

# 2010 Annual Consumer Confidence



## Report

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**Fluoride occurs naturally** at levels exceeding the State MCL of 2 milligrams-per-liter (mg/L) in two of KID groundwater sources. Even though these sources mix with groundwater from other, lower fluoride sources before being delivered to residences, it is not always possible to dilute the fluoride below the MCL, especially in the rainy season when tunnel water provides most of the supply. On November 19, 1993, CDPH issued KID a variance from the State's fluoride drinking water standard. The variance is CDPH permission to exceed an MCL or not comply with a treatment technique under certain conditions. The variance allows KID to exceed 2 mg/L but not exceed 3 mg/L in the distribution system. In addition, this variance requires KID to notify its customers whenever the fluoride level exceeds 2 mg/L which is a USEPA secondary MCL. This letter notification includes an explanation of the variance and mandatory dental fluorosis language approved by CDPH. In 2010, one notification was sent.

**Groundwater is protected from many infectious organisms**, such as the parasite Cryptosporidium, by the natural filtration action of water percolating through soils. There is no indication that Cryptosporidium has breached this natural soil filter and entered the KID water supply. However, 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).

**Radon is a radioactive gas** that you can't see, taste, or smell. It is found throughout the U.S. 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 in most cases be 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 picocuries 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 (1-800-745-7236), the EPA's Safe Drinking Water Act Hotline (1-800-426-4791) of the National safe Council Radon Hotline (800-SOS-RADON). KID voluntarily tested for radon in seven of its groundwater sources in 2005 and levels in these seven sources ranged between 261 - 1370 picocuries-per-liter and averaged 622 picocuries-per-liter.

**Arsenic:** While your drinking water meets the current EPA standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

**NOTE: This Report can be made available in Spanish if requested.**

*We test the drinking water quality for many constituents as required by State and Federal Regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2010.*

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

**Kinneloa Irrigation District (KID)** is pleased to provide you with this Annual Consumer Confidence Report (CCR), which contains information about the quality of drinking water that is delivered to you. This report meets the new California requirements for reporting water quality information to customers of public water systems.

Other educational information in this report informs you about drinking water safety and, hopefully, helps you to understand the challenges of delivering a safe and protected supply of drinking water.

**In 2010, KID distributed approximately 713 acre feet of water** to its customers. This is equivalent to 232 million gallons. One acre foot is enough water to cover one acre of land, one foot deep with water, or approximately 325,000 gallons. Your tap water was delivered from two vertical wells and nine horizontal wells. The vertical wells pump from the Raymond Basin down to 470 feet below the ground surface. The horizontal wells are tunnels in the mountainside that collect water via gravity. The tunnels and wells feed reservoirs where the waters can be mixed. Chlorine disinfectant is added to prevent bacterial growth in the reservoirs and the distribution pipeline. KID has emergency interconnections with the City of Pasadena, and none of these was used in 2010.

**In general, the sources of drinking water** (both tap water and 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, and can pick up substances resulting from the presence of animals or from human activity.

- *Where does our water come from?*
- *What are the possible sources of contaminants in tap water?*
- *How is our drinking water treated?*
- *What, if any, contaminants have been detected in our drinking water?*
- *Is there reason for concern about radon and nitrate in our water?*
- *Are certain people more vulnerable to the effects of some contaminants in drinking water?*
- *What is the status of our fluoride variance?*
- *Were there any violations of drinking water regulations?*
- *What are the definitions for all those regulatory and technical terms in the report?*
- *Who can I contact for more information and when does the Board of Directors meet?*

**Contaminants that may be present in source water include:** 1) **microbial contaminants**, such as virus and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; 2) **inorganic contaminants**, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; 3) **pesticides and herbicides** that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; 4) **organic chemical contaminants**, including 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, agricultural application, and septic systems; 5) **radioactive contaminants**, that can be naturally occurring or be the result of oil and gas production and mining activities.

**As in past years, the Detected Contaminant Chart** compares the quality of your tap water to State drinking water standards. More than 100 regulated contaminants have been tested that were not detected in drinking water delivered by KID; the list of non-detected contaminants is not included in the chart. With the exception of nitrate, each contaminant detected in our groundwater sources occurs in your drinking water from erosion of natural deposits in soils. Fluoride is the only chemical in your water that exceeded the maximum allowable level set by the California Department of Public Health (CDPH). KID has a fluoride variance from the CDPH which gives us permission to exceed the fluoride standard. The conditions of the variance are described in detail elsewhere in the report.

**The Kinneloa Irrigation District serves approximately 1650 people** in 594 households, a school, nursery, church and fire station in the north-central part of Los Angeles County with the city limits of Pasadena on the west, south and east and the Angeles National Forest to the north. The service area covers 500 acres and additionally encompasses 500 acres of watershed area. The General Manager reports to a five member Board of Directors that meets the third Tuesday every month at KID offices located at 1999 Kinclair Drive, Pasadena. For more information, you may contact the office at 626-797-6295.

**In order to ensure that tap water is safe to drink,** the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (Department)

prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that 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. Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

**The water quality charts** list all the regulated drinking water contaminants (and unregulated contaminants requiring monitoring) that we detected during the last three calendar years. Certain regulated chemicals are monitored less frequently than once each year. The results from the most recent testing done in accordance with the monitoring regulations and the respective sampling year are noted in each table. Some of the data, although more than one year old, are representative of the current drinking water quality.

### Definitions of terms used in the water quality charts:

**Public Health Goal (PHG)** is the level of a contaminant in drinking water below which there is no known or suspected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Contaminant Level Goal (MCLG)** is the level of a contaminant in drinking water below which there is no known or suspected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Maximum Contaminant Level (MCL)** is 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 are set to protect the odor, taste and appearance of drinking water.

**Primary Drinking Water Standards are MCLs and MRDLs** for contaminants that effect health along with their monitoring and reporting requirements, and water treatment requirements.

**Regulatory Action Level (AL)** is the concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.

**Variations and Exemptions:** Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

**Maximum Residual Disinfectant Level (MRDL)** The highest level of disinfectant allowed for water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLG's are set by the U.S. Environmental Protection Agency.

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

**ND:** Not detectable at testing limit.

**ppm:** Parts per million or milligrams per liter (mg/L)

**ppb:** Parts per billion or micrograms per liter (ug/L)

**ppt:** Parts per trillion or nanograms per liter (ng/L)

**pCi/L:** Picocuries per liter (a measure of radiation)

**Lead:** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. KID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking tap 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>.

**Nitrate: None of KID's groundwater sources exceed one-half of the MCL.** Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Testing in 2010 showed detectable nitrate in KID's groundwater sources at levels well below the action level of concern.

KINNELOA IRRIGATION DISTRICT GROUNDWATER QUALITY							
Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
<b>Radiologicals</b>							
Alpha Radiation (pCi/L)	15	( 0 )	3.9	0 - 9.9	No	2003	Erosion of Natural Deposits
Radium (pCi/L)	5	( 0 )	1.677	0 - 2.027	No	2003	Erosion of Natural Deposits
<b>Inorganic Chemicals</b>							
Nitrate (ppm as NO3)	45	45	12.4	3.0 - 21.0	No	2010	Fertilizers, Septic Tanks
Arsenic (ppb)	50	0.004	3.2	ND - 5.7	No	2010	Erosion of Natural Deposits
Fluoride (ppm) **	3	1	2.1	0.9 - 1.98	No	2010	Erosion of Natural Deposits
<b>Secondary Standards*</b>							
Chloride (ppm)	500*	n/a	17.0	7.0 - 32	No	2010	Erosion of Natural Deposits
Specific Conductance (umho/cm)	1,600*	n/a	478	340 - 620	No	2010	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	36.7	16.0 - 60.0	No	2010	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1000*	n/a	300	210 - 400	No	2010	Erosion of Natural Deposits
<b>Unregulated Contaminants Requiring Monitoring</b>							
Sodium (ppm)	Not Regulated	n/a	19.0	15.4 - 60.2	n/a	2008	Erosion of Natural Deposits
Hardness (ppm)	Not Regulated	n/a	171	72 - 286	n/a	2008	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = pico curies per liter; ntu = nephelometric turbidity units; ND = not detected  
MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; n/a = not applicable  
\* Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).  
\*\* See Fluoride note on page 4

KINNELOA IRRIGATION DISTRICT DISTRIBUTION SYSTEM WATER QUALITY						
	MCL	PHG	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Fluoride (ppm)	3**	1	1.96	0.98 - 2.9	No	Naturally present in groundwater
Total Trihalomethanes (ppb)	100	n/a	ND	ND	No	Formed from addition of chlorine
Turbidity (ntu)	5*	n/a	0.1	ND - 0.3	No	Naturally present in groundwater
Odor (ton)	3*	n/a	1	1 - 1	No	Naturally present in groundwater

Six distribution system locations are tested for fluoride quarterly at the request of the California Department of Public Health.  
\*Containment is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color)  
\*\*See fluoride note on page 4.

LEAD AND COPPER ACTION LEVELS AT RESIDENTIAL TAPS						
	Action Level(AL)	MCLG (PHG)	90th Percentile Value	Sites Exceeding AL/Number of Sites	AL Violation?	Typical Source Of Contaminant
Copper (ppb)	1.3	0.17	0.14	0 / 10	No	Corrosion of household plumbing
Lead (ppb)	15	2	5.7	0 / 10	No	Corrosion of household plumbing

Every three years, 10 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2008. Lead was detected in two samples. Copper was detected in four samples. Copper and Lead never exceeded the regulatory action level (AL). A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.