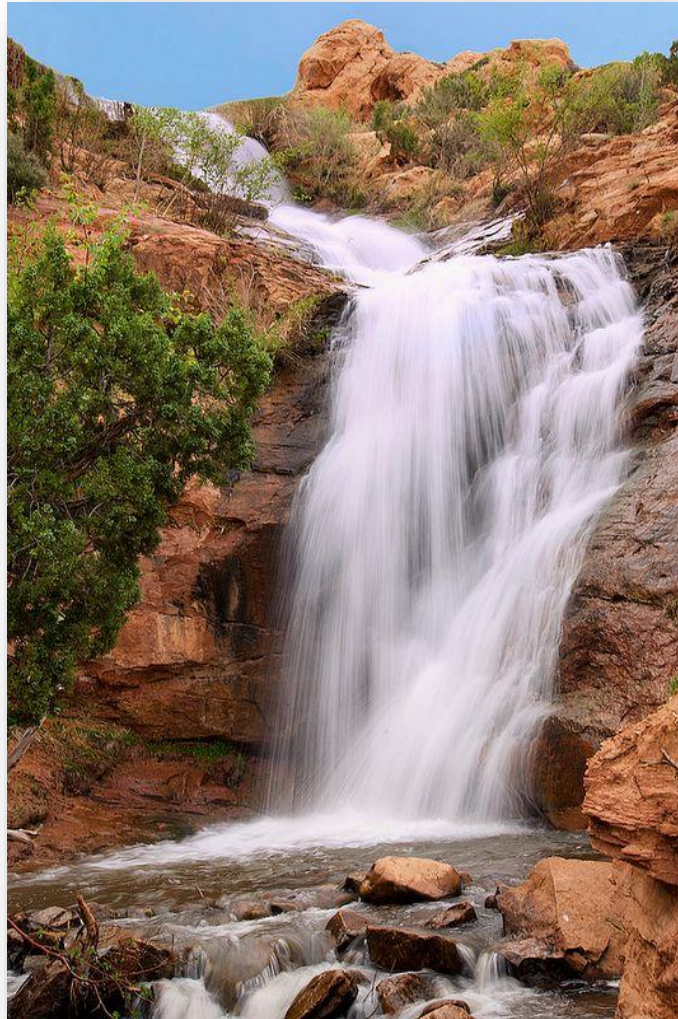




Grand Water & Sewer Service Agency



Annual Report 2016

President's Message

Grand Water & Sewer Service Agency is pleased to present its Annual Report for the year 2015. It is hoped that this synopsis of the Agency's activities in 2016 will give all those interested a better understanding of the functions the Agency performs and the issues it faces.

The Board and Staff of the Agency appreciate the opportunity to serve the citizens of Spanish Valley.

Dan Pyatt

President

Board Members

GWSSA

Dan Pyatt, President

Gary Wilson, V. President

Brian Backus, Operating Comm.

Mike Holyoak, Operating Comm.

Rex Tanner, Operating Comm.

Rick Thompson, Operating Comm.

Dale Weiss, Operating Comm.

Kyle Bailey

Lynn Jackson

Jerry McNeely

Preston Paxman

Tom Stengel

SVWSID

Gary Wilson, Chairman

Tom Stengel, Vice Chair

Dale Weiss, Treasurer

Mike Holyoak, Clerk

Rick Thompson

GCSSWD

Gary Wilson, Chairman

Mike Holyoak, Vice Chair

Kyle Bailey

Lynn Jackson

Rick Thompson

GCWCD

Dan Pyatt, Chairman

Jerry McNeely, Vice Chair

Brian Backus

Preston Paxman

Rex Tanner

Project and Program Report

Equipment Program

A total of 292 hours of equipment time was used in 2016. Average vehicle mileage was 10,533.

Wastewater Agreement

The Agency negotiated an Interlocal Agreement with the City of Moab for the construction of a \$12.5M regional wastewater treatment plant. Construction began in December and should be complete by the fall of 2018.

GWSSA Building Improvements

The GWSSA building improvement project, initiated in 2014, was completed in December

Water Master Plan

Sunrise Engineering completed the 40-year Culinary Water Master Plan. The plan includes culinary water system upgrades through Rural Development. The first draft of the Preliminary Engineering Report for the \$5.3M culinary water project was completed in 2016 with the final report and application for funding to be submitted in 2017.

Chlorination System

Both culinary water chlorination systems were replaced with new, more efficient systems.

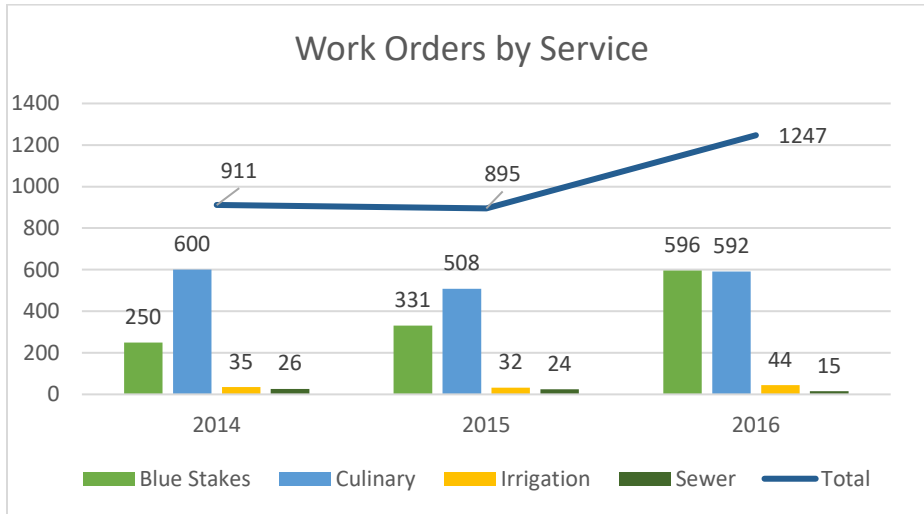
SCADA Upgrades

The SCADA system continued to be upgraded to improve the monitoring and control of our systems.

Agency Manager

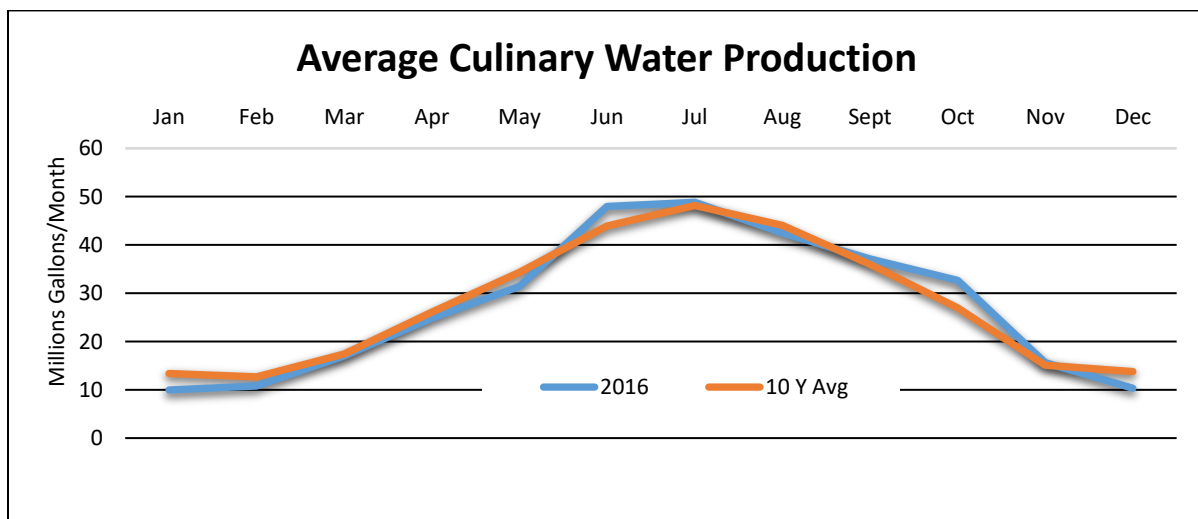
Mark Sovine retired and was replaced by Art Wollenweber as Agency Manager.

Operator Hours Tracking by Service



Culinary Water System 2016 Culinary Water Production

	Production 2015	Production 2016
January	10,178,000	9,959,000
February	9,548,000	10,797,000
March	18,574,000	16,989,000
April	28,416,000	24,806,000
May	26,706,000	31,427,000
June	38,492,000	47,966,000
July	41,027,000	48,836,000
August	42,582,000	42,451,000
September	31,625,000	37,083,000
October	24,955,000	32,687,000
November	12,558,000	15,633,000
December	11,889,000	10,338,000
TOTALS	296,550,000	328,972,000
Monthly Average	24,712,500	27,414,333



Culinary Water Power Cost

Water Produced 328,972,000 gal. or 1009.58 AF

Power Costs \$0.18 per 1000 gal. or \$58.37 per AF

Historical Power costs per 1,000 gallons:

<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
\$0.23	\$0.24	\$0.20	\$0.18

Culinary Water System (Cont'd)

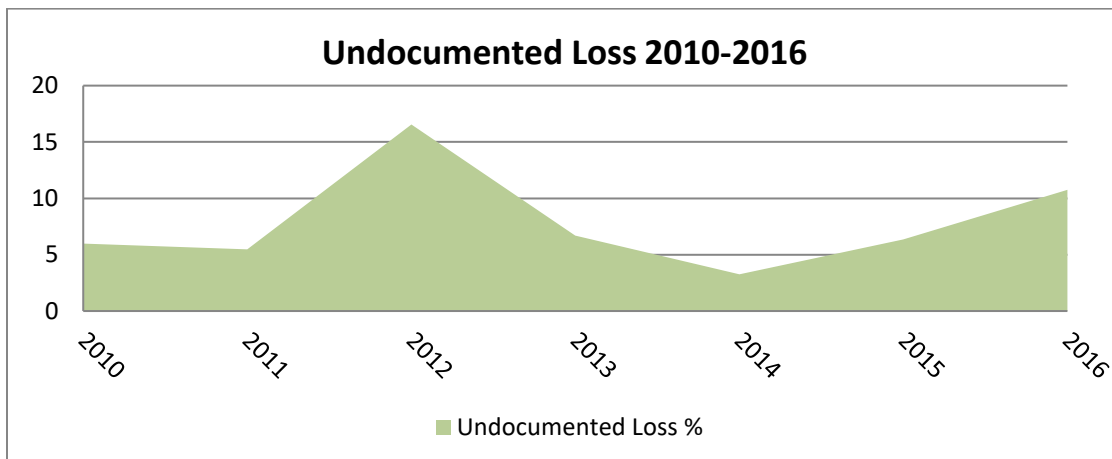
2016 Culinary Water Metered Use

Month	Gallons 2015	Gallons 2016
January	8,222,000	9,081,000
February	8,294,000	8,125,000
March	9,216,000	11,505,000
April	28,687,000	19,346,000
May	23,357,000	24,523,000
June	32,647,000	40,545,000
July	34,952,000	43,360,000
August	40,249,000	41,915,000
September	38,357,000	38,182,000
October	27,593,000	26,427,000
November	11,513,000	17,392,000
December	9,634,000	9,008,000
Total	272,721,000	289,409,000
Monthly Average	22,726,750	24,117,417

Water Audit

2016 Metered Use	289,409,000	gallons
Water in Storage	4,000,000	gallons
2016 Production	328,972,000	gallons
2016 Lost water	35,563,000	gallons
Documented Loss	485,453	gallons
Undocumented Loss	35,077,547	gallons
% of Undocumented Loss	10.66%	

Lost water due to leakage, fire flows, un-metered use and meter malfunction.



Culinary Water System (Cont'd)

Compliance with Safe Drinking Water Act

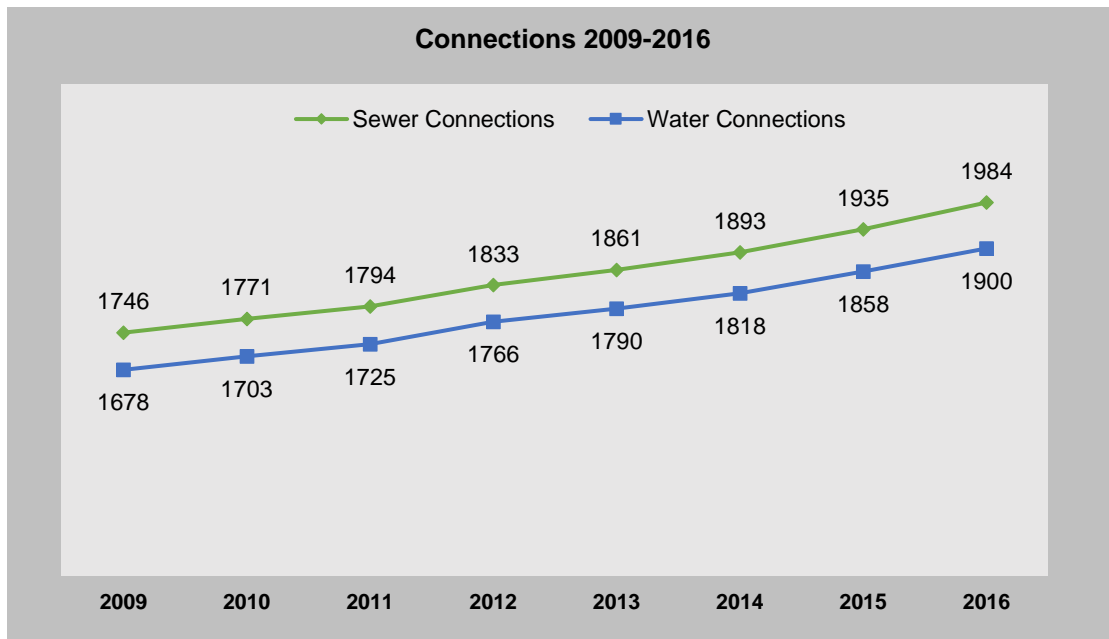
2016 saw no violations of the Safe Drinking Water Act.

Consumer Confidence Report

The 2016 Consumer Confidence Report is included in *Appendix A*.

System Growth

	Water	Sewer
New Residential Connections	38	45
New Commercial Connections	2	2
New MDU Connections	2	2
Total Residential Connections	1765	1794
Total Commercial Connections	120	129
Total MDU Connections	15	16
Total 2016 Connections	1900	1984
Average Active Connections/Month	1793	1894
Average % of Connections Active	94%	96%
2016 System Percent Growth	2.3%	2.5%



Ken's Lake Irrigation System

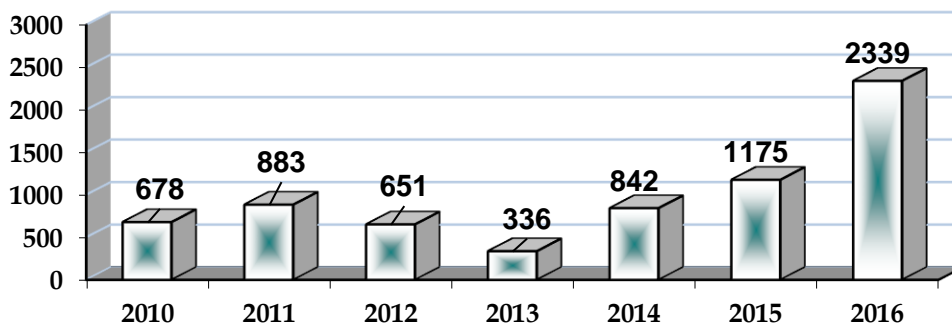
Estimate of 2016 Ken's Lake Seepage

Amount in storage at end of 2015	1408 AF
Amount diverted to Ken's Lake	5321* AF
Amount delivered to Irrigation pipeline	2390** AF
Evaporation Estimate	258 AF
Amount in storage at end of 2016	1742 AF
Estimated seepage	2339 AF

*Note – Data provided by DWR is under investigation for accuracy by DWR as of the time of this report

**Note – Estimate for one month of 2016 season. Outflow meter reset in March/April.

Estimated Seepage in AF 2010-2016



Ken's Lake Water Diverted

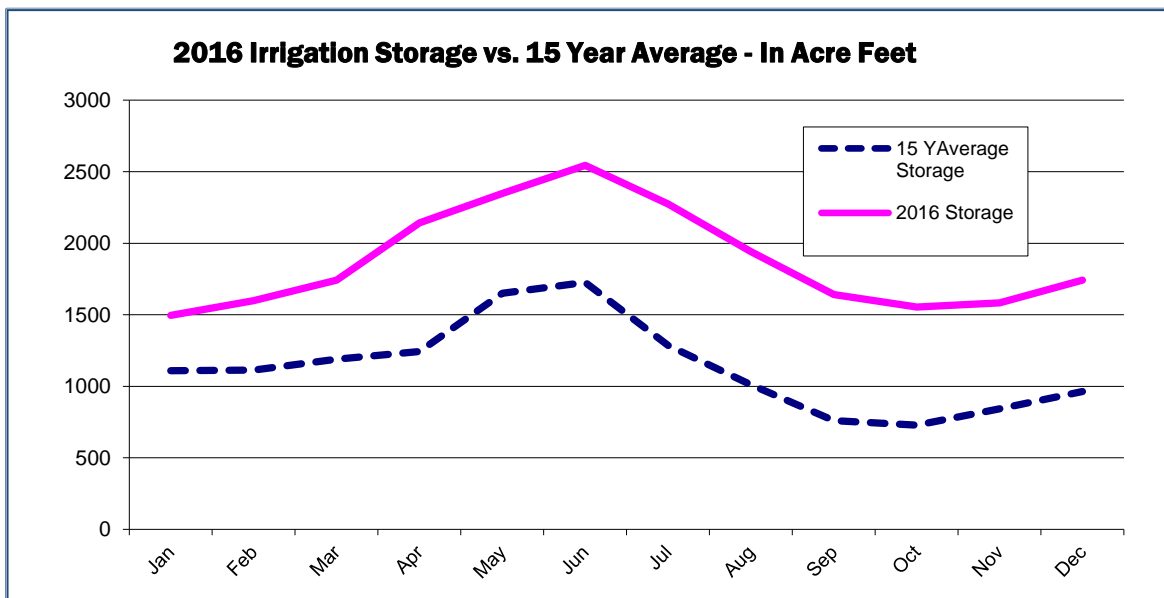
Month	15 Year Average	Diverted 2016	% of Average
	AF	AF	
January	194	153	79%
February	138	175	127%
March	177	258	146%
April	382	755	197%
May	942	911	97%
June	773	758	98%
July	349	887	254%
August	211	461	218%
September	197	300	152%
October	229	278	121%
November	192	208	108%
December	153	176	115%
Total	3937	5320	135%

Note: Jan, Feb, and Dec. 2016 meter was under frozen conditions. Data provided by DWR.

Ken's Lake Irrigation System (Cont'd)

Ken's Lake Storage

Ken's Lake Storage Vs. 15 year Average				
Month	Average	2016 Storage	% of Average	% of Capacity
	AF	AF		
January	1108	1496	135%	57%
February	1113	1598	143%	61%
March	1190	1742	146%	67%
April	1243	2142	172%	82%
May	1649	2348	142%	90%
June	1726	2544	147%	97%
July	1285	2274	177%	87%
August	1010	1942	192%	74%
September	760	1641	216%	63%
October	728	1554	213%	60%
November	844	1583	188%	61%
December	963	1742	181%	67%
Total Capacity is 2610 AF				



Review of Water Management and Conservation Plan

An updated Conservation Plan was submitted in 2014. The following five-year goals were identified:

- Goal #1 – Reduce Spanish Valley’s per capita use by ten percent (10%).
- Goal #2 – Maintain a financially viable water system.
- Goal #3 – Implement and maintain a more aggressive consumer education program.
- Goal #4 – Reduce culinary water system losses.
- Goal #5 – Collect data on non-resident population water use

Review of Water Management and Conservation Plan (Cont'd)

Goal #1 Use per Capita – Population estimate: 3750 2013-2015, 3900 2016-2017

Year	Annual Water Produced	Per Capita Daily Use
State Average		240 gpcd
2013	325,841,000 gal.	238 gpcd
2015	296,550,000 gal.	217 gpcd – 8.8% reduction
2016	328,972,000 gal	231 gpcd – 2.9% reduction
GWSSA GOAL #1		214 gpcd – 10% reduction

Water saved 238 gpcd compared to 231 gpcd – 9,821,000 gallons or 30.14 AF

Goal #2 – Maintain a financially viable water system

Water rates are reviewed annually to ensure financial viability. Residential water rates are designed to encourage conservation in an ascending block system and remained unchanged in 2016.

Residential Water Rate

\$19.50 base rate – includes no usage

0-8,000 gallons = \$0.60/1 kgal

8,001-15,000 gallons = \$1.40/1 kgal

15,001 and up = \$2.00/1 kgal

Goal #3 – Consumer education

Educational flyers are available at the Agency office. These flyers, suggesting practices for indoor and outdoor water conservation, are offered to all new customers at time of application for water service. More educational materials and message delivery options are in development.

The Agency's website – www.grandwater.org is an excellent source of conservation information and provides links to water professionals statewide. The conservation education information is updated seasonally. The Agency directs customers to the website via messages on the monthly billings.

Goal #4 – Reduce system losses

The water audit is found in the **Culinary Water System** portion of this report. The audit indicates undocumented lost water on the system of 10.66%.

Goal #5 – Collect data on non-resident population water use

Isolating the amount of water used by our residents (counted in the census) will provide information and insight to aid in targeting educational efforts and future considerations. In 2016 GWSSA separated overnight rental properties from residential users in our billing database. The overnight rental properties will be charged commercial water rates beginning in February 2017. The separation will allow all water use to be better understood by the Agency.

Outdoor watering restrictions

Watering during the heat of the day between 10:00 a.m. and 6:00 p.m. is recognized as inefficient use of outside water. The Agency shall ask all users to restrict outside watering during those times. Water users shall be informed periodically by use of mailings, billing messages, brochures, and/or news media.



Appendix A

2016 Annual Drinking Water Quality Report

Grand Water & Sewer Service Agency

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 the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water sources are from groundwater. Our water sources are George White Well #4, George White Well #5, Chapman Well and the Spanish Valley Well. The wells draw water from the Glen Canyon Aquifer.

The Drinking Water Source Protection Plan for Grand Water & Sewer Service Agency (GWSSA) is available for your review. It contains information about source protection zones, potential contamination sources and management strategies to protect our drinking water. Our sources have been determined to have a low level of susceptibility from potential contamination from sources such as septic tanks, roads, residential or industrial development. We have also developed management strategies to further protect our sources from contamination. Please contact us if you have questions or concerns about our source protection plan.

There are many connections to our water distribution system. When connections are properly installed and maintained, the concerns are very 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 homes. 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'd like to learn more about helping to protect the quality of our water, call us for further information about ways you can help.

This report shows our water quality and what it means to you our customer. If you have any questions about this report or concerning your water utility, please contact Art Wollenweber at 435-259-8121. 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 first and third Thursday of each month at 6:00 p.m. at the GWSSA office. Copies of this report are available at the GWSSA office or at www.grandwater.org. Copies will be mailed to customers upon request.

GWSSA routinely monitors for constituents in our drinking water in accordance with the Federal and Utah State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st,

2016. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

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.

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

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.

Maximum Contaminant Level (MCL) - 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) - 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 outdated.

TEST RESULTS

TEST RESULTS							
Contaminant	Violation Y/N	Level Detected ND/Low- High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination

Microbiological Contaminants							
Turbidity for Ground Water	N	< 1	NTU	N/A	5	2016	Soil runoff
Inorganic Contaminants							
Arsenic	N	< 1	ppb	0	10	2016	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	N	29-50	ppb	2000	2000	2016	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	ND-4	ppb	100	100	2016	Discharge from steel and pulp mills; erosion of natural deposits
Copper a. 90% results b. # of sites that exceed the AL	N	a. 55 b.0	ppb	1300	AL=1300	2014	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	186-200	ppb	4000	4000	2016	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead a. 90% results b. # of sites that exceed the AL	N	a. 1 b.0	ppb	0	AL=15	2014	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	300-500	ppb	10000	10000	2016	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	1 - < 2	ppb	50	50	2016	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium	N	9-18	ppm	None set by EPA	None set by EPA	2016	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	46-74	ppm	1000	1000	2016	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
TDS (Total Dissolved solids)	N	120-268	ppm	2000	2000	2016	Erosion of natural deposits

Chlorine	N	61	ppb	4000	4000	2016	Water additive used to control microbes
Radioactive Contaminants							
Alpha emitters	N	ND	pCi/l	0	15	2012	Erosion of natural deposits
Radium 228	N	ND	pCi/l	0	5	2012	Erosion of natural deposits

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. GWSSA 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 <http://www.epa.gov/safewater/lead>.

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water is safe at these levels.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man-made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. 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.

MCLs 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. 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 can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. 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).

We at GWSSA work around the clock to provide top quality water to every tap. 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.