Bear River Water Conservancy District
2013
Annual Drinking Water Quality Report

BRWCD-Beaver Dam #UTAH02002

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve our services and protect our water resources. We are committed to ensuring the quality of your water. Our water sources are from the Sleepy Hollow Spring and the East and West Lower Beaver Springs.

We are pleased to report that our drinking water meets federal and state requirements. If you have any questions about this report or concerning your water utility, please contact **Voneene Jorgensen, General Manager at the BRWCD at 435- 723-7034.** We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on **the fourth Wednesday of each month at 7:00 p.m. in the BRWCD District Office Conference Room at 102 West Forest Street, Brigham City, Utah.**

Bear River Water Conservancy District routinely monitors for constituents in our drinking water in accordance with the Federal and Utah State laws. The following tables show the results of our monitoring for the period of **January 1st to December 31st, 2013.** 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 that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

The Drinking Water Source Protection Plan: The Drinking Water Source Protection Plan for Bear River Water Conservancy District's Beaver Dam Culinary Water System 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 identified in our protection areas are septic tanks, herbicides, fertilizers, cattle grazing, sheep grazing and open gravel pit mining. We have developed management strategies to protect our sources from any contamination. Please contact us at 435-723-7034 if you would like to review our source protection plan or if you have questions or concerns about our source protection plan.

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:
Non-Detects (ND) **-** laboratory analysis indicates that the constituent is not present.

ND/Low - High **-** For water systems that have multiple sources of water, the Utah Division of Drinking Water has given water systems the option of listing the test results of the constituents in one table, instead of multiple tables. To accomplish this, the lowest and highest values detected

in the multiple sources are recorded in the same space in the report table.

Parts per million (ppm) or Milligrams per liter (mg/l) **-** one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter (ug/l) **-** one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) **-** one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) **-** one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

Picocuries per liter (pCi/L) **-** picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) **-** measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) **-** million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) **-** nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Treatment Technique (TT) **-** (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level (MCL) **-** (mandatory language) The “Maximum Allowed” (MCL) is 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.

Maximum Contaminant Level Goal (MCLG) **-** (mandatory language) The “Goal”(MCLG) 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.

Date- Because of required sampling time frames i.e. yearly, 3 years, 4 years and 6 years, sampling dates “May” seem out of date.
Waivers (W) **-** Because some chemicals are not used or stored in areas around drinking water sources, some water systems have been given waivers that exempt them from having to take certain chemical samples. These waivers are also tied to Drinking Water Source Protection Plans.

TEST RESULTS

The data presented in this report is from the most recent testing done in accordance with the regulations.

Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform Bacteria	N	ND	NA	0	presence of coliform bacteria in 5% of monthly samples	2013	Naturally present in the environment
Fecal Coliform and *E. coli*	N	ND	NA	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	2013	Human and animal fecal waste
Turbidity for Ground Water	N	.09-3.7	NTU	NA	5	2012	Soil Runoff
Turbidity for Surface Water	N	NA	NTU	NA	0.5 in at least 95% of the samples and must never exceed 5.0	NA	Soil Runoff (highest single measurement & the lowest monthly percentage of samples meeting the turbidity limits)
RADIOACTIVE CONTAMINANTS							
Alpha Emitters Gross Alpha	N	2.5	pCi/1	0	15	2013	Erosion of natural deposits
Radium 228	N	0.53	pCi/1	0	5	2013	Erosion of natural deposits

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Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
INORGANIC CONTAMINANTS							
Antimony	N	ND	ppb	6	6	2012	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	N	5.9	ppb	NA	10	2013	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Asbestos	W		MFL	7	7		Decay of asbestos cement water mains; erosion of natural deposits
Barium	N	48-134	ppb	2000	2000	2012	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	N	ND	ppb	4	4	2012	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium	N	ND	ppb	5	5	2012	Corrosion of galvanized pipes, erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	N	ND	ppb	10	10	2012	Discharge from steel and pulp mills; erosion of natural deposits
Copper	N	0.683	ppm	1.3	AL=1300	2013	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
Cyanide	N	ND	ppb	200	200	2012	Discharge from steel/metal factories; discharge from plastic

							and fertilizer factory
Fluoride	N	.09-1.5	ppm	4000	4000	2012	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Lead a. 90% result b. # of sites that exceed AL	N	a. 1.8 b. 0	ppb	0	AL=15	2013	Corrosion of household plumbing systems; erosion of natural deposits
Mercury	N	ND	ppb	0	2	2012	Erosion of natural deposits; discharge from refineries and
Nitrate (as Nitrogen)	N	.4	ppm	10	10	2013	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	N	ND	ppb	1000	1000	2012	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	.0026-.0034	ppm	50	50	2012	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Sodium	N	48.6-52	ppm	No MCL or MCLG has been established by EPA		2012	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	44-52	ppm	500*	500*	2012	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
Thallium	N	ND	ppb	2	2	2012	Leaching from ore-processing sites; discharge from electronics; glass and drug factories
TDS (Total Dissolved Solids)	N	484-548	ppm	1000**	1000**	2012	Erosion of natural deposits

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Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES							
2,4-D	N	ND	ppb	70	70	2012	Runoff from herbicide used on row crops
2,4,5-TP (Silvex)	N	ND	ppb	50	50	2012	Residue of banned herbicide
Alachlor	N	ND	ppb	0	2	2012	Runoff from herbicide used on row crops
Atrazine	N	ND	ppb	3	3	2012	Runoff from herbicide used on row crops
Benzo(a)pyrene (PAHs)	N	ND	ppt	0	200	2012	Leaching from linings of water storage tanks and distribution lines
Carbofuran	N	ND	ppb	40	40	2012	Leaching from soil fumigant used on rice
Chlordane	N	ND	ppb	0	2	2012	Residue of banned termiticide
Dalapon	N	ND	ppb	200	200	2012	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate	N	ND	ppb	400	400	2012	Leaching from PVC plumbing systems; discharge from chemical factories
Di (2-ethylhexyl) phthalates	N	ND	ppb	0	6	2012	Discharge from rubber and chemical factories
Dibromochloro-propane	N	W	ppt	0	200		Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples and orchards
Dinoseb	N	ND	ppb	7	7	2012	Runoff from herbicide used on soybeans and vegetables
Dioxin (2,3,7,8-TCDD)	N	W	ppq	0	30		Emissions from waste incineration and other combustion; discharge from chemical factories
Diquat	N	W	ppb	20	20		Runoff from herbicide use
Endothall	N	W	ppb	100	100		Runoff from herbicide use
Endrin	N	ND	ppb	2	2	2012	Residue of banned

							insecticide
Ethylenedibromide	N	W	ppt	0	50		Discharge from petroleum refineries
Glyphosate	N	W	ppb	700	700		Runoff from herbicide use
Heptachlor	N	ND	ppt	0	400	2012	Residue of banned termiticide
Heptachlor epoxside	N	ND	ppt	0	200	2012	Breakdown of heptachlor
Hexachloro-benzene	N	ND	ppb	0	1	2012	Discharge from metal refineries and agricultural chemical factories
Hexachloro cyclopentadiene	N	ND	ppb	50	50	2012	Discharge from chemical factories
Lindane	N	ND	ppt	200	200	2012	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	N	ND	ppb	40	40	2012	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl (Vydate)	N	ND	ppb	200	200	2012	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs (Polychlorinated biphenyls)	N	ND	ppt	0	500	2012	Runoff from landfills; discharge of waste chemicals
Pentachloro-phenol	N	ND	ppb	0	1	2012	Discharge from wood preserving
Picloram	N	ND	ppb	500	500	2012	Herbicide runoff
Simazine	N	ND	ppb	4	4	2012	Herbicide runoff
Toxaphene	N	ND	ppb	0	3	2012	Runoff/leaching from insecticide used on cotton and cattle

* If the sulfate level of a public water system is greater than 500ppm, the supplier must satisfactorily demonstrate that: a) no better water is available, and b) the water shall not be available from commercial establishments. In no case shall water having a level about 1000 ppm be used.

** If TDS is greater than 1000 ppm the supplier shall demonstrate to the Utah Drinking Water Board that no better water is available. The Board shall not allow the use of an inferior source of water if a better source is available.

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Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
VOLATILE ORGANIC CONTAMINANTS							
Benzene	N	ND	ppb	0	5	2012	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	N	ND	ppb	0	5	2012	Discharge from chemical plants and other industrial activities
Chlorobenzene	N	ND	ppb	100	100	2012	Discharge from chemical and agricultural chemical factories
o-Dichloro-benzene	N	ND	ppb	600	600	2012	Discharge from chemical and agricultural chemical factories
p-Dichloro-benzene	N	ND	ppb	75	75	2012	Discharge from chemical and agricultural chemical factories
1,2 - Dichloroethane	N	ND	ppb	0	5	2012	Discharge from chemical and agricultural chemical factories
1,1 - Dichloroethylene	N	ND	ppb	7	7	2012	Discharge from chemical and agricultural chemical factories
cis 1,2 - Dichloroethylene	N	ND	ppb	70	70	2012	Discharge from chemical and agricultural chemical factories
trans - 1.2 - Dichloroethylene	N	ND	ppb	100	100	2012	Discharge from chemical and agricultural chemical factories
Dichloromethane	N	ND	ppb	0	5	2012	Discharge from pharmaceutical and chemical factories
1,2 - Dichloropropane	N	ND	ppb	0	5	2012	Discharge from chemical and agricultural chemical factories
Ethylbenzene	N	ND	ppb	700	700	2012	Discharge from petroleum refineries

Styrene	N	ND	ppb	100	100	2012	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloro-ethylene	N	ND	ppb	0	5	2012	Leaching from PVC pipes; discharge from factories and dry cleaners
1,1,1 - Trichloroethane	N	ND	ppb	200	200	2012	Discharge from metal degreasing sites and other factories
1,1,2 - Trichloroethane	N	ND	ppb	3	5	2012	Discharge from industrial chemical factories
Trichloroethylene	N	ND	ppb	0	5	2012	Discharge from metal degreasing sites and other factories
Toluene	N	ND	ppb	1000	1000	2012	Discharge from petroleum factories
Vinyl Chloride	N	ND	ppb	0	2	2012	Leaching from PVC piping; discharge from plastics factories
Xylenes	N	ND	ppb	10000	10000	2012	Discharge from petroleum factories; discharge from chemical factories

DISINFECTION BY-PRODUCTS

TTHM Total Trihalomethanes	N	5.8	Ppb	0	80	2013	By-product of drinking water disinfection
Haloacetic Acids	N	ND	ppb	0	60	2013	By-product of drinking water disinfection
Chlorine	N	.51	ppm	4	4	2013	By-product of drinking water disinfection

Cross Connection: The District has a cross connection plan. There are many connections to our water distribution system. When connections are properly installed and maintained, the concerns are minimal. However, unapproved and improper piping changes or connections can adversely affect not only the availability, but also the quality of the water. A cross connection may let polluted water or even chemicals mingle into the water supply system when not properly protected. This not only compromises the water quality but can also affect your health. So, what can you do? Do not make or allow improper connections at your home. Even that unprotected garden hose lying in the puddle next to the driveway is a cross connection. The unprotected lawn sprinkler system after you have fertilized or sprayed is also a cross connection. When the cross connection is allowed to exist at your home, it will affect you and your family first. If you would like to learn more about helping to protect the quality of our water, call us for further information about ways you can help.

The Beaver Dam Culinary Water System contains an arsenic treatment facility that removes the arsenic in the raw water and assures a water quality that meets EPA's standard for arsenic. However, the water does contain low levels of arsenic. EPA's standard balances the current

understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA 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.

The District constantly monitors the water supply for various constituents. All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are man- made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance cycle ended on September 30, 2012, we failed to test for radionuclides. Even though this is not an emergency, as our customers, you have a right to know what happened and what we did to correct these situations. The radionuclides tests have been taken as scheduled thereafter and have met drinking water standards.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level 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 means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If you have further questions please feel free to call the BRWCD Office at 435-723-7034 between the hours of 8:30 a.m. and 5:00 p.m. weekdays. In case of an emergency after hours or on weekends, please call our **System Operator, Robert Phippin 435-230-0731.**
We at The Bear River Water Conservancy District word hard to provide top quality water to every tap and are available around the clock in cases of emergency. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Thank you for allowing us to continue providing your companies and families clean quality water this year. It is a pleasure to serve you.