

2002 Water Quality Report

Dighton Water District

PWS ID # 4076000

Your drinking water sources

The Dighton Water District's customers are supplied by 5 groundwater wells on Cedar & Walker St.

The Dighton Water District has an Emergency tie in with the Taunton Water Department. The District also has an interconnection with the Somerset Water Department. The Connection with the Somerset Water Department has not been used since 1982.

The Taunton tie-in on Somerset Avenue is used during Emergency situations, with permission from the Taunton Water Department.

The Board of Commissioners: Monthly meetings are held on the second Tuesday of every month. The Dighton Water District has its Annual Meeting on the fourth Thursday in May. **The Board of Commissioners would like to remind you to send back any & all Census that you receive.**

NOTICE TO CUSTOMERS: The Dighton Water District would like to thank its customers for conserving water during the drought.

Nondiscrimination Clause: This is an Equal Opportunity Program. Discrimination is prohibited by Federal Law. Complaints of Discrimination may be filed with the Secretary of Agriculture, Washington, D.C. 20250.

If you have any questions regarding this report please contact the Superintendent @ 508-822-5461.

In order to ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

"All 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 **EPA'S Safe Drinking Water Hotline @ (1-800-426-4791).**"

Treatment Plant

In the next few years the District will undergo some drastic changes. A new 1.5 million gallon per day treatment plant is in the design stages at this time. The treatment plant will be designed to remove the iron, manganese, & organic color. The District is under an administrative consent order from the Department of Environmental Protection to have the plant running by the spring of 2005. This plant will be a welcome addition to the District and is long overdue because of water quality issues we have been faced with over the years. I hope each & every customer of the District realizes the importance of the plant to provide a safe, clean, potable drinking water to all of the customers of the District. I am sure most customers are aware of the yellow rusty water, by the number of complaints that have been received at the Office during the course of a day. The voters of the District will be asked to attend a

special meeting to vote on money needed to build the plant. The Water District will also be seeking grant monies through Rural Development & SRF State Revolving fund low interest money from the State to help with the project costs.

Sources of drinking water (both tap water & 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 in some cases, radioactive material. It can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants -such as viruses and bacteria may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants -such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

Pesticides and herbicides - may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses.

Organic chemical contaminants -include synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants -can be naturally occurring or be the result of oil and gas production and mining activities.

Asbestos- Water systems that contain (AC) pipe are vulnerable to asbestos contamination due to the presence of asbestos – cement pipe and must sample for this contaminant dependent on the size of the system population, or the number of miles of (AC) pipe within the system

Immune - compromised persons:

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and prevention (CDC) guidelines on lowering the risk of infection by Cryptosporidium and other microbial contaminants are available from the **Safe Drinking Water Hotline: 1-800-426-4791**.

Important Definitions

Maximum Contaminant Level (MCL) – the highest level of a contaminant that is allowed in drinking water.

Maximum Contaminant Level Goal (MCLG) – the level of a contaminant in drinking water below which there is no known or expected risk to health.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

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

90th percentile - used for calibrating the allowable limit set forth by the US.EPA as a guideline for the

Lead and Copper sampling results.

Variations and Exemptions – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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TABLE KEY

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

equivalent to one penny in \$10,000 dollars

ppb: parts per billion, or micrograms per liter,

equivalent to one penny in \$10,000,000 dollars

ppt: parts per trillion, or nanograms per liter

equivalent to one penny in \$10,000,000,000,000 dollars

pCi/l: picocuries per liter (a measure of radioactivity)

SOC Waivers: This system has a monitoring waiver for Synthetic Organic Compounds. The Massachusetts Department of Environmental Protection (DEP) reduced the monitoring requirements for SOC Compounds to less than once per year because the Dighton Water District sources are not at risk of contamination. The last sample collected was on 9/12/94 and was found to be free from the presence of this contaminant. Sampling will resume the 2nd quarter & 4th quarter of 2003.

IOC Waivers: The Dighton Water District has a waiver for Inorganic Compounds due to no detects found in previous monitoring. The last sample was collected on 8/21/98, and was free from the presence of this contaminant. Sampling will resume the 2nd quarter of 2003.

VOC Samples: The Dighton Water District tested the wells for these contaminants on 2/25/2002. The results had no detects for the 56 different Volatile organic compounds.

“Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted”.

“Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air-containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 Pico curies per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline, 1-800SOS.RADON.”

Health affects for Lead and Nitrates

Nitrate: Nitrate in drinking water at levels above 10 ppm 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 for advice from your health care provider.

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at 800-426-4791.

Informational Section

Lead: Lead samples were taken at ten designated sampling sites in 2002. Out of 44 samples, 9 samples were above the action level. The results for the year ranged from .001- .034 mg/L. The 90th percentile results for the last quarter of 2002 were below the action level for lead at .014 mg/l. The District has taken steps to improve the lead action levels for the system. A study was done at the corrosion facilities to optimize the existing chemical dosages using an RTW model.

Copper: Samples were taken at ten designated sampling sites in 2002. Two samples out of 44 samples were above the Action Level for copper. The results ranged from .02-1.9mg/l. for 2002. Due to the RTW study copper levels found in the 2002 samples decreased from 4.65 mg/l in 2001 to 1.90mg/l. The 90th percentile results for the last quarter of 2002 were below the action level at 1.29 mg/l.

Asbestos: The District has approximately 3 – 4 thousand feet of (AC cement asbestos) pipelines. This portion of the system has been tested for asbestos particles and was found to be free of asbestos in November of 1995. Because (AC) pipe is within the District we are required to sample for this contaminant according to the DEP sampling schedule. The next test for asbestos will be during the second quarter of 2004.

Sodium: Information on Sodium is being provided for the elderly population, and anyone within the District that has to monitor their daily intake of Sodium. The sodium levels at the 5 wells range from 5.60 mg/L up to 18.8 mg/L.

Iron: The Iron levels in the 5 district wells ranged from .03 – 5.89 mg/L. High Iron can cause red rusty staining in white fixtures, and also in laundry when washing clothes.

Manganese: Manganese levels within the Districts 5 wells ranged from .024 mg/L up to .261 mg/L. High concentrations of manganese can cause Black discolored water within a system.

TTHMs: (Total 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 system, and may have an increased risk of getting cancer.

The Dighton Water District has exceeded the MCL for THMs for 2002. The District has decreased the dosage of chlorine entering the system at the Corrosion buildings to try to maintain THM levels below the MCL. According to the results for the 1st quarter of 2003 the THM levels have dropped below the mcl, which has proven that the actions taken to lower THM levels has worked. The elevated iron concentration & high amounts of organic color in the water make it difficult to maintain a balance in sustaining chlorine residuals and maintaining THM levels below the MCL. The District received an ACO Administrative Consent Order to install a treatment plant in order to correct the current Water Quality issues, including iron, manganese removal, and the removal of organic color.

(7 lines available here for info)

Treatment Techniques

Disinfection with Chlorine: All Reservoirs and some ground water sources contain numerous microorganisms, some of which can cause people to get sick. It is necessary to disinfect the water to eliminate disease-carrying organisms. Disinfection does not sterilize the water, but it does destroy harmful organisms. Sterilization kills all microorganisms, even though most are not harmful, and is too costly to use on a routine basis. The Dighton Water District uses sodium hypochlorite as its primary disinfection.

Corrosion Control through ph Addition: Many drinking water sources in New England are naturally corrosive (i.e. they have a ph less than 7.0). The water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. It is beneficial to add approved chemicals that will adjust the water to a neutral or slightly alkaline, which is non-corrosive. The Dighton Water District adds sodium hydroxide to the water. Testing throughout the water system has shown this treatment has been effective in reducing lead & copper concentrations. All chemicals used in the industry are approved for water treatment by the following organizations: the American National Standards Institute (ANSI) accredits the National Sanitation Foundation (known as NSF International), and UL. Chemicals also have to meet performance standards established by the American Water Works Association.

Some outside Watering tips

New England has a high precipitation rate, so turf grasses here don't have to be watered to survive. Lawns may turn brown and dormant, but will turn green rapidly when moisture in the soil is replaced.

Remember, the more you water your lawn, the faster it grows & the more you will have to mow it.

Conserve resources by not watering unless the grass really needs it. Let Mother Nature water your Lawn!

If you choose to water, 1 inch of water is adequate to wet the soil to a depth of 4-6". Place a can under the sprinkler to measure when an inch has been applied. Water deeply & less frequently to encourage deep root growth. Light watering encourages shallow roots, which lead to disease & stress injury.

The best time to water is in the morning; less water is lost through evaporation. Avoid watering during midday and try not to water in the evenings: a lawn remains damp during the night, which promotes disease.

Visit the Dighton Water District Website @ <http://www.dightonwaterdistrict.com>

DROUGHT 2002 UPDATE

As many of you know the summer of 2002 was a dry one. Water levels were extremely low in the District wells including levels in area reservoirs & ponds. Many of the smaller water bodies including some streams dried up completely. The District enforced an outside watering ban beginning on April 9th 2002, which ran through the middle of November. Since then the groundwater has had a chance to recharge to sustainable levels. If the early spring & summer of 2003 lack ample precipitation, Water Suppliers may be forced to place outdoor watering bans early again. Water is a precious resource that must not be taken for granted. Everyone should practice water conservation measures not only in the dry season but year round. A "safe clean potable water supply" should be the number one priority to all the customers of the District. Increased chemical use along with increased pumping rates & the costs associated with the treatment plant account for the high costs of treating drinking water these days.

WATER AWARENESS PROGRAMS

Water awareness programs take place at the Dighton Elementary School thanks to the cooperation of Sandra Curtis, Karen Rose, Jeffrey White, staff, & teachers of Pre -K thru 4th grade. In 2001 Jeffrey White received the EPA Environmental Educator award. In 2002 Sandra Curtis received the EPA Educator award. You can obtain handouts regarding water conservation, & ways to protect the water supply at the Dighton Water District Office.

BE WATER WISE, DON'T WASTE IT!

Residents and customers within the District are urged to conserve water. All new homeowners are advised to hold off on installing irrigation systems. Permits must be approved prior to installing any new irrigation. Lawn irrigations are the biggest consumers of water during the hot dry weather in the summer months. During the summer the average daily production of the District wells increases from 485,000 gallons per day up to 995,000 gallons per day. This increase in production is due to the increase in lawn sprinkler use. Residents must be aware that a safe clean potable water supply is a precious resource.

CLEAN WATER IS UP TO YOU!!

Where does my water come from?

Your drinking water comes from 5 gravel packed groundwater wells. Groundwater is the water that flows through the spaces between soil particles and through fractures in rock. It comes from rain & melting snow that percolates through the ground.

Why should I be concerned?

Even though some pollutants (such as bacteria, viruses, and phosphorus) can be reduced by passing through soil under certain conditions, groundwater can be easily contaminated by chemicals & oils.

Tips to help protect the water supply

Some Do's & Don'ts on how I can protect my drinking water?

Chemicals

Always use non-toxic and less toxic alternatives to household cleaners, oil based paints & insecticides.

Don't buy more hazardous chemicals than you need.

Always follow package directions on pesticides, fertilizers, and other household chemicals.

Don't over-use household chemicals. More is not better. **Don't** use pesticides or herbicides near wells, and minimize the use of fertilizers around wells.

Always take leftover chemicals to hazardous waste collection centers.

Don't dispose of hazardous chemicals by pouring them down household drains, storm drains, or onto the ground.

Underground Storage Tanks

Check heating oil tanks for leaks. Remove any deteriorating tanks. Replace tanks with above ground

tanks that include a secondary containment area with a cover.

Don't have tanks removed by contractors who are not familiar with State guidelines for underground tank removal, and never locate new fuel storage tanks in the recharge area of a well.

Septic systems

Take care of your septic system. Keep records of your septic system maintenance. Inspect the tank every year. Have your tank pumped every 2-3 years. And avoid damage to your leach field and distribution lines by keeping heavy objects out of the area of the field.

Don't overload your septic with solids by using a garbage grinder (unless the system was designed for a grinder). Never pour grease or cooking oils down the drain, it will clog the soil and system. Don't pour chemicals, including bleach down the toilet or sinks. Never use septic cleaners or additives containing acids or chemical solvents such as trichloroethylene (TCE) **contact the office for information on wellhead protection issues @ 508-822-5461**

For additional information on ways to protect the water supply you can contact Ma. DEP/DWP @ 617-292-5770.

Wellhead protection areas

The primary protection area around a public water supply (PWS) is known as the Zone 1. The Zone 1 is the 400 ft radius around a well or well field, which must be owned or controlled by the water supplier using conservation restrictions.

The area of an aquifer that contributes water to a well under the most severe pumping and recharge conditions is known as the Zone II. For public water supply wells that lack a DEP approved Zone II, DEP applies an interim Wellhead Protection Area (IWPA). This is the area within a 1/2 mile radius for sources whose approved pumping rate is 100,000 gallons/day (gpd) or greater. For smaller sources, the IWPA radius is proportional to the wells approved daily volume.

Security measures

Many changes have taken place since the tragedy that occurred on September 11th 2001. Security measures have been taken by many Public Water Supplies to protect the valuable drinking water resources that we have taken for granted for so many years. Additional measures have been taken to ensure the Dighton Water Districts wells & tanks are protected.

Contact the Dighton Police @ 508-669-6711 or the Water District @ 508-822-5461 if you notice any suspicious activities in or around the areas of the wells & water tanks.

A WORD IN PARTING

I'd like to thank all the Employees that work at the Water District for doing an outstanding job.

Treasurer: Carol Stevens

Foreman: Dorian Jefferson

Tina Bragga

Robert Thibeault

Kevin Carpenter

Visit the website for updates & information regarding your water. @ <http://www.dightonwaterdistrict.com>

Water Quality Results 2002

Contaminant	MCL	MCLG	Range of Detections in samples taken	Highest Level Detected	Major Sources in Drinking Water	Health Effects if above the MCL (denotes a Violation)
<u>Radionuclides</u>	15	0				
<u>Gross Alpha</u>			1.8 (+ - 2.0) pCi/L	1.8(+ - 2.0) pCi/L	erosion of natural deposits	(no violation)
<u>Inorganic compounds</u>						(no violation)
<u>Copper (ppm)</u>	AL 1.3	1.3	.02-1.90ppm 90th percentile result for the year 2002 1.27 ppm	2 out of 44 samples were above the AL. highest 1.9ppm	corrosion of plumbing systems, erosion of natural deposits.	(no violation)
<u>Lead (ppb)</u>	AL 15	0	1-34 ppb 90th percentile result for the year 2002 26ppb	9 samples out of 44 were above the AL. highest 34ppb	corrosion of plumbing systems, erosion of natural deposits.	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
<u>flouride (ppm)</u>	4	4	<.10-.10ppm	.10ppm	erosion of natural deposits	(no violation)
<u>cyanide (ppb)</u>	200	200	<20ppb-20ppb	20ppb	discharge from metal, plastic,& fertilizer factories.	(no violation)
<u>Nitrate (pp)</u>	10	10	.17ppm-1.87ppm	1.87ppm	runoff from fertilizer,septic sytems, &natural deposits	(no violation)
<u>Nitrite (ppm)</u>	1	1	<0.05 ppm	<0.05 ppm	runoff from fertilizer,septic sytems, &natural deposits	(no violation)
<u>VOC 's Total Trihalomethanes (ppb)</u>	80	n/a	range of detected levels 4.2-193ppb	highest annual average 89.29ppb	by product of drinking water chlorination	Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems. They may have a greater risk of getting cancer. (violation)