ANAHEIM

PUBLIC UTILITIES

2013 Water Quality Report

DATA FOR 2012

Letter from the General Manager

ANAHEIM PUBLIC UTILITIES

Thank you for taking the time to read your water quality report. Anaheim Public Utilities is committed to providing high quality water to our customers, at some of the lowest rates in Orange County. Each year, we conduct more than 44,000 analyses to ensure our water is consistently clean, safe and reliable. We are pleased that the quality of Anaheim's water not only meets but often exceeds the state and federal drinking water standards.

This Water Quality Report, as required by the U.S. Environmental Protection Agency and the California Department of Public Health, covers the 2012 calendar year.

If you have any questions, please contact our Water Quality Laboratory at 714.765.4556 or email us at waterquality@anaheim.net.

Marcie L. Edwards
GENERAL MANAGER
ANAHEIM PUBLIC UTILITIES

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Questions About Your Water? Contact Us for Answers

For information about this report, or your water quality in general, please contact our Water Quality Laboratory at 714.765.4556, or e-mail us at waterquality@anaheim.net. You may also address water quality and other utility issues by attending a Public Utilities Board meeting scheduled for 5 p.m. on the fourth Wednesday of each month, at Anaheim West Tower, 11th Floor Conference Room, Anaheim, California.

To learn more about the potential health effects of contaminants listed in this report, call the U.S. Environmental Protection Agency hotline at 800.426.4791.

Este informe contiene información muy importante sobre su agua potable.
Para mas información ó traducción, favor de contactar a Customer Service Representative.
Telefono: 714.765.4151.

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

We comply with the AMERICANS WITH DISABILITIES ACT.
For this information in other formats, contact: 714.765.3300, TTY 714.765.5125 or visit anaheim.net/utilities.

Anaheim's Sources of Supply

Anaheim's water supply is a blend of groundwater from our own wells, and water imported from Northern California and the Colorado River by the Metropolitan Water District of Southern California (MWD).

The source water for our wells is a natural aquifer that is replenished with water from the Santa Ana River, local rainfall, and imported water.

Managed by the Orange County Water District, the groundwater basin is 350 square miles in area and lies beneath most of northern and central Orange County. Anaheim and more than 20 cities and retail water districts pump from the groundwater basin to provide water to homes and businesses.

Your water source depends on where you live or work within the boundaries of our community. Generally, the source of water for areas east and south of the 57 and 91 freeway interchange is imported water. The central and western portions of Anaheim mostly receive groundwater or a blend with imported supplies. Customers in east Anaheim may also receive water from Anaheim's owned and operated Lenain Water Treatment Facility.

New This Year:

Water Sustainability Campus

Anaheim's newest addition, the Water Sustainability Campus, features innovative technologies for conserving one of our most precious resources – water.

This state-of-the-art recycling facility showcases advanced treatment and disinfection technologies for converting wastewater from a nearby sewer into clean water, which is then used for landscape irrigation and non-potable uses.

Porous pavement and an infiltration system help with stormwater management by reducing pollution to streams and the ocean, and help to replenish the local groundwater basin.

Finally, a demonstration garden featuring California-friendly plants and hardscape demonstrates how drought-tolerant vegetation can beautify urban spaces.

To learn more, visit **anaheim.net/utilities**.

Basic Information about Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) can include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the layers of the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife
- Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses
- 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, and farming
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban storm water runoff, agricultural application, and septic systems
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production or mining activities

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in the water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

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 U.S. EPA's Safe Drinking Water Hotline at 800.426.4791.

WATER QUALITY INFORMATION

The EPA Would Like You to Know…

About Lead in Tap Water

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.

Anaheim Public Utilities is responsible for providing high-quality drinking water, but cannot control the variety of materials used in home plumbing components.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by running your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may want 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 U.S. EPA's Safe Drinking Water Hotline, 800.426.4791, or online at: epa.gov/safewater/lead.

Nohl Canyon Water Storage Tank

DEDICATED: JUNE 7, 2011

Immuno-Compromised People

Some individuals may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer undergoing chemotherapy; those who have undergone organ transplants; those with HIV/AIDS or other immune system disorders; some elderly; and infants can be particularly at risk from infections.

These individuals or their caretakers should seek advice about drinking water from their health care providers.

The U.S. EPA/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 800.426.4791.

Radon Advisory

Radon is a colorless, odorless gas that is formed from radioactive decay of uranium in the ground, which is found throughout the U.S. It 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 and can get into indoor air when released from tap water during showering, dishwashing, and other household activities. Breathing air containing radon can lead to lung cancer. The radon entering a home through tap water, however, is negligible compared to the amount that can enter a home through soil.

The U.S. EPA Action Level for radon in indoor air is 4.0 picocuries per liter. Radon from your tap water contributes no more than 0.1 picocurie per liter in indoor air.

If you are concerned about radon in your home, test the air. If the level of radon is 4 picocuries per liter of air or higher, there are ways to address a radon problem that are cost effective.

For additional information, call the California radon program (800.745.7236), the EPA Safe Drinking Water Hotline (800.426.4791), or the National Safety Council Radon Hotline (800.SOS.RADON).

Want Additional Information?

There is information on our website about your drinking water quality and water issues in general, visit anaheim.net/utilities to learn more. Click on Public Utilities, then "Focus on Water Quality." Or, feel free to contact our water quality staff at 714.765.4556.

2013 City of Anaheim Water Quality (based on 2012 data)

Chemical	MCL	PHG (MCLG)	Groundwater Average Amount	Lenain Average Amount	MWD Average Amount	Range of Detections	Most Recent Sampling Date	Typical Source of Contaminant
Radiologicals								
Radon (pCi/L)	Not Regulated	n/a	311	n/a	ND	ND – 319	2012	Soil Gas from Natural Deposits
Uranium (pCi/L)	20	0.43	9.0	4.7	2.0	1.0 – 11	2012	Erosion of Natural Deposits
Gross Beta (pCi/L)	50(a)	(0)	n/a	n/a	<4	ND – 6	2012	Decay of Natural or Man-made Deposits
Organic Chemicals								
Trichloroethylene (ppb)	5	1.7	<0.5	ND	ND	ND – 0.6	2012	Discharge from Industrial
Inorganic Chemicals								
Aluminum (ppm)	1	0.6	ND	0.16	0.14	ND – 0.34	2012	Water Treatment Chemical
Arsenic (ppb)	10	0.004	<2	ND	ND	ND – 2.4	2012	Erosion of Natural Deposits
Barium (ppm)	1	2	ND	0.12	ND	ND – 0.12	2012	Erosion of Natural Deposits
Fluoride (ppm)	2	1	0.44	0.31	0.8	0.31 – 1.1	2012	Erosion of Natural Deposits
Nitrate as NO_3 (ppm)	45	45	13	ND	ND	ND – 20	2012	Fertilizers, Septic Tanks
Nitrate+Nitrite as N (ppm)	10	10	2.9	ND	ND	ND – 4.4	2012	Fertilizers, Septic Tanks
Secondary Standards*								
Aluminum (ppb)	200*	600	ND	160	140	ND – 340	2012	Water Treatment Chemical
Chloride (ppm)	500*	n/a	84	93	90	46 – 111	2012	Erosion of Natural Deposits
Color (units)	15*	n/a	<1	ND	1	ND – 3	2012	Natural Organic Materials
Odor (threshold odor number)	3*	n/a	ND	1	2	ND – 2	2012	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	919	984	760	340 – 1100	2012	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	140	230	150	103 – 230	2012	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	578	600	485	444 – 716	2012	Erosion of Natural Deposits
Turbidity (NTU)	5*	n/a	0.3	0.03	ND	ND – 1.4	2012	Erosion of Natural Deposits
Unregulated Contaminants Requiring Monitoring								
Bicarbonate (as HCO_3) (ppm)	Not Regulated	n/a	226	160	n/a	160 – 258	2012	Erosion of Natural Deposits
Boron (ppb)	NL=1,000	n/a	130	n/a	130	ND – 220	2012	Erosion of Natural Deposits
Chromium – 6 (ppb)	Not Regulated	n/a	<1	ND	ND	ND – 1.2	2012	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	101	63	48	45 – 117	2012	Erosion of Natural Deposits
Dichlorodifluoromethane (ppb)	NL=1,000	n/a	<0.5	ND	ND	ND – 1.6	2012	Industrial Waste Discharge
Magnesium (ppm)	Not Regulated	n/a	18	26	20	13 – 26	2012	Erosion of Natural Deposits
N-Nitrosodimethylamine (NDMA)(ppt)	NL= 10	n/a	ND	ND	<2	ND – 3	2012	Chloramination and Industrial Processes
pH (pH units)	Not Regulated	n/a	7.9	7.6	8.1	7.3 – 8.6	2012	Erosion of Natural Deposits
Potassium (ppm)	Not Regulated	n/a	4.1	4.5	4.0	3.1 – 4.8	2012	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	64	90	79	39 – 90	2012	Erosion of Natural Deposits
Total Alkalinity (ppm as $CaCO_3$)	Not Regulated	n/a	185	110	96	53 – 212	2012	Erosion of Natural Deposits
Total Hardness (grains/gal)	Not Regulated	n/a	19	15	12	4.7 – 22	2012	Erosion of Natural Deposits
Total Hardness (ppm as $CaCO_3$)	Not Regulated	n/a	329	257	205	80 – 373	2012	Erosion of Natural Deposits
Total Organic Carbon (ppm)	Not Regulated	TT	0.35	2.6	2.4	ND – 3.1	2012	Various Natural and Man-made Sources
Vanadium (ppb)	NL=50	n/a	3.7	n/a	ND	ND – 5.1	2012	Erosion of Natural Deposits

ppm = parts-per-million; **ppb** = parts-per-billion; **ppt** = parts-per-trillion; **pCi/L** = picoCuries per liter; **NTU** = nephelometric turbidity units; **NL** = notification level; **ND** = not detected; **n/a** = not applicable; **<** = average is less than the detection limit for reporting purposes; **MCL** = Maximum Contaminant Level; **MCLG** = federal MCL Goal; **TT** = treatment technique **PHG** = California Public Health Goal; **µmho/cm** = micromho per centimeter *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).
(a) **Gross Beta MCL**: CDPH considers 50 pCi/L to be the level of concern. The official MCL is '4 millirem/year annual dose equivalent to the total body or any internal organ.'

Turbidity – treatment plant combined filter effluent	Treatment Technique	Turbidity Measurements	Sample Date	Typical Source of Contaminant
1) Highest single turbidity measurement	1 NTU	Lenain = 0.06 NTU	2012	Soil run-off
	1 NTU	MWD = 0.04 NTU	2012	Soil run-off
2) Percentage of samples less than 0.3 NTU	95%	Lenain = 100%	2012	Soil run-off
	95%	MWD = 100%	2012	Soil run-off

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms.
Low turbidity in the City of Anaheim's and Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT).
A treatment technique is a required process intended to reduce the level of contaminants in drinking water that are difficult and sometimes impossible to measure directly.

2013 City of Anaheim Distribution System Water Quality (based on 2012 data)

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	53	13 – 74	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	12	ND – 17	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	0.9	0.1 – 2.8	Disinfectant Added for Treatment
Aesthetic Quality				
Color (color units)	15*	ND	ND	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	ND – 1	Erosion of Natural Deposits
Turbidity (NTU)	5*	0.08	0.05 – 0.30	Erosion of Natural Deposits

Total trihalomethanes and haloacetic acids are tested quarterly at 12 locations. Chlorine residual disinfectant levels are tested weekly at 51 locations.
Color, odor, and turbidity are tested quarterly at 11 locations. **MRDL** = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal;
ND = not detected; **NTU** = nephelometric turbidity units *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (color, odor, clarity).

Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding AL / Number of Sites	Typical Source of Contaminant
Lead (ppb)	15	0.2	ND<5	0 / 55	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.17	0 / 55	Corrosion of Household Plumbing

Every three years, at least 50 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2012.
Lead was detected in 3 samples; none exceeded the action level. Copper was detected in 27 samples; none exceeded the action level.
The regulatory action level is the concentration which, if exceeded in more than ten percent of the homes tested, triggers treatment or other requirements that a water system must follow. The City of Anaheim complied with the lead and copper action levels.

Chart Legend

What are Water Quality Standards?

Drinking water standards established by the U.S. EPA and CDPH set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) or Maximum Contaminant Levels Goals (MCLGs) as is economically and technologically feasible.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.
- **Notifications Level (NL):** The level above which a water agency is required to notify its governing body if an unregulated contaminant is found in its drinking water.
- **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health, along with their monitoring and reporting requirements and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

How are Contaminants Measured?

Water is sampled and tested throughout the year. Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/L)
- parts per billion (ppb) or micrograms per liter (µg/L)
- parts per trillion (ppt) or nanograms per liter (ng/L)

What is a Water Quality Goal?

In addition to mandatory water quality standards, U.S. EPA and Cal/EPA have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The chart in this report includes three types of water quality goals:

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by U.S. EPA.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** 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.
- **Public Health Goal (PHG):** 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 Environmental Protection Agency.

Source Water Assessments

Imported Water Assessment

The Metropolitan Water District of Southern California updated its source water assessment of the Colorado River and State Water Project supplies in 2012. Colorado River supplies are considered to be most vulnerable to recreation contamination, urban/storm water runoff, increasing urbanization, 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 Metropolitan by phone, at 213.217.6850.

Groundwater Assessment

Anaheim has completed source water assessments of areas around each well and around the Walnut Canyon Reservoir, which provides imported water to the Lenain Treatment Plant. As in any urban area, Orange County's groundwater is considered potentially vulnerable to contamination from sources such as gas stations, dry cleaners, and industrial activities. To help prevent surface contamination of our wells, we seal the upper 400 to 500 feet of the well casing.

A copy of the complete assessment is available at the Department of Public Health, Drinking Water Field Operations Branch, 605 W. Santa Ana Boulevard, Building 28, Santa Ana, CA 92701. You may request a summary of the assessment by contacting DPH Sanitary Engineer Yen Tran at 714.558.4707 or Anaheim's Environmental Services Division at 714.765.4277.