilized" shall not be used.

2. The appropriate amount of chlorine shall be applied directly into the well. A hose shall be connected to the discharge side of the pressure tank and the water re-circulated back into the well for 30 to 60 minutes. The inside of the casing shall be washed down with this chlorinated water.

3. After circulation of the chlorine is complete, the vented well cap shall be replaced. All taps shall be turned on until a chlorine odor is detected at each location, and then turned off for 12-24 hours.

4. After the desired contact time, the well shall be purged through an outside spigot. This water shall not be discharged into the septic system or discharged at the surface towards the OSDS (i.e., the sewage drain fields).

5. Purging the chlorine should be performed in accordance with the well yield (i.e., it may take several days or weeks to completely purge the well of chlorine residual).
6. The water supply shall be tested for potability only after all residual chlorine has been removed.

I. Certificate of Potability

1. Water Quality Sampling

As per COMAR 26.04.04.09 A, a new water supply may not be put into service for human consumption until a Certificate of Potability 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.

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).

2. Public Water Systems

As defined in COMAR 26.04.01.01 (19)

a) Use and Occupancy Permits

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 26.04.04.09 B.

Domestic supply wells constructed in the Baltimore Gneiss and Setters Gneiss Aquifer 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.

Transient noncommunity water systems must submit to the Department a signed contract with a qualified laboratory to perform the required sampling in accordance with COMAR 26.04.01.06.

b) Failure to Meet Water Quality Requirements

Public water supplies that fail to meet the water quality requirements set forth in COMAR 26.04.04.09 B must conform to COMAR 26.04.04.09 D, 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.

3. Private Water Systems

Includes all systems not defined as a Public System in COMAR 26.04.01.01 (19)

a) 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 26.04.04.09 B for an Interim Certificate of Potability.

Domestic supply wells constructed in the Baltimore Gneiss Aquifer 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.

b) Failure to Meet Water Quality Requirements

Private water systems that fail to meet the water quality requirements set forth in COMAR 26.04.04.09 B must conform to COMAR 26.04.04.09 D and COBAR 01.03.02.05.

4. Installation of Ultraviolet Disinfection Devices

See COBAR 01.03.02.05 B. Appendix A-18 contains variance request to install at UV disinfection device

J. Transfer of Property

Transfer of properties served by individual water supply must be in accordance with COMAR 26.04.04.09 E, and Baltimore County Code 34-

2. Testing for chemical quality and well yield may be waived (see Appendix A-19, and A-20, and A-21 for well waiver letters). The required bacteriological testing may not be waived.

K. 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 26.04.04.11. 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 3-foot seal of portland cement, and covered with 2 feet of soil.

- Drilled wells are to be filled with clean sand or stone up to the bottom of casing, and then sealed with a portland cement or bentonite slurry from the bottom of the casing to the ground surface. Well casings should be terminated just below ground surface. A minimum of 20 feet of portland cement or bentonite slurry is required.

III. Development Plan Review

See Appendix A-22 for Concept Plan Review checklist for well and septic issues.

IV. 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.

A. 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.

B. 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 (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 (see Appendix A-23 for field data sheet).

1. Assessing Well Supplies

Springs, 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 conditions; 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 water supply;
- Lack of well cap, or loose well cap;
- 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.

2. Assessing On-site Sewage Disposal Systems

Obvious failures/inadequacies 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.

V. 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 (see Appendix A-24 and A-25 for sample notification letter and inspection report, respectively).

- 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 (410-631-3442). 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.

- 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 may be required by this Department to determine if a UST can be abandoned in place.

VI. Scavenger Inspections (added July 17, 2007)

As per COMAR 26.04.06.15C, the Department shall perform annual inspections of septage waste haulers. See Appendix A-26.