



ANNUAL WATER
QUALITY
REPORT

Water testing performed in 2009

Presented By:



PWS ID#: UT0018011

Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1, 2009, and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet in spite of this, we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future, but know that we will always stand behind you and the drinking water we work diligently to provide.

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

Important Health Information

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

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 or www.epa.gov/safewater/hotline/.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Pamela Gill, Assistant Manager, at 801-968-1011.

Drinking Water Source Protection Plan

The Drinking Water Source Protection Plan for Kearns Improvement District is available for your review. It contains information about source protection zones, potential contamination sources, and management strategies to protect our drinking water. Potential contamination sources common in our protection areas include residents and industries that use chemicals, fuels, fertilizers, herbicides, and pesticides, and that use, store, manufacture, or dispose of, hazardous material. Major roadways where hazardous materials are transported also pose a risk. However, our wells have a low susceptibility to potential contamination, and we have developed management strategies to further protect our sources from contamination. Please contact us at 801-968-1011 if you would like to review our source protection plan or if you have questions or concerns about it.



JVWCD also has a Drinking Water Source Protection Plan available for review. Please call 801-565-4300 if you have any questions or would like to review the plan.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.

Turn off the tap when brushing your teeth.

Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.

Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Community Participation

The Kearns Improvement District Board of Trustees holds a board meeting generally on the second Tuesday of each month at 6:30 p.m. at the District office, 5350 West 5400 South, Kearns, Utah. The public is invited to attend.



Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

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

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 by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at 800-426-4791.

Lead and Drinking 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. Kearns Improvement District 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 water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Where Does My Water Come From?

The Kearns Improvement District purchases 90 percent of the water delivered to our customers from the Jordan Valley Water Conservancy District (JVWCD), our wholesale water provider. Water sources include water from Deer Creek Reservoir and local mountain springs and wells. The water is treated at the Jordan Valley Water Treatment Plant and the Southeast Regional Water Treatment Plant. The remaining 10 percent of the water is delivered through 12 wells located in the Kearns area. Kearns Improvement District staff operate and maintain these wells.

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 table below shows only those contaminants that were detected in the water.

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.

REGULATED SUBSTANCES									
				Kearns Improvement District		Jordan Valley Water Conservancy District			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2009	15	0	6.9	4.2–6.9	10.3	ND–10.3	No	Erosion of natural deposits
Arsenic¹ (ppb)	2009	10	0	14.2	4.4–14.2	2	ND–2	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2009	2	2	0.206	0.055–0.206	0.1	ND–0.1	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters² (pCi/L)	2009	50	0	9.3	6–9.3	12.1	ND–12.1	No	Decay of natural and man-made deposits
Chlorine (ppm)	2009	[4]	[4]	NA	NA	1.4	ND–1.4	No	Water additive used to control microbes
Chromium (ppb)	2009	100	100	4	2–4	3 ³	ND–3 ³	No	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (ppb)	2005	200	200	NA	NA	7	7–7	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Di(2-ethylhexyl) Adipate (ppb)	2007	400	400	NA	NA	1	ND–1	No	Discharge from chemical factories
Dissolved Organic Carbon (ppm)	2009	TT	NA	NA	NA	2.8	1.7–2.8	No	Naturally occurring
Fluoride (ppm)	2009	4	4	1.19	0.50–1.19	1.2	0.2–1.2	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2009	60	NA	56.3	19.3–56.3	53.9	ND–53.9	No	By-product of drinking water disinfection
Mercury [inorganic] (ppb)	2008	2	2	NA	NA	0.2	ND–0.2	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Nickel (ppb)	2008	100	100	NA	NA	3.7	ND–3.7	No	Erosion of naturally occurring deposits
Nitrate (ppm)	2009	10	10	5.54	0.365–5.54	2.4	0.1–2.4	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium 226 (pCi/L)	2009	5	0	0.24	0.06–0.24	0.7	ND–0.7	No	Erosion of naturally occurring deposits
Radium 228 (pCi/L)	2009	5	0	1.8	0.84–1.8	1.3	-0.1–1.3	No	Erosion of naturally occurring deposits
Selenium (ppb)	2009	50	50	6.5	1.8–6.5	1	ND–1	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2009	80	NA	57.7	0.7–57.7	60.3	ND–60.3	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2009	TT	NA	NA	NA	2.7	0.6–2.7	No	Naturally present in the environment
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	NA	NA	100	NA	No	Soil runoff
Turbidity¹ (NTU)	2009	TT	NA	0.5	0.05–0.5	0.42	0.02–0.42	No	Soil runoff
Uranium (ppb)	2009	30	0	NA	NA	0.6	ND–0.6	No	Erosion of natural deposits

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2006	1.3	1.3	0.392	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2006	15	0	5	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES ⁵

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Kearns Improvement District		Jordan Valley Water Conservancy District		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Chloride (ppm)	2009	250	NA	NA	NA	65	12–65	No	Runoff/leaching from natural deposits
Color (Units)	2009	15	NA	NA	NA	60	ND–60	No	Naturally occurring organic materials
Iron (ppb)	2008	300	NA	NA	NA	350	ND–350	No	Leaching from natural deposits; Industrial wastes
pH (Units)	2009	6.5–8.5	NA	NA	NA	8.53	6.96–8.53	No	Naturally occurring
Sulfate (ppm)	2009	250	NA	100	26–100	79	3–79	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2009	500	NA	1,010	537–1,010	280	31–280	No	Runoff/leaching from natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Kearns Improvement District		Jordan Valley Water Conservancy District		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Bromodichloromethane (ppb)	2003	11.7	5.2–11.7	NA	NA	By-product of drinking water disinfection
Chloroform (ppb)	2003	45	27.7–45	NA	NA	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2003	2.1	0.8–2.1	NA	NA	Herbicide used on grass, weeds, fruit, and vegetable crops
Sodium (ppm)	2009	102	32.5–102	19.6	3.7–19.6	Erosion of naturally occurring deposits and runoff from road deicing

¹The amount detected was sampled at the well. Well water is blended in the distribution system; the blended amount detected was 2.7 ppb, well below the MCL.

²The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

³Sampled in 2008.

⁴Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

⁵Secondary substances are regulated to protect against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures (e.g., tubs and sinks) and of clothing during laundering. There are no adverse health effects expected with the exceedance of a secondary MCL (SMCL).

Definitions

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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 allow for a margin of safety.

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.

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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).

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