LONG BEACH WATER DEPARTMENT
WATER QUALITY REPORT

Water testing performed in 2007

Proudly Presented By:

LONG BEACH WATER DEPARTMENT

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The Long Beach Water Department

Since its formation in 1911, the Long Beach Water Department (LBWD) has been delivering a safe and dependable water supply to the residents and businesses within the City of Long Beach (City). Currently, LBWD serves a total population of 492,912 through 902 miles of pipelines. This water is tested on a routine basis for microbiological as well as chemical quality.

During 2007, the staff of skilled water scientists, engineers, and technicians performed 76,281 tests to analyze for more than 120 drinking water contaminants to ensure that the water quality meets or betters all federal and state standards. We are pleased to inform you that no constituent was detected over the enforceable limit that the California Department of Public Health (CDPH) has set.

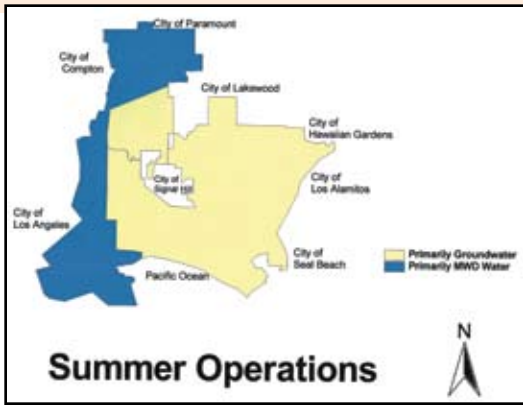
Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Included are details about where your water comes from, what it contains, and how it compares to federal and state standards. As in the past, we are committed to delivering the best quality drinking water. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of all our water users. We are also committed to providing you with information because informed customers are our best allies.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than 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, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Source of Drinking Water

Approximately 47% of the potable water serving the City is supplied by groundwater, and the remaining 53% is through purchased imported surface water. 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 and 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 30 wells around the Long Beach area at our Groundwater Treatment Plant. Both the purchased surface water and the treated groundwater better federal and state water quality 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 a 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 Mathews. 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.

In addition to wholesaling water to LBWD, MWD is also proactive in protecting the quality of the water supplied to its service area. These efforts include watershed protection against possible contamination. Recent water quality protection activities on the Colorado River included perchlorate (see "Other Contaminants of Public Interest") and uranium mill tailings located at Moab, Utah. Rainwater seeping through the mill tailings has the potential of degrading the quality of the Colorado River. With significant efforts from MWD, its member agencies, other States, and the U.S. EPA, the group was successful in convincing the U.S. Department of Energy (DOE) to move the tailings to a location that will not pose a threat to the Colorado River.

The groundwater treated at the LBWD Groundwater Treatment Plant originates from the San Gabriel watershed. The watershed is fed by the 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 up 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. Additionally, because the price of the water that LBWD purchases from MWD is less expensive in the winter season (from October to April), the blended zone may receive more surface water than groundwater during this time. Between May to September, defined as summer operations, we treat and distribute more of the local groundwater to the blended zone than purchase treated surface water, in order to keep the rates to our consumers low. For this reason, residents living in different areas of Long Beach may receive different blends of water throughout the year. Regardless of the area in Long Beach that you work or live in, LBWD's goal is to provide water meeting or bettering all water quality regulations to our consumers at the most reasonable cost. The graphs on this page show the areas that may be affected by the change in the water blend.

Other Contaminants of Public Interest

Lead

Lead is a well-known water quality issue that has resurfaced in the news recently due to high concentrations of this contaminant reported in the drinking water serving certain utilities. Lead in the drinking water can be derived from many sources, but is mostly commonly found in systems that contain lead in the distribution system, such as lead service lines, or in the lead-containing plumbing fixtures found in consumers' households. LBWD does not use this type of service line in the distribution system.

In 1991, the U.S. EPA instituted the Lead and Copper Monitoring Rule in an effort to limit lead in the drinking water. As part of this rule, an Action Level for lead was set at a level of 15 parts per billion (ppb). This rule is unique in that the samples are collected from the customer's' tap, not within the system where the majority of the water quality monitoring usually takes place. If the requirement is not met, then the utility must institute a technology that controls the level of lead and copper reaching the consumer, most commonly through a practice known as "corrosion control."

LBWD has conducted several rounds of lead and copper monitoring since 1992, and the most current sampling occurred in 2007. The latest results show that the 90th percentile value for lead is less than 5 ppb (Action Level of 15 ppb), while the copper concentration is 140 ppb (AL is 1,300 ppb).

Disinfection Byproducts

TTHMs and HAA5s

The Stage 1 Disinfectants/Disinfection Byproducts (D/DBP) Rule became effective in January 2002. DBPs, including total trihalomethanes (TTHM) and haloacetic acids (HAA5), are byproducts of the disinfection process and suspected human carcinogens. 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 USEPA lowered the TTHM level from 100 ppb to 80 ppb, and also regulated another class of DBPs known as HAA5 at 60 ppb.

Regulations require that these disinfection byproducts be reported as running annual averages to CDPH. The running annual average is obtained by averaging the present quarter's data together with the data obtained from the three previous quarters. LBWD's 2007 TTHM values in the distribution system ranged from 35 to 59 ppb, and the highest running annual average was 45 ppb, or well below the new MCL of 80 ppb. LBWD's 2007 distribution system HAA5 concentrations ranged from 10 to 17 ppb, and the highest running annual average was 13 ppb, also well below the MCL of 60 ppb.

Bromate

Bromate is a disinfection byproduct that 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 MWD surface water may have detectable levels of bromate.

Exposure to high concentrations of bromate over a long period of time caused cancer in rats, kidney effects in laboratory animals, and is suspected of potential reproductive effects in human. The U.S. EPA set a MCL of 10 ppb for bromate, which it considers to be protective of human health effects from long-term exposure. MWD's drinking water bromate levels, reported as the running annual average, were as high as 6.3 ppb in 2007. LBWD blends the purchased MWD surface water with treated groundwater before distribution, and bromate results in our distribution water were below 5 ppb in 2007.

Perchlorate

Perchlorate is an inorganic chemical used in the manufacturing of rocket fuels and explosives. At high concentrations in drinking water, it can interfere with the thyroid's gland ability to produce hormones necessary for normal growth and development. Perchlorate was first detected in drinking water wells in northern California in 1997 and was later detected in many water wells throughout the state as well as in the Colorado River. The source of contamination of the Colorado River has been determined to be an industrial site in Nevada. The Colorado River water is an important source of drinking water for southern California and much of the water that Long Beach purchases from MWD comes from this source.

MWD initiated voluntary monitoring for perchlorate in 1997. Levels found in the Colorado River supply have ranged between 4 and 9 ppb. No perchlorate has been detected in MWD's State Project water, or in LBWD's wells. Since 1997, the Nevada EPA has taken significant steps to mitigate the leaching of perchlorate into the river, and as a result, there were no detectable levels in MWD's water in 2007. Currently, the best laboratories can detect perchlorate reliably at 4 ppb and on October 18, 2007, California Department of Public Health (CDPH) adopted a MCL for perchlorate at 6 ppb.

Fluoridation

Fluoride is one of the most plentiful elements on earth, and 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, and 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% of the U.S. population on public water supplies has access to fluoridated water.

The CDPH, as well as the US Centers for Disease Control and Prevention, strongly agree that fluoridated water helps promote dental hygiene and reduce 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 1.00 mg/L in the drinking water, the level recommended by the American Dental Association. MWD (purchased surface water) also adopted a policy to fluoridate at their five treatment plants as of November 2007. Please refer to www.ada.org/public/topics/index.asp if you have questions regarding fluoride and fluoridation.

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 prescribe regulations which 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 treats our water to comply or be better than CDPH's regulation

More information about contaminants and potential health effects can be obtained by calling the U.S.EPA's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

As required under the 1996 Safe Drinking Water Act amendments, a source water assessment must be complete 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 found that Colorado River supplies are most vulnerable to recreation, urban/storm water runoff, 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 LBWD completed the required source water assessments for its active wells in April 2003. New wells that are constructed after this date must also undergo a similar assessment. To summarize, 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, confirmed leaking underground fuel tanks, airport activities, and historic landfills. However, although the wells are considered vulnerable to the aforementioned activities, the LBWD performs water quality monitoring for each active well annually and have not detected any constituents that suggests contamination. Please contact the LBWD by phone at (562) 570-2300 for more details if you would like to review this document.

Water Conservation

Use water efficiently to protect our water supply and the environment, and to lower your water, sewer, and energy bills. Go to our Web site www.lbwater.org to find out how to do so, including:

- Reduce indoor water use to reduce water, sewer, and energy (hot water!) bills.
- Fix leaks.
- Use our money to install water efficient toilets and clothes washers (saving lots of energy).
- Shower for no more than 5 to 10 minutes at a time, and use only a water-efficient showerhead (save water and energy).

More than 55% of the typical home's water is used outdoors. The following tips will help conserve this valuable resource.

- Don't hose down patios and driveways.
- Reduce the amount of grass in your landscape, substituting colorful low-maintenance California-Friendly landscape and hardscape such as water-permeable patios and decks.
- Don't over-water your lawn: Sign up for our FREE eWatering updates. We will send you an email recommending a new watering schedule as the weather changes throughout the year.

Learn about these and other ways to waste less water at www.lbwater.org

Public Meetings

The Long Beach Water Department Board of Water Commissioners meets on the first Thursday of each month at 9:15 a.m. and on the third Thursday at 7:00 p.m. of each month at our Administration Building. Please feel free to participate in these meetings. For further information, please call (562) 570-2300.

Questions?

If you have any questions about your water quality or this report, please call the LBWD at (562) 570-2491 (TDD 570-2499) Monday through Friday between 8 a.m. and 4:30 p.m. This information is available in an alternative format by request to Ms. Melissa Keyes at (562) 570-2309, or by writing to:

Long Beach Water Department

1800 E. Wardlow Road

Long Beach, CA 90807

Sampling Results

During the past year we have collected thousands of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain contaminants less than once per year because concentrations of these contaminants are not expected to vary significantly from year to year.

REGULATED SUBSTANCES				MWD Zone	Blended Zone		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE AMOUNT DETECTED (RANGE LOW-HIGH)	AVERAGE AMOUNT DETECTED (RANGE LOW-HIGH)	VIOLATION	TYPICAL SOURCE
Aluminum[1] (ppm)	2007	1	0.6	0.08 (ND–0.13)	0.12 (0.07–0.15)	No	Erosion of natural deposits; residue from some surface water treatment processes
Bromate (ppb)	2007	10	(0)	MWD Jensen Plant Effluent Range: 3.4–10; running annual average: 6.3 ppb		No	By-product of drinking water ozonation
Chloramines (ppm)	2007	[4.0 (as Cl_2)]	[4.0 (as Cl_2)]	City-wide range: 0.54–2.90 ppm; highest running annual average: 2.26 ppm		No	Drinking water disinfectant added for treatment
Fluoride (ppm)	2007	2.0	(1)	0.76 (0.16–1.04)	0.83 (0.58–0.95)	No	Erosion of natural deposits; supplemental additive
Haloacetic Acids (ppb)	2007	60	NA	City-wide range: 10–17 ppb; highest running annual average: 13 ppb		No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2007	80	NA	City-wide range: 35–59 ppb; highest running annual average: 45 ppb		No	By-product of drinking water chlorination
Total Coliform Bacteria[2] (% positive samples)	2007	More than 5.0% of monthly samples are positive	(0)	City wide range: ND–2.09%, highest monthly: 2.09 %		No	Naturally present in the environment
Turbidity[3] (NTU)	2007	TT < 0.5	NA	0.13 (0.05–0.13)	0.12 (0.04–0.12)	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2007	TT < 0.5	NA	100% (NA)	100% (NA)	No	Soil runoff

Tap water samples were collected for lead and copper analyses from 156 sample sites throughout the city

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper[4] (ppm)	2007	1.3	0.17	0.14	0	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2007	15	2	0	0	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	MWD Zone AVERAGE AMOUNT DETECTED	MWD Zone RANGE LOW-HIGH	Blended Zone AVERAGE AMOUNT DETECTED	Blended Zone RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2007	500	NS	82	65–104	47	36–67	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2007	15	NS	1	ND–5	1	ND–5	No	Naturally-occurring organic materials
Odor–Threshold (TON)	2007	3	NS	1	NA	1	NA	No	Naturally-occurring organic materials
Specific Conductance (µS/cm)	2007	1600	NS	725	532–922	502	389–697	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2007	500	NS	124	73–183	48	23–98	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2007	1000	NS	400	308–532	288	240–368	No	Runoff/leaching from natural deposits

ADDITIONAL SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MWD Zone AVERAGE AMOUNT DETECTED	MWD Zone RANGE LOW-HIGH	Blended Zone AVERAGE AMOUNT DETECTED	Blended Zone RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2007	97	79–116	128	99–156	Carbonates, bicarbonates and hydroxyl ions of natural minerals in water
Calcium (ppm)	2007	39	29–53	28	21–38	Natural mineral found in the earth's crust
Hardness (grains/gal)	2007	9.6	7.0–12.6	5.9	3.6–9.1	Calculated from calcium and magnesium concentrations
Hardness (ppm)	2007	164	121–216	101	62–155	Calculated from calcium and magnesium concentrations
Magnesium (ppm)	2007	16	12–20	7.5	2.1–15	Natural mineral found in the earth's crust
pH (Units)	2007	7.8	6.4–9.1	8.1	7.4–8.7	Intensity of acidity or alkalinity in water
Potassium (ppm)	2007	3.6	2.9–4.5	2.4	1.6–4.1	Abundant element found in the earth's crust
Silica (ppm)	2007	13	9.4–18	18	13–21	Abundant element found in the earth's crust
Sodium (ppm)	2007	74	59–90	66	52–75	Naturally present in the environment; seawater

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	NL	PHG	MWD Zone AMOUNT DETECTED[5]	MWD Zone RANGE LOW-HIGH	Blended Zone AMOUNT DETECTED[5]	Blended Zone RANGE LOW-HIGH	TYPICAL SOURCE
Boron (ppm)	2007	1	NS	0.12	NA	0.11	NA	Naturally present in the environment
N-nitrosodimethylamine[6] (ppt)	2007	10	3	6	ND–9	3	ND–7	Formed through natural, industrial and disinfection processes
Vanadium (ppb)	2007	50	NS	3	NA	ND	NA	Naturally present in the environment

Footnotes:

[1] SMCL = 0.2 ppm.
[2] The results reported to the California Department of Public Health are based on distribution system monthly sampling.
[3] Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The MCL for treated surface water shall be less than 0.5 NTU in 95% of the measurements taken each month, and shall not exceed 5.0 NTU at any time.
[4] SMCL = 1.0 ppm.
[5] Amount Detected is a single value, unless indicated otherwise.
[6] Average Amount Detected.

Definitions

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

grains/gal (grains per gallon): Grains of compound per gallon of water.

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.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

MRDL (Maximum Residual Disinfectant Level): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. EPA.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NL (Notification Level): Notification levels 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. Turbidity in excess of 5 NTU is just noticeable to the average person.

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.