

Calvert County

2016 Annual Drinking Water Quality Report

The Calvert County Water and Sewerage Division is pleased to present the 2016 Drinking Water Quality Report for the County operated water systems. The Safe Drinking Water Act (SDWA) requires that water utilities issue an annual Customer Confidence Report (CCR) to customers in addition to other notices that may be required by law. This report details where the water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The Calvert County Water and Sewerage Division is committed to providing its customers with drinking water that meets or exceeds all state and federal drinking water standards. Informed consumers are our best allies in maintaining safe drinking water, so we encourage you to take the time and read this report to learn more about the quality of your drinking water.



East Prince Frederick Elevated Storage Tank

Water Source

The County operates multiple public water systems as illustrated on the map inside this report. The Calvert County water systems are supplied by wells in the Aquia, Piney Point, Nanjemoy, Magothy and Low Patapsco Aquifers. The water is chlorinated to ensure bacteriological purity and in some systems, phosphate is used to sequester nuisance metals such as iron. After treatment, the finished water enters the distribution system. It is delivered to approximately 5,300 customers throughout Calvert County. The water distribution systems are comprised of over 100 miles of water mains, 750 fire hydrants, 14 elevated storage tanks, 7 hydropneumatic tanks and various components that make it possible for the finished water to be delivered to County's residential and commercial customers.

National Primary Drinking Water Regulation Compliance

This report was prepared using CCR Builder and technical assistance provided by the American Water Works Association. We are happy to answer any questions about the Calvert County Water and Sewerage Division and the water quality in the Calvert County public water systems. Call the Water & Sewer Division office (410) 535-1600 ext. 2329, Monday through Friday, 8 a.m. – 4 p.m.

Definitions of Terms Used in the Water Quality Data Table

The table shows the results of our water quality analysis. Every regulated contaminant detected in the water, even in most minute traces, is listed here. The table contains the name of each substance, the highest level allowed by regulation (Maximum Contaminant Level, or MCL), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. Definitions of MCL and Maximum Contaminant Level Goal (MCLG) are important.

Key to Table

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

N/A: Not applicable

ND: Not detectable at testing limit

pCi/L= picocuries per liter (a measure of radioactivity)

ppm = parts per million, or milligrams per liter (mg/L)

ppb = parts per billion, or micrograms per liter (ug/L)

MRDLG = Maximum Residual Disinfectant Level Goal

MRDL = Maximum Residual Disinfectant Level

Maximum Contaminant Level Goal or MCLG: The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Action Level Goal or ALG: The level of a contaminant allowed in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

Action Level or AL: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Important Information from the EPA

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Calvert County Water and Sewerage is responsible for providing high-quality drinking water, but cannot control the variety of materials used in home plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using the water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

Disinfectant by-products

Trihalomethanes: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Haloacetic Acids: Some people who drink water containing haloacetic acids in excess of the MCL, over many years may have an increased risk of getting cancer.

Arsenic

While your drinking water meets U.S. Environmental Protection Agency's (EPA's) standards for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Radium

Radium is a naturally occurring substance which, if exposed to acidic conditions (low pH), can leach into groundwater. The EPA has set maximum contaminant levels for radium that are based on lifetime exposure. Some people, who drink water containing combined radium in excess of the MCL over many years, may have an increased risk of getting cancer. However, the risk is very small. The susceptibility of the water supply to Radon, a naturally occurring element, will depend upon the final MCL that is adopted for this contaminant.

Required Additional Health Information

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline by calling 1-800-426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also, come from gas stations, urban stormwater runoff and septic systems.
- (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than is the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be

particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

Source Water Assessment

The Maryland Department of the Environment's Water Supply Program (WSP) has conducted Source Water Assessments for water systems in Calvert County. The required components of this report as described in Maryland's Source Water Assessment Program (SWAP) are: 1) delineation of an area that contributes water to the source; 2) identification of potential sources of contamination; and 3) determination of the susceptibility of the water supply to contamination.

Cavalier Country

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Cavalier Country water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Chesapeake Heights

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Chesapeake Heights water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Cross Point

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Cross Point Subdivision water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Dares Beach

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Dares Beach water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Hunting Hills

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Hunting Hills water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Kenwood Beach

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Kenwood Beach water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Lakewood

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Lakewood water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Marley Run

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Marley Run water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Paris Oaks

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Paris Oaks water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Prince Frederick

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Prince Frederick water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Shores of Calvert

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Shores of Calvert water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Solomons

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Solomons water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

St. Leonard

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the St. Leonard water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Summit/Highlands

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Summit/Highlands water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers.

Tapestry North

No source water assessment information available at this time.

Tara

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Tara Subdivision water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Walnut Creek

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the Walnut Creek water supply is not susceptible to contaminants originating at the land

surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

White Sands

The susceptibility analysis is based on a review of the existing water quality data for each water system, the presence of potential sources of contamination in the individual assessment areas, well integrity, and aquifer characteristics. It was determined that the White Sands water supply is not susceptible to contaminants originating at the land surface due to the protected nature of confined aquifers. However, it was determined that arsenic, a naturally occurring contaminant, does pose a risk to the water supply.

Notes for the Water Quality Data Table

*Compliance with the MCL for arsenic is based on a running average of four quarterly samples for the following water systems: Dares Beach, Marley Run, Prince Frederick, Hunting Hills, and Tara. The arsenic values that are located in the “highest level” column for these systems are actually the highest running annual average (RAA) arsenic values.

The lead and copper results are reported from tests taken within customers’ dwellings. There is no lead or copper in the raw water. Compliance with the MCL for lead and copper is based on the 90th percentile value of all analysis results.

Although we ran tests for many constituents, only the listed substances were found. They are all below the required MCL.

Testing for most parameters is not required on an annual basis.

Drinking Water Quality Data 2016

PARAMETERS	UNITS	MAXIMUM CONTAMINANT LEVELS		CAVALIER COUNTRY		CHESAPEAKE HEIGHTS		CROSS POINT		DARES BEACH		HUNTING HILLS		KENWOOD BEACH		LIKELY SOURCE OF CONTAMINATION
		MCL	MCLG	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	
Radioactive Contaminants																
Gross alpha	pCi/L	15	0	6	6-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits.
Beta/photon emitters	pCi/L	50	0	8.4	8.4-8.4	9.6	9.6-9.6	6.9	6.9-6.9	10.1	10.1-10.1	11.2	11.2-11.2	10.1	10.1-10.1	Decay of natural and man-made deposits.
Combined radium 226/228	pCi/L	5	0	1.7	1.7-1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits.
Inorganic Contaminants																
Arsenic	ppb	10	0	ND	ND	4	4-4	2.4	0-2.4	8.5	7.9-8.5	5.9	3-5.9	4	4-4	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	ppm	2	2	ND	ND	0.047	0.047-0.047	0.056	0.056	ND	ND	ND	ND	ND	ND	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	ppm	4	4	0.23	0.23-0.23	0.22	0.22-0.22	0.2	0.2-0.2	0.23	0.23-0.23	0.22	0.22-0.22	0.28	0.28-0.28	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Lead	ppb	AL=15	0	ND	ND	2	2	ND	ND	ND	ND	5	5	1	1	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	ppm	AL=1.3	1.3	0.22	0.22	0.063	0.063	0.49	0.49	0.055	0.055	0.23	0.23	0.084	0.084	Erosion of natural products; Leaching from wood preservatives; corrosion of household plumbing systems.
Disinfection-By-Products																
Chlorine	ppm	4	4	1.5	1.1-1.5	1.2	0.9-1.2	1	0.7-1	0.9	0.8-0.9	1.3	0.9-1.3	1.4	1.2-1.4	Water additive used to control microbes
Total Trihalomethanes	ppb	80	no goal	5.8	5.8-5.8	18.4	18.4-18.4	0.9	0.9-0.9	4.8	3.96-4.8	2.09	2.09-2.09	4.7	4.7-4.7	By-product of drinking water disinfection.
Total Haloacetic Acids	ppb	60	no goal	4	4-4	4.9	4.9-4.9	2	2-2	1.7	1.7-1.7	ND	ND	1.1	1.1-1.1	By-product of drinking water disinfection.
Volatile Organic Compounds																
Ethylbenzene	ppb	700	700	ND	ND	ND	ND	ND	ND	0.5	0.5-0.5	ND	ND	ND	ND	Discharge from petroleum refineries.
Total Xylenes	ppm	10	10	ND	ND	ND	ND	ND	ND	0.0019	0.0019	ND	ND	ND	ND	Discharge from petroleum and chemical factories.

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PARAMETERS	UNITS	MAXIMUM CONTAMINANT LEVELS		LAKEWOOD		MARLEY RUN		PARIS OAKS		PRINCE FREDERICK		SHORES OF CALVERT		SOLOMONS		LIKELY SOURCE OF CONTAMINATION
		MCL	MCLG	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	
Radioactive Contaminants																
Gross alpha	pCi/L	15	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits.
Beta/photon emitters	pCi/L	50	0	7.5	7.5-7.5	11.2	11.2-11.2	6.7	6.7-6.7	13.6	13-13.6	4.9	4.9-4.9	5.7	5.7-5.7	Decay of natural and man-made deposits.
Combined radium 226/228	pCi/L	5	0	ND	ND	ND	ND	ND	ND	ND	ND	2.3	2.3-2.3	ND	ND	Erosion of natural deposits.
Inorganic Contaminants																
Arsenic	ppb	10	0	ND	ND	9.9	7.8-9.9	ND	ND	8.3	5-8.3	ND	ND	4	4-4	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	ppm	2	2	ND	ND	ND	ND	0.064	0.064-0.064	0.022	0.22-0.22	0.053	0.053-0.053	ND	ND	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	ppm	4	4	ND	ND	0.17	0.17-0.17	0.21	0.21-0.21	0.23	0.23-0.23	0.23	0.23-0.23	0.33	0.32-0.33	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Lead	ppb	AL=15	0	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	ppm	AL=1.3	1.3	0.18	0.18	0.34	0.34	0.20	0.20	0.18	0.18	0.11	0.11	0.041	0.041	Erosion of natural products; Leaching from wood preservatives; corrosion of household plumbing systems.
Disinfection-By-Products																
Chlorine	ppm	4	4	1.3	0.8-1.3	0.5	0.1-0.5	1.1	0.7-1.1	0.6	0.6-0.6	1.2	0.9-1.2	1	0.8-1	Water additive used to control microbes
Total Trihalomethanes	ppb	80	no goal	3.09	3.09-3.09	1.8	1.8-1.8	1.82	1.82-1.82	13.5	0.78-13.5	8.5	8.5-8.5	9.5	3.95-9.5	By-product of drinking water disinfection.
Total Haloacetic Acids	ppb	60	no goal	ND	ND	1.1	1.1-1.1	3	3-3	3.2	3.2-3.2	7	7-7	1.5	1.5-1.5	By-product of drinking water disinfection.
Volatile Organic Compounds																
Ethylbenzene	ppb	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries.
Total Xylenes	ppm	10	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum and chemical factories.

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PARAMETERS	UNITS	MAXIMUM CONTAMINANT LEVELS		ST. LEONARD		SUMMIT/ HIGHLANDS		TAPESTRY NORTH		TARA		WALNUT CREEK		WHITE SANDS		LIKELY SOURCE OF CONTAMINATION
		MCL	MCLG	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	highest level detected	range of levels detected	
Radioactive Contaminants																
Gross alpha	pCi/L	15	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits.
Beta/photon emitters	pCi/L	50	0	15.9	15.9-15.9	5.1	5.1-5.1	9.4	9.4-9.4	10.8	10.8-10.8	7.5	7.5-7.5	14.9	14.9-14.9	Decay of natural and man-made deposits.
Combined radium 226/228	pCi/L	5	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits.
Inorganic Contaminants																
Arsenic	ppb	10	0	5	5-5	2	2-2	4.5	4.5-4.5	8.5	5.1-8.5	6.4	6.4-6.4	4	4-4	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.051	0.051-0.051	0.096	.096-.096	0.1	0.1	ND	ND	ND	ND	ND	ND	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	ppm	4	4	0.26	0.26-0.26	0.22	0.22-0.22	0.22	0.22	ND	ND	ND	ND	0.24	0.24-0.24	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Lead	ppb	AL=15	0	ND	ND	ND	ND	2	2	ND	ND	ND	ND	2	2	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	ppm	AL=1.3	1.3	0.061	0.061	0.39	0.39	0.064	0.064	0.39	0.39	0.16	0.16	0.084	0.084	Erosion of natural products; Leaching from wood preservatives; corrosion of household plumbing systems.
Disinfection-By-Products																
Chlorine	ppm	4	4	1.1	0.9-1.1	2.7	1.5-2.7	1	0.7-1	0.6	0.5-0.6	1	0.7-1	1	0.7-1	Water additive used to control microbes.
Total Trihalomethanes	ppb	80	no goal	7.2	7.2-7.2	9	9.4-9.4	0.8	0.8-0.8	2.1	2.1-2.1	0.9	0.9-0.9	6.6	6.6-6.6	By-product of drinking water disinfection.
Total Haloacetic Acids	ppb	60	no goal	1.7	1.7-1.7	12.9	12.9-12.9	ND	ND	2	2-2	2	2-2	1.5	1.5-1.5	By-product of drinking water disinfection.
Volatile Organic Compounds																
Ethylbenzene	ppb	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries.
Total Xylenes	ppm	10	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum and chemical factories.

Public Water Systems in Calvert County, MD

