Annual Water Quality Report

Water testing performed in 2013

Proudly Presented By:
Long Beach Water Department
1800 E. Wardlow Road
Long Beach, California 90807

Leader in Water Conservation & Environmental Stewardship
PWS ID#: 1910065

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Chi tiết này thật quan trọng. Xin nhờ người dịch cho quý vị.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

របាយការណ៍នេះមានពត៌មានសំខាន់អំពីទឹកបរិភោគ ។ សូមបកប្រែ ឬពិគ្រោះជាមួយអ្នកដែលមើលយល់ របាយការណ៍នេះ ។

此份有關你的食水報告，內有重要資料和訊息，請找他人為你翻譯及解釋清楚。

Message from the General Manager

Dear Customer:

On behalf of the Long Beach Water Department, I am pleased to present you with the 2014 annual water quality report.

Historically, drinking water suppliers were required to mail their customers a paper copy of the supplier's annual water quality report. Recent changes in federal and state regulations have eliminated this requirement, allowing water supply agencies to deliver their reports via several alternative methods, including electronically.

For the first time, the Long Beach Water Department will make its water quality report available primarily in an electronic format, which will save ratepayer money by avoiding the costs normally involved with printing and mailing out nearly 100,000 copies of the report.

While the method we use to provide you with important information about your drinking water may be changing, much else will remain the same, including the commitment of our employees to provide Long Beach residents with safe, reliable drinking water.

Over the past year, our dedicated team of water quality experts performed thousands of tests on over 100 drinking water contaminants to ensure that your water meets or exceeds all state and federal drinking water quality regulations. Our testing performed in 2013 determined that the Long Beach drinking water supply has once again complied with all state and federal drinking water standards.

I hope you will take some time to read through this year's report. Should you have any additional questions about the report or any other water quality issues in the City of Long Beach, please feel free to contact our water quality laboratory at (562) 570-2474.

Sincerely,

Kevin L. Wattier, General Manager

Long Beach Water Department

Since 1911, the Long Beach Water Department (LBWD) has been diligent in delivering to your homes and businesses a reliable, affordable and high-quality supply of drinking water. Currently, LBWD serves a total population of 467,646 through over 900 miles of pipelines. Your drinking water is tested on a routine basis for microbiological as well as chemical quality and last year's testing shows that your tap water met all EPA and State drinking water health standards.

During 2013, a staff of skilled water scientists, engineers, and technicians performed over 60,000 tests to analyze for more than 100 drinking water contaminants. This is done to ensure that the water quality meets or exceeds all Federal and state standards. LBWD remains vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education, while continuing to serve the needs of all of its water users. Thank you for allowing us to continue providing you and your family with quality drinking water.

We encourage you to share your thoughts with us on the information contained within this report. Should you ever have any questions or concerns, we are always available to assist you.

The Long Beach Board of Water Commissioners meets on the first and third Thursday of each month at 9:00 am at our Administration Building located at 1800 E. Wardlow Road, Long Beach, CA 90807. The public is encouraged to participate in these meetings. For further information, please call (562) 570-2300.

Board of Water Commissioners:
Mr. Harry M. Saltzgaver, President
Mr. Frank Martinez, Vice President
Mr. John D. S. Allen, Secretary
Mr. Robert E. Shannon, Member
Mr. Arthur M. Levine, Member

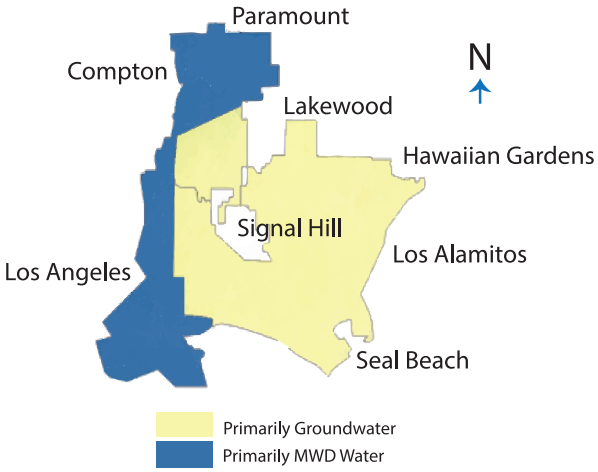
Source of Drinking Water

During 2013, approximately 48 percent of the potable water serving the City was supplied by groundwater, and the remaining 52 percent was supplied through purchased imported surface water. In general, the sources of drinking water (for both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As the water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, sometimes including radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

LBWD purchases treated surface water from the Metropolitan Water District of Southern California (MWD) and treats groundwater pumped from active wells around the Long Beach and Lakewood area at our Groundwater Treatment Plant. Both the purchased surface water quality and the treated groundwater quality surpass the Federal and State drinking water standards. The Federal regulations are set by the U.S. Environmental Protection Agency (U.S. EPA), and the State standards are set by the California Department of Public Health (CDPH).

Two major aqueducts supply the surface waters feeding MWD's five regional treatment plants. Colorado River water, which has the higher mineral content of the two supplies, is brought into Southern California through the 242-mile long Colorado River Aqueduct. This aqueduct, constructed and operated by MWD, originates at Lake Havasu and terminates in Southern California at Lake Matthews. State Project water, which contains a lower mineral content but higher organic matter content, is conveyed through the California Aqueduct. This aqueduct, constructed and operated by the California Department of Water Resources, transfers water originating from Lake Oroville in Northern California through 441 miles before terminating in Southern California.

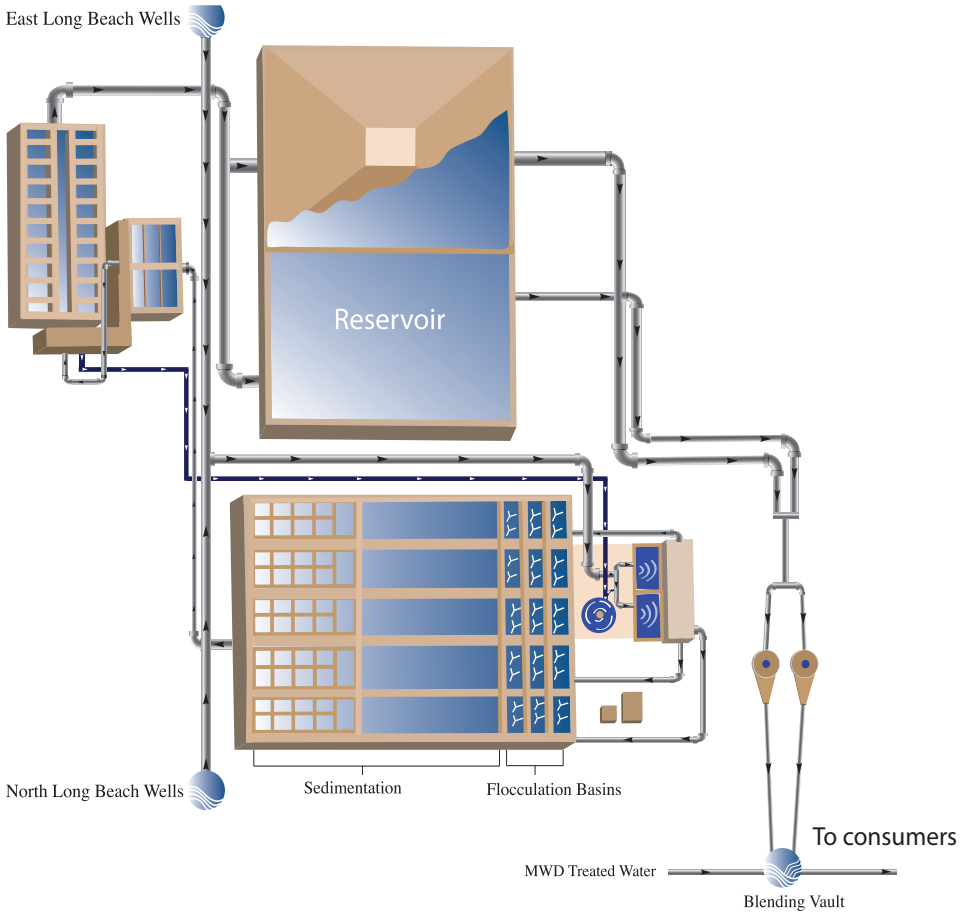
The groundwater treated at the LBWD Groundwater Treatment Plant originates from the San Gabriel watershed. The watershed is fed by rain and snow melt and flows through washes and creeks into the San Gabriel River and Whittier Narrows before percolating into the underground aquifer of the central basin area of Los Angeles. The City of Long Beach is a part of the Central Basin service area.



For hydraulic reasons, the Long Beach service area may be divided into two main regions: the MWD zone, which primarily receives purchased treated surface water, and the blended zone, which may receive a combination of treated groundwater and purchased treated surface water. LBWD sometimes changes the blends of water in our system, and the residents may notice the associated mineral content (hardness) changes to the water quality. Regardless of the area in Long Beach that you work or live in, LBWD's goal is to provide drinking water that meets or surpasses all water quality regulations at the most reasonable cost to our customers. The graph to the right shows the areas that may be affected by a change in the water blend.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is pumped from our groundwater wells to the LBWD Treatment Plant. Special water treatment chemicals, known as coagulants, are added to the water in order to cause the particles in the water to adhere to one another (called floc) making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges.



Chlorine and ammonia are added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chloramine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, fluoride (used to prevent tooth decay) is added and the pH is adjusted (to protect distribution system pipes) before the water is pumped to drinking water reservoirs, and into your neighborhood, home or business.

Source Water Assessment

Long Beach Water Department receives water from MWD, Lakewood and local groundwater wells in Long Beach. As required under the 1996 Safe Drinking Water Act amendments, a source water assessment must be completed for all active drinking water sources. The goal of the source water assessment is to inventory all potential activities that may degrade the source water quality. MWD completed its source water assessment of its Colorado River and State Water Project supplies in December 2002. It was established that Colorado River supplies are most vulnerable to recreation, urban/storm water runoff, and increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation, and wastewater. A copy of the assessment can be obtained by contacting MWD by phone at (213) 217-6850.

The Lakewood Department of Water Resources completed an assessment of all drinking water wells that serve the city's drinking water system in 2003. These studies examined the potential vulnerability of each well to contaminants that could enter the water supply. It was established that the groundwater is most vulnerable to current and historic gas stations, repair shops, storage tanks and dry cleaners. A copy of the complete assessment is available at the Lakewood City Clerk's Office at 5050 Clark Avenue or by contacting the Lakewood Department of Water Resources, at 562-866-9771, extension 2700.

The LBWD completed a new source water assessment for its active wells in July 2012. New wells that are constructed after this date must also undergo a similar assessment. The assessment concluded that all active wells are considered most vulnerable to the community sewer collection system. Depending on location, some wells are considered vulnerable to gas stations, dry cleaners, leaking underground fuel tanks, airport activities, metal plating/finishing/fabrication, plastic/synthetics producers and historic landfills. However, although the wells are considered vulnerable to the aforementioned activities, the LBWD performs water quality monitoring for each active well and has not detected any constituents that suggest contamination. It is noteworthy to point out that the physical barrier (well containment) has a high effectiveness against these contaminations. Please contact the LBWD by phone at (562) 570-2300 for more details or if you would like to review the assessment document.

Important Health Information

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. USEPA/ Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791) or at **www.epa.gov/safewater/hotline/**.

Natural Contaminants Present in Source Water Prior to Treatment May Include:

Microbial Contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

Inorganic Contaminants, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, CDPH prescribes regulations that limit the amount of specific contaminants in water provided by public water systems. The Long Beach Water Department takes these regulations very seriously, and in all instances we treat our water to comply with or be better than CDPH's regulations. *More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791) or visit* **http://water.epa.gov/drink/index.cfm.**

Definitions

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.
grains/gal (grains per gallon): Grains of compound per gallon of water.
HRAA: Highest running annual average.
LRAA: Locational running annual average.
MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.
MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.
MRDL (Maximum Residual Disinfectant Level): 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.
MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
NA: Not applicable
ND (Not detected): Indicates that the substance was not found by laboratory analysis.
NL (Notification Level): NLs are health-based advisory levels established by CDPH for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.
NS: No standard
NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.
PDWS (Primary Drinking Water Standard): MCLs and MRDLs for contaminants that affect health, along with their monitoring and reporting requirements and water treatment requirements.
PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.
ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).
ppm (parts per million): One part substance per million parts water (or milligrams per liter).
ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).
TON (Threshold Odor Number): A measure of odor in water.
TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Disinfection and Disinfection Byproducts (Trihalomethanes, Haloacetic Acids and Bromate)

Trihalomethanes and Haloacetic Acids

Disinfection of drinking water was one of the major public health advances in the 20th century. It was a major factor in reducing waterborne diseases caused by pathogenic bacteria and viruses. Long Beach Water Department utilizes chloramine disinfection in its disinfectant process. We carefully monitor the amount of disinfectant, adding the lowest quantity of chloramine necessary to protect the safety of your water throughout the distribution system, without compromising taste. However, chloramine can react with naturally-occurring materials in the water to form disinfection byproducts (DBPs), which may pose as health risks. Total trihalomethanes (TTHMs) and haloacetic acids (HAA5) are the most common DBPs and are suspected to be carcinogenic in humans.

Some people consuming water containing TTHM in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer. To lower the risk from ingesting water containing DBPs, the Stage 1 Disinfectants/Disinfection Byproducts Rule regulated by U.S. EPA, in 2002, lowered the acceptable TTHM level from 100 ppb to 80 ppb and added to the list HAAs at an acceptable MCL level of 60 ppb. To better protect health, the U.S. EPA in 2006 regulated utilities to meet the Stage 2 D/DBP Rule by 2012. This new Rule builds on the existing Stage 1 D/DBP regulations by requiring water systems to meet disinfection by-product maximum contaminant levels (MCLs), at each disinfection monitoring site in the distribution system.

Long Beach began monitoring for Stage 2 compliance in 2009 and both TTHM and HAA5 values from the 2013 monitoring were in compliance with the Stage 2 Rule requirements. The values for TTHMs in the distribution system ranged from 29 - 62 ppb, and the highest locational running average (LRAA) was 51 ppb, or well below the MCL of 80 ppb. The distribution system HAA5 concentrations ranged from 8 - 20 ppb, and the highest LRAA was 16 ppb; also well below the MCL of 60 ppb.

Bromate

Bromate, which is also a disinfection by-product, is formed when ozone reacts with naturally occurring bromide found in the source water. Systems using ozone to treat drinking water are required to monitor for bromate at the treatment plant's effluent. LBWD does not ozonate our waters; however, the purchased treated surface water from MWD may have detectable levels of bromate.

Exposure to high concentrations of bromate over a long period of time caused cancer in rats and kidney effects in laboratory animals, and it is suspected of potential reproductive effects in humans. The U.S. EPA developed an MCL of 10 ppb that it considers protective of non-cancer health effects from long-term exposure in humans. In 2013, MWD's drinking water bromate levels were reported to be as high as 7.6 ppb leaving their treatment plant (on a running annual average basis). LBWD can usually decrease the bromate levels in most of our system by blending with our treated groundwater. In 2013, LBWD did not detect bromate above the minimum reporting limit (MRL), in its distribution system.

Other educational information

Boron

Boron is naturally present in the environment. Exposure to high concentrations of boron in excess of the notification levels by women who are pregnant may increase their risk of having babies with developmental effects, based on studies in laboratory animals. The level found in LBWD's water for boron was 120 ppb; well below the State's notification level of 1000 ppb.

Fluoridation

Fluoride is one of the most plentiful elements on earth. It occurs naturally in water supplies throughout California and elsewhere. When fluoride is present in drinking water at optimal levels, it has been shown to promote oral health by preventing tooth decay. Water systems are considered naturally fluoridated when the natural level of fluoride is greater than 0.7 ppm. Water fluoridation refers to the practice of adjusting the level of fluoride to 0.7 to 1.2 ppm. Blending fluoridated water from different sources does not increase total fluoride levels in drinking water. Currently, about 67 percent of the U.S. population on public water supplies has access to fluoridated water.

The CDPH and the U.S. Centers for Disease Control and Prevention strongly agree that fluoridated water helps promote dental hygiene and reduces the risk of caries (cavities) in children and adults. For these reasons and because it is a cost-effective public health measure, the Long Beach City Council in 1971 mandated that LBWD add fluoride at a dose to achieve a level of 1.0 mg/L in the drinking water, the level recommended by the American Dental Association. Consumers may obtain more information about fluoridation, oral health, and current issues at: **www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx**.

Lead and Drinking Water

Elevated levels of lead, if present in your water, 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. Long Beach Water Department is responsible for providing high-quality drinking water, but we 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. (This water can be captured for non-potable use.) 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**.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants.

The tables included in this report list all the drinking water contaminants that we detected during the 2013 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables are from the testing performed from January 1 to December 31, 2013. The State requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Summary of Water Quality Results for 2013

Regulated Substances

	GOALS	Regulatory Levels			MWD Zone (114)			Blended Zone (325)			Typical Sources of Contamination
	PHG (MCLG)	MCL	2nd MCL	NL (AL)	Ave.	Max	Range	Ave.	Max	Range	
Clarity											
Turbidity (NTU)	NA	TT	5	NS	0.08	0.09	ND-0.09	0.08	0.09	ND-0.09	Soil runoff
Turbidity (Lowest monthly percent of samples meeting Limit)[1]					100	NA		100	NA		Soil runoff
Microbiological (% Positive)											
Coliform Bacteria	0	5%	NS	NS	City-wide: 0.44% highest monthly, range ND – 0.44%						Naturally present in the environment
Inorganic Chemicals											
Aluminum (ppb)	600	1000	200	NS	130	224	69 - 224	107	140	90 - 140	Erosion of natural deposits, added during water treatment
Arsenic (ppb)	0.004	10	NS	NS	2.6	3.5	2.0 – 3.5	ND	2.7	ND – 2.7	Erosion of natural deposits; runoff from orchards and industrial processes
Barium[2] (ppb)	2000	1000	NS	NS	76	NA	NA	32	NA	NA	
Copper[3] (ppb)	300	NS	1000	(1300)	City-wide: 174 = 90th percentile, 0% greater than Federal AL (1300 ppb)						Corrosion of plumbing, erosion of natural deposits
Fluoride (ppm)	1	2	NS	NS	0.86	0.94	0.79 – 0.94	0.89	0.99	0.82 – 0.99	Erosion of natural deposits, supplemental additive
Lead[3] (ppb)	0.2	NS	NS	(15)	City-wide: <5 = 90th percentile, 0% greater than Federal AL (15 ppb)						Corrosion of plumbing, erosion of natural deposits
Nitrate(N) (ppm)	10	10	NS	NS	0.4	0.54	ND-0.54	ND	0.46	ND-0.46	Erosion of natural deposits; runoff from fertilizer use and septic systems
Disinfection Byproducts and Maximum Residual Disinfectants											
Haloacetic acids (HAA_5) (ppb)	NS	60	NS	NS	City-wide:16 ppb highest L RAA, range 8 - 20 ppb						Byproduct of drinking water chlorination
Trihalomethanes (TTHM) (ppb)	NS	80	NS	NS	City-wide: 51 ppb highest L RAA, range 29 - 62 ppb						Byproduct of drinking water chlorination
Chloramines (ppm)	MRDL = 4.0 (as Cl_2)	MRDLG = 4.0 (as Cl_2)	NS	NS	City-wide: 1.98 ppm highest running annual average, HRAA; range:1.05 – 2.64 ppm						Drinking water disinfectant added for treatment
Bromate (ppb)	0.1	10	NS	NS	MWD Jensen plant effluent: 7.6 ppb highest running annual average (RAA),range 3.9 – 13 ppb; City-Wide highest RAA= < 2; range:< 2						Byproduct of drinking water ozonation
Radiological[2]											
Gross Alpha (GA) Particle Activity(pCi/L)	0	15	NS		MWD Weymouth and Diemer plant effluents Gross Alpha detected in the range of ND - 3 pCi/L.[4] Gross Alpha detected in LB (2013)-10 pCi/L.						Erosion of natural deposits
Uranium (pCi/L)[4]	0.43	20	NS	NS	2.5	NA	NA	ND	NA	NA	Erosion of natural deposits

State Unregulated Substances

Parameter/2013	Goals	Regulatory Levels			MWD Zone (114)			Blended Zone (325)			Typical Sources of Contamination
	PHG (MCLG)	MCL	2nd MCL	NL (AL)	Ave.	Max	Range	Ave.	Max	Range	
Boron[2] (ppb)	NS	NS	NS	1000	120	NA	NA	100	NA	NA	Naturally present in the environment
Chlorate[2] (ppb)	NS	NS	NS	800	48	NA	NA	ND	NA	NA	By-product of drinking water chlorination; industrial processes
Nitrosodimethylamine[5] (NDMA) (ppt)	3	NS	NS	10	2.3	4	<2 – 4.0	<2	3.5	<2 – 3.5	Formed through natural, industrial and disinfection processes

Secondary Drinking Water Standards - Aesthetic Standards

Parameter	2nd	MWD Zone (114)			Blended Zone (325)			Typical Sources of Contamination
	MCL	Ave	Max	Range	Ave	Max	Range	
Chloride (ppm)	500	84	89	79 - 89	52	88	33 - 88	Runoff/leaching from natural deposits; seawater influence
Color (CU)	15	ND	1	ND – 1	1	2	ND - 2	Naturally-occurring organic materials
Specific Conductance (µS/cm)	1600	832	945	699 - 945	583	865	410 -865	Substances that form ions when dissolved in water; seawater influence
Odor[2] (TON)	3	2	NA	NA	ND	NA	NA	Naturally-occurring organic chemicals
Sulfate (ppm)	500	178	204	139 - 204	85	199	25 - 199	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids ppm)	1000	534	616	460 - 616	358	564	244 - 564	Runoff/leaching from natural deposits

Additional Constituents of Interest

Parameter	MWD Zone (114)			Blended Zone (325)		
	Ave	Max	Range	Ave	Max	Range
Alkalinity (ppm)	112	127	104 – 127	131	138	118 - 138
Calcium (ppm)	62	69	50 - 69	38	66	23 - 66
Hardness (ppm)	244	280	208 - 244	136	261	68 - 261
Hardness (gpg)	14	16	12 - 16	7.9	15	4.0 - 15
Magnesium (ppm)	22	26	19 - 26	10	23	2.5 - 23
pH(field)	8	8.22	7.79 – 8.22	8.07	8.27	7.87 – 8.27
Potassium (ppm)	4.1	4.4	3.8 – 4.4	2.4	4.4	1.5 – 4.4
Silica (ppm)	8.4	12	5.9 - 12	14	26	6.0 - 26
Sodium (ppm)	85	91	81 - 91	76	90	69 - 90

Footnotes:

1 Turbidity is a measurement of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2 Single value from annual monitoring

3 Copper and Lead – lead and copper are regulated as Treatment Technique under the lead and Copper Rule, which requires water samples to be collected at the consumers' tap. If action levels are exceeded in more than 10% of consumers' taps, water systems must take steps to reduce these levels. Lead and copper study was conducted in 2013 at consumers' taps. The values reported are in compliance with the Lead and Copper Rule.

4 Data triennially monitored by MWD (2011). Uranium monitored by MWD detected levels of 1 – 2 pCi/L at Weymouth plant effluent and 2 pCi/L at Diemer plant effluent.

5 NDMA analysis conducted by LBWD Water Quality Laboratory using Standard Methods 6450B.