

HAYDEN LAKE IRRIGATION DISTRICT

2160 W. Dakota Ave. Hayden, Idaho 83835-5122

24 hr (208) 772-2612 ♦ FAX (208) 772-5348

district@haydenirrigation.com

Dear Customer,

Enclosed you will find Hayden Lake Irrigation District's annual water quality report for the year 2011. This report is distributed to provide information regarding your water; and contaminants we monitor for. We hope you will take a few moments to review this information about the water you drink. Two items we want to bring to your attention:

- The District takes multiple samples during each month for coliform bacteria. Sample sites are located throughout the distribution system. Results of over 98 routine samples taken in 2011 show presence of total coliform bacteria in seven (7) samples. This represents a **violation** of drinking water rules, which we want to bring to your attention. A full explanation of this violation is found at the end of this report.
- All contaminants detected in the water within the past five years are included in the enclosed report. If multiple samples are taken during a five year period, only the most recent results will be shown. Earlier monitoring results are available on our website; www.haydenirrigation.com, click on *Drinking Water Quality Report* under *Your Water* and select the desired year for information.

Water Softeners, Treatment Systems and Maintenance

Some customers have inquired about water softeners or other treatment units. The choice to install any type of treatment at your home is yours. We want your decision to be informed and knowledgeable. To that end we provide the following:

- The District does not add any chemicals or treatment to the water, including disinfection (chlorination).
- The water we provide is moderately hard, to very hard as the following report indicates on the last table, if you prefer softer water, a water softener may be an option.

Over the past year we have responded to several water quality concerns by our customers. Our investigations have resulted in the following suggestions:

- Several subdivisions built in the last 5 to 8 years had carbon, or cartridge, type filters installed after the home was constructed. In some cases the filter system has not been maintained or changed as needed. This has resulted in black particles or discolored water (carbon type) or bad odor (cartridge type) coming from the tap. If you have a filtration system in your home please maintain it regularly, it does affect the water quality.
- Water heaters should be flushed regularly, in accordance with manufacturers' recommendations. It is fairly easy to do and your manufacturer will have information on their website.
- Newer homes have an expansion tank, we are seeing these fail in some cases. They are an important safety part of the plumbing system. The tank manufacturer should have information regarding maintenance and testing.

This Old House has a decent video about draining/flushing a water heater, Consumer reports also has a good blog about it.

See: <http://www.thisoldhouse.com/toh/video/0,,20047191,00.html>

<http://blogs.consumerreports.org/home/2010/03/how-to-drain-a-water-heater-sediment-drain-valve-best-water-heater-reviews-consumer-reports.html>

Or Google 'how to flush a water heater'

Please contact us if you have questions about your water, or water service. Thank you for placing your trust in us to provide your drinking water.

Sincerely,

Alan Miller
Administrator

2011 Annual Drinking Water Quality Report

Hayden Lake Irrigation District

Hayden Lake Irrigation District presents the 2011 Water Quality Report. This report is designed to inform you about the quality of water and service we deliver to you every day. Our goal is to provide you, our customers, with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve and protect our water resources. This report covers the period from January to December 2011.

The District wants to bring to your attention in 2011 we did experience one **violation** of drinking water standards. A full explanation of this violation can be found at the end of this report. We value our customers and if you have any questions concerning your water or the District, please contact Alan Miller, District Administrator at (208) 772-2612. If you wish to learn more, please attend any of our regularly scheduled Board meetings held on the first and third Tuesday of each month at 6:00 p.m. Meetings are held at the District office located at 2160 West Dakota Avenue in Hayden.

Our water source is the Rathdrum-Prairie Aquifer. This Aquifer serves many wells in the surrounding area and is a reliable source of drinking water. Please help to maintain its quality through wise use of fertilizers and pesticides; by recycling used oil and other chemicals, and maintaining septic systems. These steps benefit all of the residents who depend on this source.

The District relies on our customers to help us prevent harmful contamination of the drinking water system. You can help us accomplish this by completing the annual testing of all backflow prevention assemblies on your property. Annual testing of all backflow assemblies by a certified tester is required by the District and the state of Idaho. Our website has a list of testers meeting District requirements.

The District continually takes steps to ensure the water quality is protected. Because we do not chlorinate (disinfect) our water we have some of the most stringent requirements of ourselves and contractors working on our water system to prevent contamination. We continue to refine those requirements to maintain water quality. The District prefers to provide high quality water to its users without disinfection or other treatment. To accomplish this we continue to refine how we operate the water system to protect water quality.

Hayden Lake Irrigation District routinely monitors for contaminants in your drinking water in accordance with State and Federal rules. All drinking water, *including bottled water*, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate the water poses a health risk. More information about contaminants and their potential health effects can be obtained by calling the **Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 or researching on line at: www.epa.gov/safewater**

The following tables describe any contaminants detected in our water within the past 5 years. If multiple samples are taken during a five year period, only the most recent results will be shown. The District samples for many additional contaminants; however they were not detected in laboratory analysis of the water samples. Terms used are explained following the tables.

Contaminant	Date	Well # 1	Wells # 2 & 3	Well #4	MCL	MCLG	Violation	Typical source of Contaminant
Nitrate	1-18 to 7-26 2011*	ND	ND	2.26	10	10	No	Runoff from Fertilizer; Leaching from Septic Tanks; Sewage; Erosion of Natural Deposits
Arsenic	1-18 to 7-26 2011*	ND	ND	0.003	0.10	0	No	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes
Sodium	5-24 & 6-24-2010	3.04	2.46		N/A	N/A	No	Erosion of Natural Deposits; Discharge from Fertilizer and Aluminum Factories
Volatile Organics	7-26-2011 Note 2			All ND	Various	Various	No	Byproducts of industrial processes and petroleum production. Can also come from gas stations, urban storm water runoff, and septic systems.
Radiological Gross Alpha	Quarterly Note: 3			ND to 3.4	15	0	No	Erosion of Natural Deposits
Radiological Uranium	Quarterly Note: 3			4 to 5 (ug/l)	30 (ug/l)	0	No	Erosion of Natural Deposits

*Wells monitored for nitrate and arsenic on the following dates: Well #1: 1-18-2011; Wells #2&3: 5-13-11; Well # 4: 7-26-11

Note 2: Volatile Organic monitoring completed at Well # 4: 2-14-2008, 6-11-2008, 8-28-2008, 11-10-2008, 3-2-2009, 2-11-2010, 7-26-11 all results were ND

Note 3: Radiological monitoring completed at Well # 4: 11-29-2006, 2-1-2007, 4-25-2007, 9-6-2007

Contaminant	Dates	Location	Detected	Violation	Typical Source of Contaminant
Total Coliform Bacteria	10-13-2011	Water Tower	Presence	Yes	Naturally Present in the Environment

Original sample present; Follow up coliform sampling results (4 taken within 24 hours) were (1) present out of (4) samples of coliform bacteria. A full explanation of this event is found at the end of this report.

Lead and copper sampling is conducted every three years; these are the results of our most recent sampling:

Contaminant	# Samples	Date	Our water 90 th percentile results	Range of detection	Action Level	MCLG
Lead	20	7-28 to 8-12-2010	ND (ppb)	ND to 4 (ppb)	15 (ppb)	0 (ppb)
Copper	20	7-28 to 8-12-2010	0.05 (ppm)	ND to 0.06 (ppm)	1.3 (ppm)	1.3 (ppm)

The sample results summarized in the following table were analyzed for water quality parameters on August 23, 2011. These contaminants are listed as secondary by EPA, and are not assigned a health hazard. They do have an affect on water taste, and are useful if individual home softeners are used. Additionally, manganese was sampled; it was not detected in the laboratory analysis. All units are mg/L, except; pH which has no units; hardness which is expressed as mg/L calcium carbonate equivalent; and the Langier Index which has no units, but is an indication of corrosivity. Zero Langier is neutral, negative numbers are tending corrosive, positive numbers are tending towards depositing minerals. Hardness ranges from Moderately Hard (75 to 150) to Hard (150 to 300). Total Organic Carbon represents a potential bacterial food source and Heterotrophic Plate Count is an alternative bacterial test; both of these are non-regulated which the District uses to better evaluate the water quality. Results do not indicate a concern at this time. We will repeat this sampling in 2013.

Well	Calcium	Magnesium	Hardness	pH	Alkalinity	Iron	Dissolved Solids	Langier Index	Total Organic Carbon	Heterotrophic Plate Count
1	23.3	6.56	85.1	8.3	82.8	ND	98	-0.167	ND	79
2 & 3	24.1	7.28	90.1	8.14	89.2	0.032	107	-0.283	ND	4
4	39.4	27.1	210	7.95	189	0.039	225	0.037	1.01	10

The following list explains terms you may not be familiar with, and assists in understanding the tables provided above.

- **MCL:** Maximum Contaminant Level is in milligrams per liter (mg/l) unless otherwise specified. One milligram per liter is equivalent to one part per million (ppm). Put another way, one ppm is equal to one part contaminant per one million parts drinking water. Or one penny in \$10,000.
- **MCLG:** Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **ug/L:** represents micrograms per liter, one ug/L is equivalent to one part per billion (ppb). Or one penny in \$100,000.
- **Radiological** contaminants are expressed in pico Curies per liter (pCi/L) unless otherwise specified.
- **Total Coliform** is monitored monthly by taking 7 samples from various locations in the District's water distribution system. At least two samples must show presence of coliform bacteria in order for a violation to have occurred.
- **Lead and Copper:**
 - Testing is completed at specified homes within the District
 - The 90th percentile of results is the reportable level
 - This means that 90% of all results are at or below (less than) the reported level
 - In our district the results from 20 samples consisted of one home with lead level detectable of 4 ppb and 19 homes with no detectable level of lead
 - In our district the results from 20 samples consisted of copper levels ranging from .01 ppm to .06 ppm
 - **Action Level:** is the point at which the District must take action to reduce lead or copper levels in the water
- **ND:** means non-detect; this means that the contaminant was below the laboratories ability to reliably measure that contaminant.

Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology. MCLs are set at very stringent levels, to understand the possible health effects described for many regulated contaminants; a person would have to drink 2 liters of water every day at the MCL level or greater for a lifetime to have a one-in-a-million chance of having the described health effect. 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. EPA/CDC guidelines on appropriate methods to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791). Or on line at: <http://www.epa.gov/safewater>

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. 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, wildlife and nature.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharge, oil and gas production, mining, farming or road de-icing.
- Pesticides and herbicides, which 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. With the exception of the violation explained below, the District water quality met the EPA's requirements in 2011.

Explanation of Violation

In October 2011 the District took a routine sample at its water tower. Results of this sample and some of the repeat samples were positive for coliform bacteria. The tower is located approximately 1 mile outside of the District's service area, and does not represent water quality our customers receive. All samples taken, during this time, at points representative of water customers would be receiving, were absent of coliform bacteria. Subsequent sampling at the tower indicated a very low level of contamination at this location only. Following activities to remedy the situation; flushing and re-sampling, samples taken on consecutive days were absent of coliform bacteria. This ended the violation; a letter was sent to all customers providing notification and explanation of the violation.

We have discussed the tower as a sampling point with the Idaho Department of Environmental Quality, and following several meetings with IDEQ we have eliminated the tower from our routine sample sites. This is due to its location, hydraulic position, and because the tower does not represent water received by our customers. However, we are not ignoring the water quality at the tower; we will be taking a bacterial sample at least quarterly. Due to Idaho's *Rules for Public Drinking Water Systems* this sample must be of a different type than a coliform sample; however it is a sample type (Heterotrophic Plate Count) we use in monitoring other water quality in the District and we have knowledge of how to interpret the results.

We would like to stress, the water at the tower is not representative of the water received by our customers. This is due to the remote location and hydraulic position. All samples representative of the water our customers would receive, were absent of coliform bacteria throughout 2011. The District has established a plan to monitor water quality at the tower, without creating a potential rule violation, and the associated costs of solving that potential violation.

Thank you for trusting us to provide your family with drinking water this year.

Hayden Lake Irrigation District works around the clock to provide the best water quality at every tap. We ask all our customers to help us conserve our water resource through wise use of water. We also ask that you help assist us in protecting the aquifer through wise use of fertilizers, herbicides, pesticides, maintaining septic systems and by recycling used oil and other chemicals. You can help us prevent contamination of the water system by having all backflow assemblies tested each year. This will benefit all of the residents who depend on this resource. If you wouldn't want to drink it, then please don't pour it on the ground.

Additional copies of this report are available from our office at 2160 West Dakota, by contacting us via e-mail at: district@haydenirrigation.com or from our website at: www.haydenirrigation.com.

Sincerely,

The Board and Staff at Hayden Lake Irrigation District