

**THE BOURNE WATER  
DISTRICT'S WATER QUALITY  
REPORT FOR 2016  
(PWS ID # 4036000 )**

Dear Customer,

We are pleased to present a summary of the quality of the drinking water provided to you during 2016. We conducted over 850 tests for more than 84 contaminants. This report is a snapshot of last year's water quality. The Bourne Water District is committed to providing you with a reliable water supply. **We believe informed customers are our best allies.** You are welcome to attend the Board of Water Commissioners meetings held at the Bourne Water District's office, at 211 Barlow's Landing Road in Pocasset. The board's meetings are scheduled for the second Tuesday of the month at 8:30 AM, and the Annual District meeting is scheduled on the fourth Monday in April.

**WATER SOURCES AND TREATMENT**

The Bourne Water District is supplied by 10 different sources, 7 of our own gravel packed well sites and 3 gravel packed well sites from the Upper Cape Regional Water Supply Cooperative. Four of our well sites are in the Monument Beach area of the Town Forest. The other two wells are in the Cataumet area of the Town of Bourne. A new well, on Joint Base Cape Cod, was put on line in May of 2014. The Bourne Water District treats all supplies with lime slurry for corrosion control. The lime slurry is used to raise the pH of the water. This makes the water less aggressive to the copper pipe and lead joints in your homes to prevent exposure to lead and copper.

**WHAT DOES THE FOLLOWING TABLE MEAN?**

**Action Level (AL)** The concentration of a contaminant which if exceeded triggers treatment or other requirements.

**Maximum Contaminant Level (MCL)** The highest level of a contaminant that is allowed in the drinking water. The MCL is set as close to the MCLG as feasible using the best available treatment technology.

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

## KEY TO TABLE

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MFL = million fibers per liter

Mrem/year = millirems per year (a measure of radiation absorbed by the body)

NTU = Nephelometric Turbidity Units

pci/l = picocuries per liter (a measurement of radioactivity)

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

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

ppt = parts per trillion, or nanograms per liter

ppq = parts per quadrillion, or picograms per liter

TT = Treatment Technique

<b>DISTRIBUTION SYSTEM WATER QUALITY</b> This report summarizes only those items detected during Sampling-not all contaminants that are monitored								
Microbial Results	Highest # positive in a month		MCL	MCLG	Violation	Possible Source of Contamination		
Total Coliform Bacteria**	1		0	0	No	Naturally present in the environment		
Fecal Coliform or E. Coli	0		*	0	No	Human and Animal Fecal Waste		
*Compliance with the Fecal Coliform/E.Coli MCL is determined upon additional repeat testing								
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments.								
During the past year, we were required to conduct one Level 1 assessments. One Level 1 Assessments were completed. In addition, we were required to take 2 downstream samples and a repeat sample these 3 samples came back coliform absent and we put the tanks back on line.								
Lead and Copper	Dates collected	90th Percentile	Action Level	MCGL	# of sites sampled	# Sites above Action Level	Violation	Possible Source of Contamination
Lead (ppb)	10/01/2016 thru 12/31/2016	0.004	15	0	60	1	No	Corrosion of household plumbing systems: Erosion of natural deposits
Copper (ppm)	10/01/2016 thru 12/31/2016	0.934	1.3	1.3	60	4	No	Corrosion of household plumbing systems: Erosion of natural deposits
TESTING FOR 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 .Bourne Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When you water has been sitting for several hours, you can minimize the potential for lead exposure by flushing you tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information about lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <a href="http://www.epa.gov/safewater/lead">http://www.epa.gov/safewater/lead</a> .								

SUMMARY OF FINISHED WATER CHARACTERISTICS						
Regulated Contaminants	Date(s) collected	Highest Detect Value	Range Detected	MCL	MCGL	Violation
Inorganic Contaminants:						
Barium (ppm)	11/2/2016	0.016	0.016	2	2	No
Sodium(ppm)**	1/13/2015	37**	22-37	-	20	Road Salting
Nitrate * (ppm)	11/2/2016	0.51	0.05 - 0.51	10	10	No
Perchlorate ** (ppb)	7/19/2016	0.18	0 - 0.18	2	-	No
*Nitrate	Nitrate in drinking water at levels at levels above 10ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advise from your health care provider.					
**Perchlorate (Various Chemical Abstract Service Registry Numbers (CASRN)for different chemical species	Perchlorate interferes with the normal function of the thyroid gland and thus has the potential to affect growth and development, causing brain damage and other adverse effects, particularly in fetuses and infants. Pregnant women, the fetus, infants and children up to the age of 12, and people with hypothyroid condition are particularly susceptible to perchlorate toxicity. "J"values are required when the results are above the MDL(0.012) and below the MRL(0.05)					
**Sodium is a naturally-occurring element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases , including congestive heart failure and hypertension. The guideline of 20mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local Board of Health or the						
Organic Contaminants						
Tetrachloroethylene(PCE)(ppb)	2016	1.68	ND - 1.68	5	-	No
CIS-1,2-Dichloroethylene (ppb)	2016	2.77	ND - 2.77	70	NA	No
Secondary Contaminants						
Secondary Contaminants	Date(s) collected	Highest Detect Value	Range Detected	SMCL	OSRG	Possible Source of Contamination
Magnesium (ppm)	11/2/2016	2.7	2.7	-	-	Natural Mineral and Organic Matter
Chloride (ppm)	11/2/2016	33	33	250	NA	Natural Mineral, Road Salt
Calcium (ppm)	11/2/2016	3.5	3.5	-	-	Natural Mineral and Organic Matter
Aluminum (ppm)	11/2/2016	1.99	1.99	0.2	NA	Natural Mineral and Organic Matter
Iron (ppb)	11/2/2016	3.03	3.03	300	NA	Erosion of Natural Deposits and oxidation of iron components
Manganese (ppb)*	11/2/2016	0.067	0.067	50	NA	Erosion of Natural Deposits
Potassium (ppm)	11/2/2016	1.5	1.5	-	-	Natural Mineral and Organic Matter
Sulfate (ppm)	11/2/2016	5.6	5.6	250	250	Natural Sources
Zinc (ppm)	11/2/2016	0.006	0.006	5	NA	Erosion of Natural Deposits, and industrial discharge
*EPA has established a lifetime health advisory (HA) for Manganese at 300ppb and an acute at 1000ppb						
Radionuclides						
Radionuclides	Date(s) collected	Highest Detect Value	Range Detected	MMCL	Violation	Possible Source of Contamination
Gross Alpha (pCi/l)	2015	-0.28	-0.28	15	NO	Erosion of Natural Deposits
Radium 226 (pCi/l)	2015	0.04	0.04	5	NO	Erosion of Natural Deposits
Radium 228 (pCi/l)	2015	2.25	2.25	5	NO	Erosion of Natural Deposits

UCMR3 EPA unregulated contaminants	Date(s) collected	Highest Detect Value	Range Detected	MMCL	OSRG/ppb	Possible Source of Contamination
1,4 Dioxane (ppb)	2014	0.21	ND - .21	0.09	0.3	paper, cosmetics, shampoos and coolant
Chlorate	2014	53	ND - 53	20	ND	Natural occurring element
Dichloromethane	2014	2.77	ND - 2.77	30	ND	Natural occurring element
Chromium (ug/L)	2014	0.41	0.30 - 0.41	0.237	ND	Prevalent natural element
Strontium (ug/L)	2014	32	21 - 32	46.375	ND	Natural occurring element
Vanadium (ug/L)	2014	0.20	ND - 0.20	0.21	ND	Natural occurring element
Chromium VI (ug/L)	2014	0.29	ND-0.29	0.13	ND	Industries that process or use chromium or chromium compounds
Hexavalent Chromium	2014	0.51	.13 - .51	0.03	ND	Natural occurring element

**Third Unregulated Contaminant Rule (UCMR3)** IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER - Availability of Monitoring Data for Unregulated Contaminants for Bourne Water District. As required by US Environmental Protection Agency( EPA), our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a public health protection standard. As our customers you have a right to know that this data is available. If you are interested in examining the results, please contact Robert Prophett at (508)563-2294 or stop in 211 Barlows Landing Rd. Pocasset Ma. 02559. This notice is made available to you from the Bourne Water District. State Water System ID#4036000

The tables above includes water quality results from both the Bourne Water District and the Upper Cape Regional Water Cooperative.

## NATIONAL PRIMARY DRINKING WATER REGULATION COMPLIANCE

The Total Coliform rule requires water systems to meet a stricter limit for Coliform bacteria. Coliform bacteria are harmless, but the presence in water can be an indication of disease-causing bacteria. When Coliform bacteria is found, special follow up tests are done to determine if harmful bacteria are present in the water supply. Over 450 Coliform samples were taken throughout the Bourne Water District in the year 2016.

In August of 2016 Bourne Water District collected 2 samples from South Sagamore that came back coliform positive but Ecoli negative. The next day Bourne Water District identified the problem corrected and re sampled which the samples came back coliform absent and have continued to be absent.

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. The Bourne Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in 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 2 minutes before using water for drinking or cooking. If you are concerned about lead in your 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 Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Sodium; ORSG = 20 Sodium sensitive individuals, such as those experiencing hypertension, kidney failure or congestive heart failure, should be aware of the levels of sodium in their drinking water where exposures are carefully being controlled.

Massachusetts Office of Research and Standard Guidelines (ORSG): This is the concentration of a chemical in drinking water, at or below which, adverse health effects are likely to occur after chronic (lifetime) exposure, with a margin of safety. If exceeded, it serves as an indicator of the potential need for further action.

The Bourne Water District sampled the new well #8 for Synthetic Organic Compounds (SOC) in 2016. All tested SOC Regulated Contaminants had returns of no detect (no contaminants present).

In addition to the contaminants we test for, we are mandated to test for hundreds of additional substances and microscopic organisms to make certain our water is safe and of high quality. If you are interested in a more detailed report, contact Robert Prophett at 508-563-2294.

#### **REQUIRED ADDITIONAL HEALTH INFORMATION:**

To insure that tap water is safe to drink, Department of Environmental Protection (DEP) and Environmental Protection Agency (EPA) prescribes limits on the amounts of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap and bottled) 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 the sources 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, storm water runoff and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organics which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff and septic systems.

- (E) Radioactive contaminants, which can be naturally occurring or be the results 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 the general population. Immuno-compromised 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 and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infections by Cryptosporidium are available from the Safe Drinking Water Hotline (1-800-426-4791).

### **SOURCE WATER ASSESSMENT**

The Bourne Water District had a source water assessment performed by the MA. Department of Environmental Protection in 2002. The Source Water Assessment and Protection (SWAP) program, established under the Federal Safe Drinking Water Act requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources.
- Assess the susceptibility of drinking water sources to contamination from these land uses.
- Publicize the results to provide support for improved protection.

A susceptibility ranking of high was assigned to the Bourne Water District using the information collected during the assessment by the DEP. The high ranking was due to the potential contamination from land uses such as auto repair shops, truck terminal, furniture refinishing, auto salvage operation, an industrial park and activities in the recharge area (Zone II's) of some of the wells.

The complete SWAP report is available at the Bourne Water District's office. For more information contact Robert Prophett at 508-563-2294.

### **CROSS CONNECTION**

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn, and you hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of a fire hydrant being used or water main break) when the hose is connected to the fertilizer sprayer, the fertilizer may be

sucked back into the drinking water pipes through your hose. Using an anti-siphon backflow-prevention device on your sprayer or hose bib can prevent this problem. The Bourne Water District recommends using devices with an anti-siphon feature or equipping hose bibs with hose bib vacuum breakers to prevent against back flow. For additional information on cross connections and on the status of your water system's cross connection program, please contact Robert Prophett at 508-563-2294

### **UPPER CAPE REGIONAL WATER SUPPLY COOPERATIVE (PWS #4261024)**

The Upper Cape Regional Water Supply consists of three groundwater supply wells located on the Massachusetts Military Reservation. A Board of Managers representing the four member public water supply systems manages the Cooperative. The member public water supply systems include Bourne Water District, Sandwich Water District, Mashpee Water District and the Town of Falmouth. The Cooperative also has capacity to supply water to the Joint Base Cape Cod public water system, and the Barnstable County Jail.

Wells #1, #2, #3 are located in a forested area of the northeastern portion of the Joint Base Cape Cod (JBCC). The JBCC has adopted a Groundwater Protection Plan to prohibit inappropriate activities in the Zone II areas of community public water supply wells. In addition, the creation of the Environmental Management Commission provides oversight over activities on the northern portion of the JBCC. For information regarding the Groundwater Protection Plan call Elizabeth Kirkpatrick at (508) 968-6487. For information regarding the Environmental Management Commission call Len Pinaud at (508) 946-2871. For questions regarding SWAP or other information about Upper Cape Regional Water Supply CCR contact Don Rugg at (508) 888-7262.