



# Grand Water & Sewer Service Agency



## Annual Report 2009

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## Introduction

Grand Water & Sewer Service Agency is pleased to present its Annual Report for the year 2009. It is hoped that this synopsis of the Agency's activities in 2009 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 Grand County and Spanish Valley.

*Dan Pyatt*  
President

## Recap of 2009 Board Activities

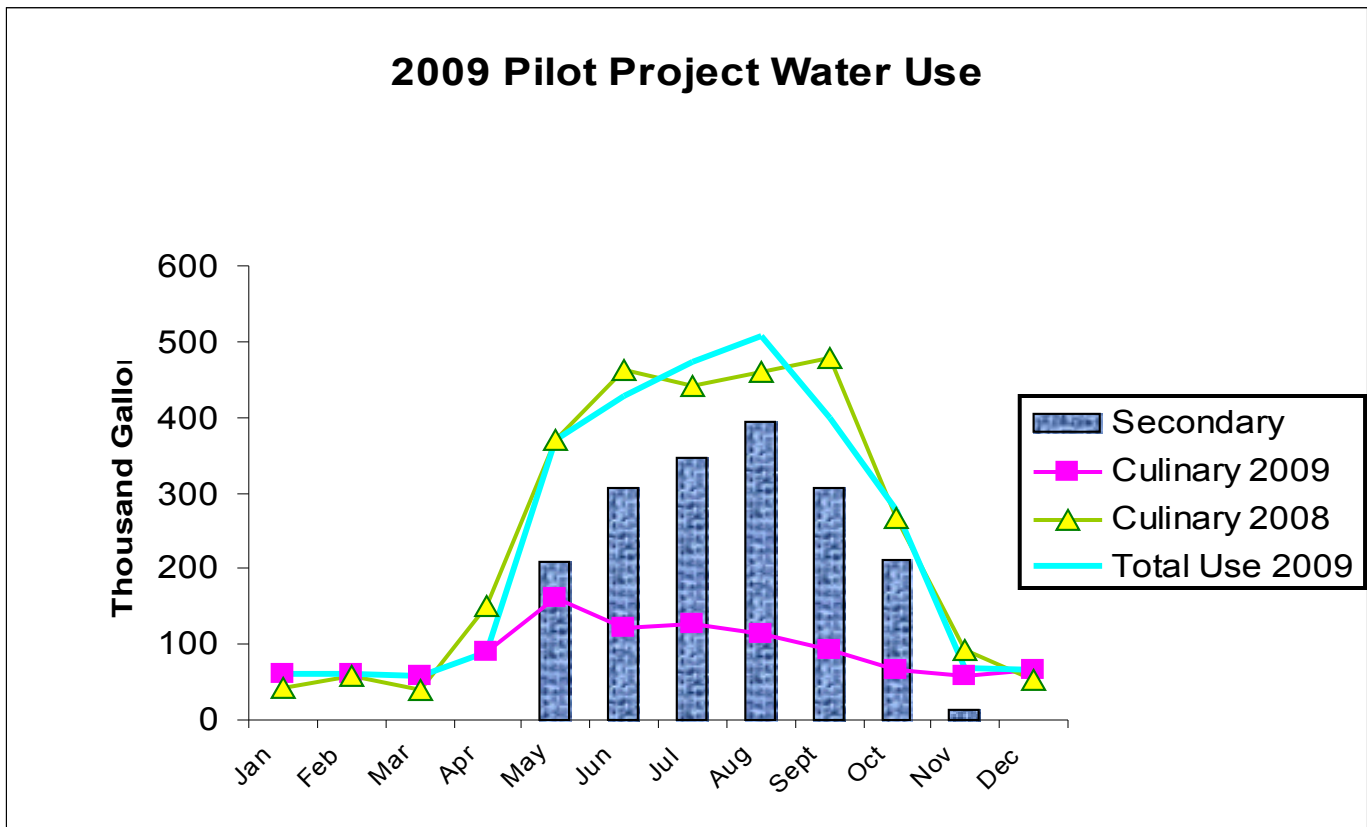
- January 8** ♦ Agency formally adopts mission statement: The Mission of Grand Water & Sewer Service Agency is: to utilize our expertise, knowledge, experience, and long range planning to secure and maximize the resources to protect our community's health and welfare by providing culinary water, irrigation water and wastewater collection services with a commitment to efficiency, sustainability, safety, and public awareness.
- January 22** ♦ The board approves the "Water Rights Purchase, Lease-Purchase, and Security Agreement" for the Beeman water rights.
- February 5** ♦ The board approves Agency drug abuse and testing policy changes to include post-accident and pre-employment testing.
- February 19** ♦ The Beeman Rd. secondary water pilot project receives board approval.
- March 5** ♦ Public hearing on culinary water rate increase held.
- March 19** ♦ Full board meeting. Resolution 2009-03-19 Culinary Rate Increase approved by the board.
- April 2** ♦ The board approves letter to US Forest Service regarding grazing allotments on Brumley Ridge and watershed protection.
- April 16** ♦ The board approves Resolution 2009-04-16 Secondary Water Use Policy.
- May 7** ♦ James Dresslar was awarded the bid for architectural services for the conceptual design of building and site improvements.
- June 4** ♦ President Pyatt appoints new members to the Conservation Committee.
- June 24** ♦ LeGrand Bitter of the UASD presents annual board member training and legislative updates.
- July 9** ♦ SCADA improvement project awarded to Sunrise Engineering.
- July 23** ♦ 2009 Maintenance Contract awarded to CB Earthworks. Board approves commercial water/hydrant usage policy.
- August 5** ♦ SVWSID special meeting to approve the use of paper ballots for the November 2009 election.
- August 20** ♦ 2008 Audit report presented by Greg Marsing of Smuin, Rich, and Marsing.
- September 3** ♦ Lynn Jackson of the BLM spoke with the board about Ken's Lake fish habitat and drought conservation measures for irrigation users.
- September 17** ♦ The board approves CIB funding priority list.

- October 8** ♦ The board approves the final purchase agreement for the Beeman water rights. Resolution 2009-10-08 Wastewater Self Assessment passes.
- October 22** ♦ The board passes Resolution 2009-10-22-2009 Construction Standards.
- October 27** ♦ Special meeting SVWSID approval of 2009 election judges.
- November 4** ♦ Mike Holyoak, Tom Stengel, and Gary Wilson reelected to the SVWSID board.
- November 5** ♦ Resolution 2009-11-05 – Irrigation Rate Increase passes. Preliminary budget hearings held. Board approves agreement with Grand County for waterline relocation under the Pack Creek Bridge.
- November 5** ♦ Special Meeting of SVWSID 2009 election canvass
- November 19** ♦ Lawson Construction awarded bid for storage building.
- December 10** ♦ Full board meeting - 2010 budgets approved and 2009 budgets amended.

## Report on Projects

### Beeman Road Secondary Pilot Project

Residents on Beeman Rd. in Spanish Valley were invited to participate in a residential secondary water pilot project in the spring of 2009. The pilot will run for two years. As of this report there are ten residences connected to the system. The chart below details eight of the participants who connected to the system for close to the entire outdoor watering season. The project saved over 1.7 million gallons of culinary water in 2009.



### Irrigation System Improvements Loan

The GCWCD applied for a \$250,000 loan from the Division of Water Resources in 2009 to complete improvements to the irrigation system. The funding is expected in 2010. Monies will be used to reequip the Beeman well and complete a large scale irrigation meter replacement/upgrade program.

### Spanish Valley Drive Sewer Line Relocation

The 8 inch sewer collection line that runs the length of Spanish Valley Drive previously continued through the Hunt Creek subdivision. In September 2009 the line was realigned down Spanish Valley Drive. The relocation will increase capacity and reduce potential risk to homes in the subdivision.

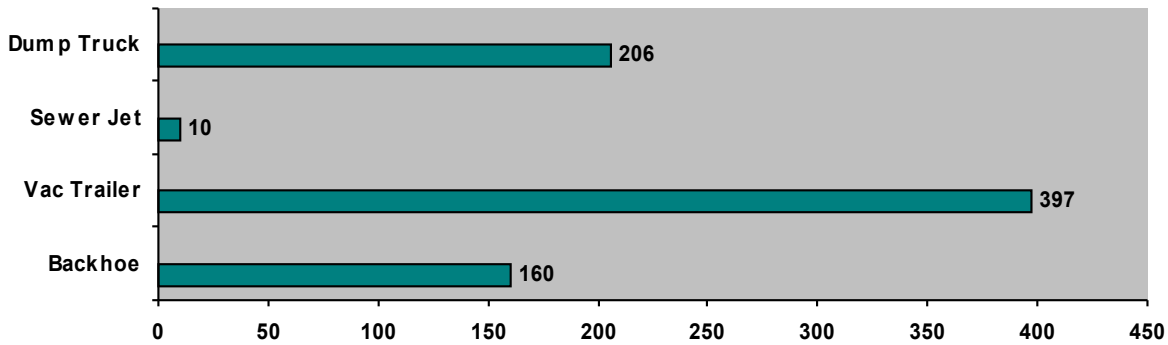
### Ken's Lake Leak Repairs

Ken's Lake repairs were completed in November of 2009. Several large sink holes were well exposed due to the low lake levels this year. The Agency's maintenance contractor, CB Earthworks made the repairs. Locations were mapped for repair tracking.

### Equipment Program

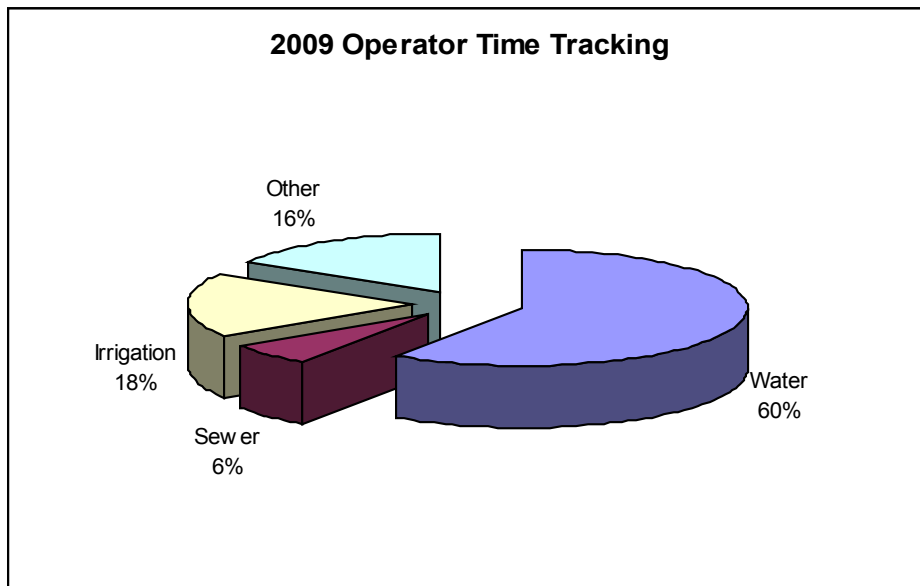
The Agency purchased and/or leased a dump truck, backhoe, sewer jet, and vac-trailer in recent years. Staff has used this equipment extensively to complete projects and maintenance that would have otherwise involved a contractor to complete.

**Equipment Hours 2009**



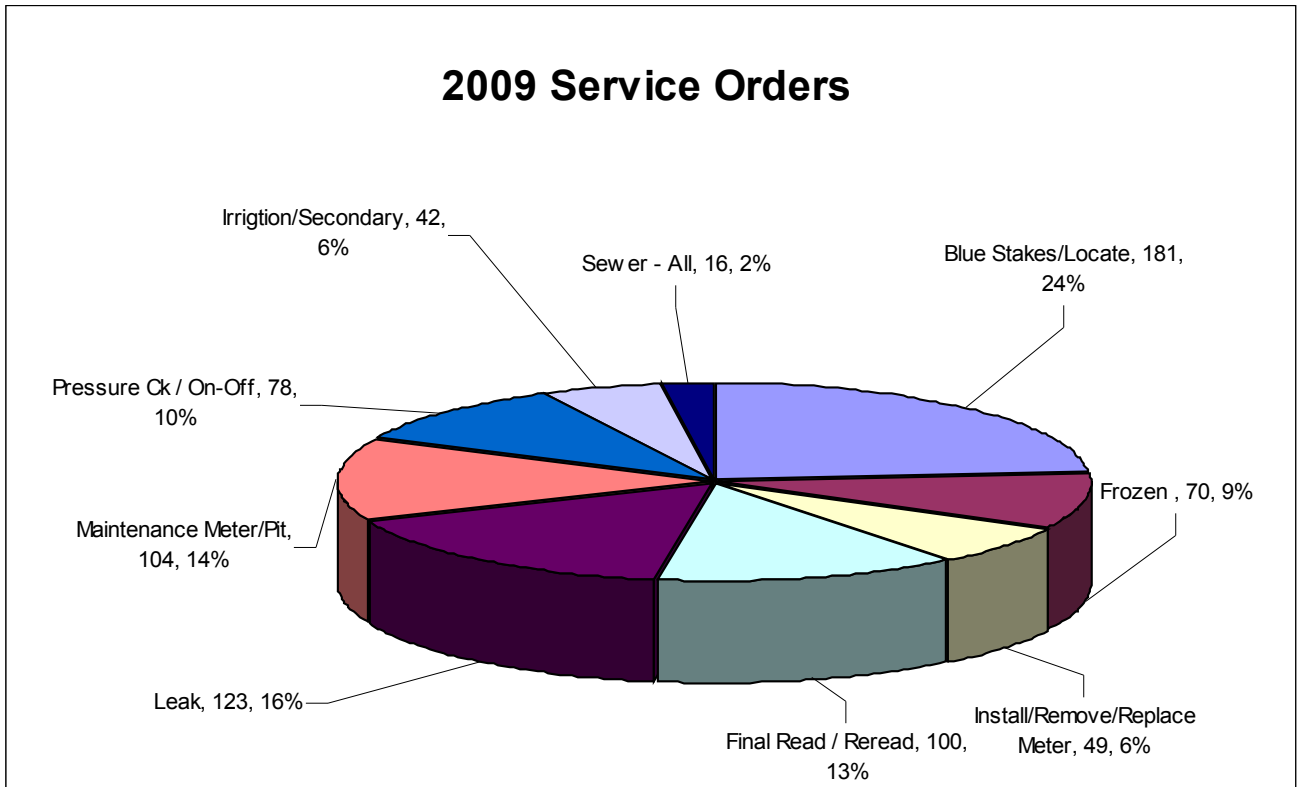
### Operator Hours Tracking by Service

Agency operations staff began tracking working hours by service type in May of 2009. The tracking helped Agency staff budget more accurately by giving an insight into how much of an operator's time is used for each service.



## Service Orders

Service order software allows the Agency to account for operator time, lost water, customer concerns, and to identify potential problems. A total of 763 service orders were completed by staff in 2009.



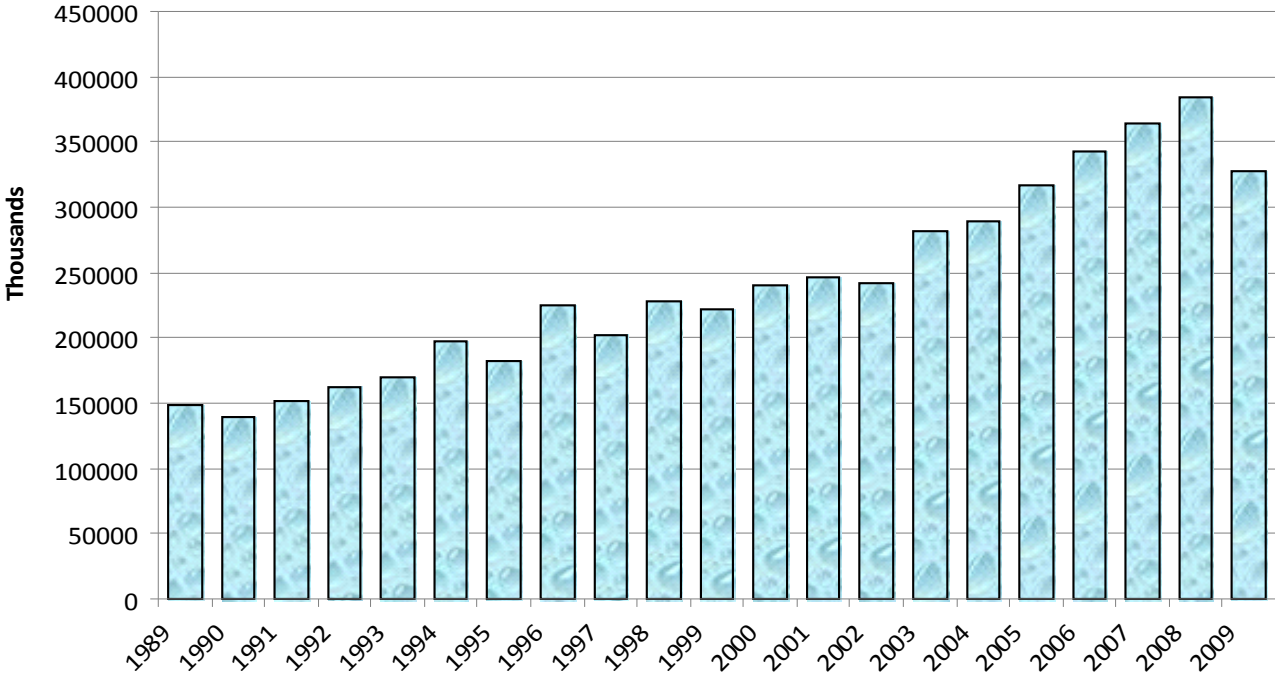
## Culinary Water System

### 2009 Culinary Water Production

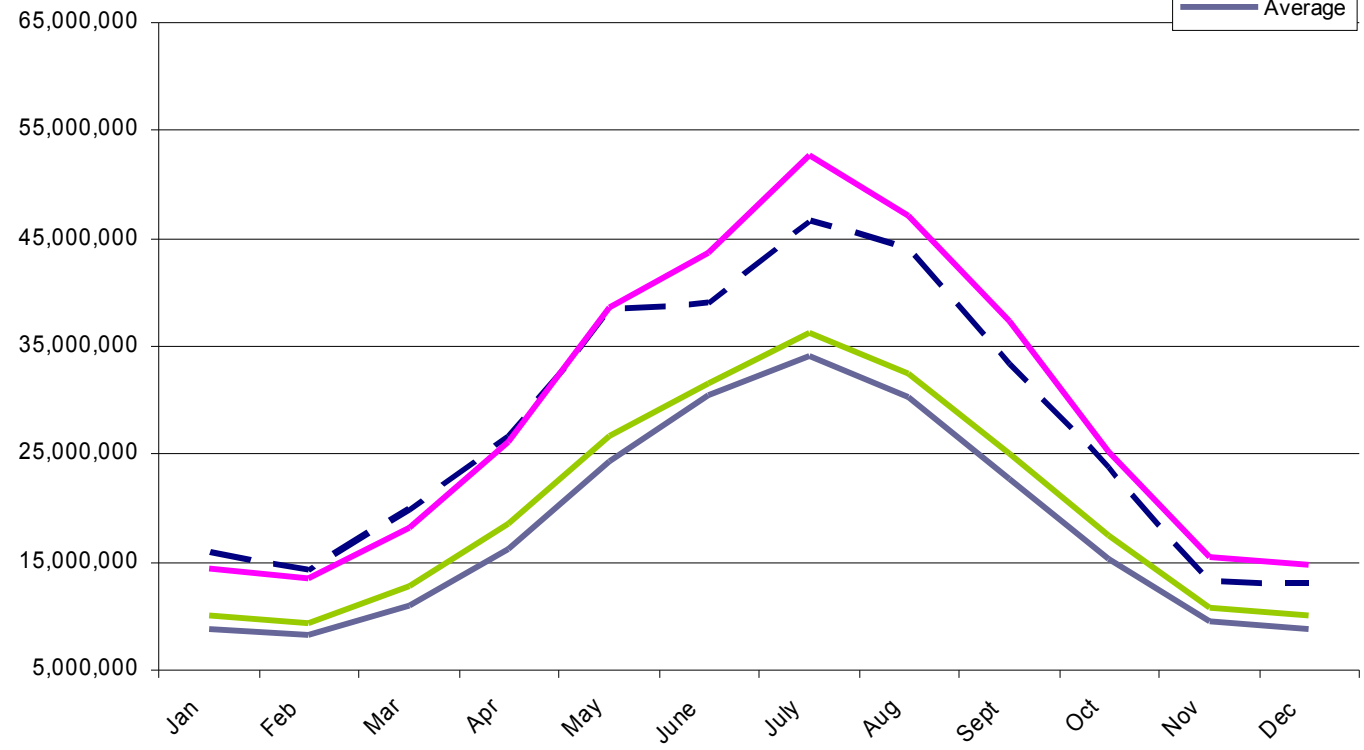
Month	Gallons 2008	Gallons 2009
January	16,056,000	15,842,000
February	14,970,000	14,254,000
March	19,481,000	19,884,000
April	27,567,000	26,716,000
May	40,908,000	38,284,000
June	48,722,000	38,981,000
July	58,282,000	46,606,000
August	53,189,000	44,026,000
September	43,648,000	33,454,000
October	29,352,000	23,870,000
November	16,669,000	13,186,000
December	16,058,000	12,892,000
<b>Total</b>	<b>384,902,000</b>	<b>327,995,000</b>
<b>Monthly Average</b>	<b>32,075,167</b>	<b>27,332,917</b>

**Culinary Water Production decreased 14.79% from 2008**

# Culinary Water Production



## Average Culinary Water Production History 2009



## Culinary Water Production Cost

2009 Water Produced 327,995,000 gallons or 1006.43 AF  
 2009 Water Production, Treatment & Power Costs \$0.23 per 1000 gallons or \$73.85 per AF

Historical Production costs per 1,000 gallons

<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
\$0.13	\$0.17	\$0.16	\$0.17	\$0.15	\$0.20

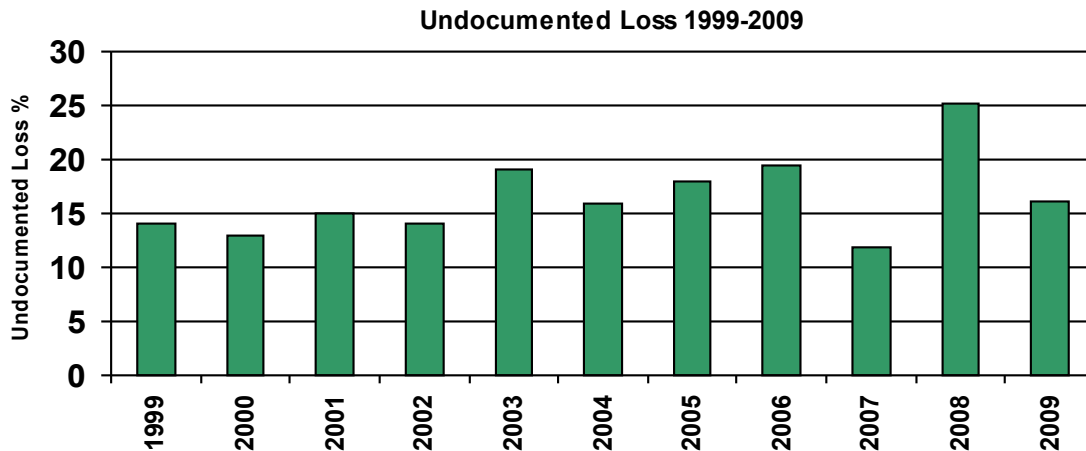
## 2009 Culinary Water System Metered Use

Month	Gallons 2008	Gallons 2009
January	8,294,000	9,449,000
February	11,530,000	9,549,000
March	6,991,000	8,931,000
April	14,729,000	17,146,000
May	31,347,000	28,202,000
June	35,441,000	34,776,000
July	40,094,000	38,839,000
August	44,547,000	38,838,000
September	44,367,000	39,209,000
October	25,350,000	23,278,000
November	11,108,000	10,696,000
December	8,070,000	9,876,000
<b>Total</b>	<b>281,868,000</b>	<b>268,789,000</b>
<b>Monthly Average</b>	<b>23,489,000</b>	<b>22,399,083</b>

## Water Audit

2009 Metered Use	268,789,000	gallons							
Water in Storage	4,000,000	gallons							
2009 Production	327,995,000	gallons							
2009 Lost water	55,206,000	gallons							
Documented Loss	3,590,825	gallons							
Undocumented Loss	51,615,175	gallons							
% of Water Lost	15.74%								

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

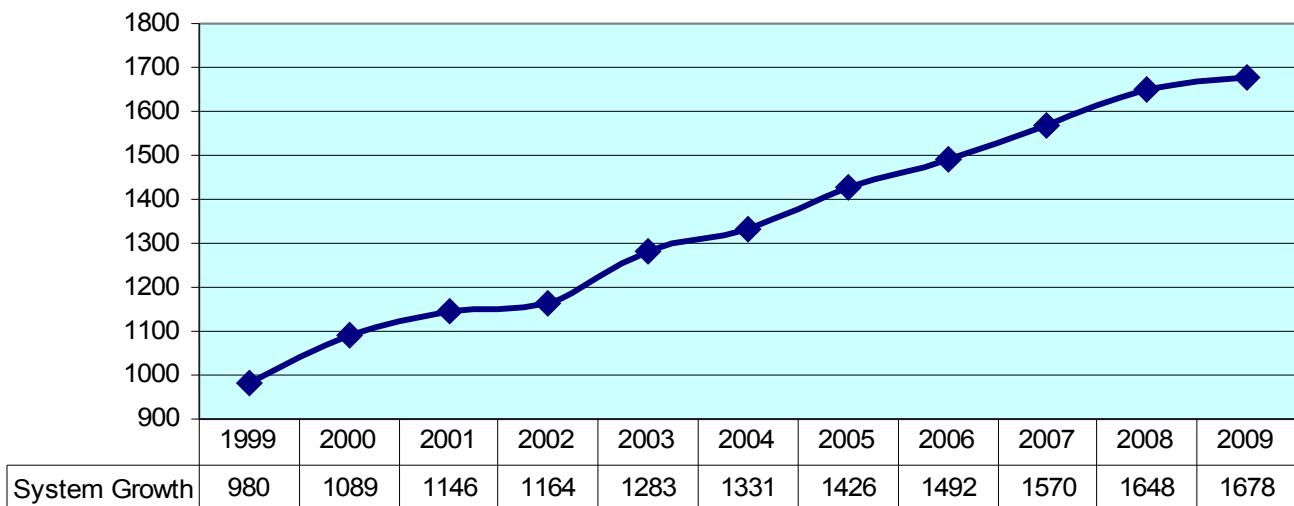




## Water System

New 2009 Residential Connections	30
New 2009 Commercial Connections	2
Total 2009 Residential Connections	1566
Total 2009 Commercial Connections	112
<b>Total 2009 Connections</b>	<b>1678</b>
Average Active Connections/Month	1645
Average % of Connections Active	98%
2009 System Growth Rate	1.82%

**System Growth 1999-2009**



## Compliance with Safe Drinking Water Act

2009 saw no violations of the Safe Drinking Water Act occur on the culinary water system.

## Consumer Confidence Report

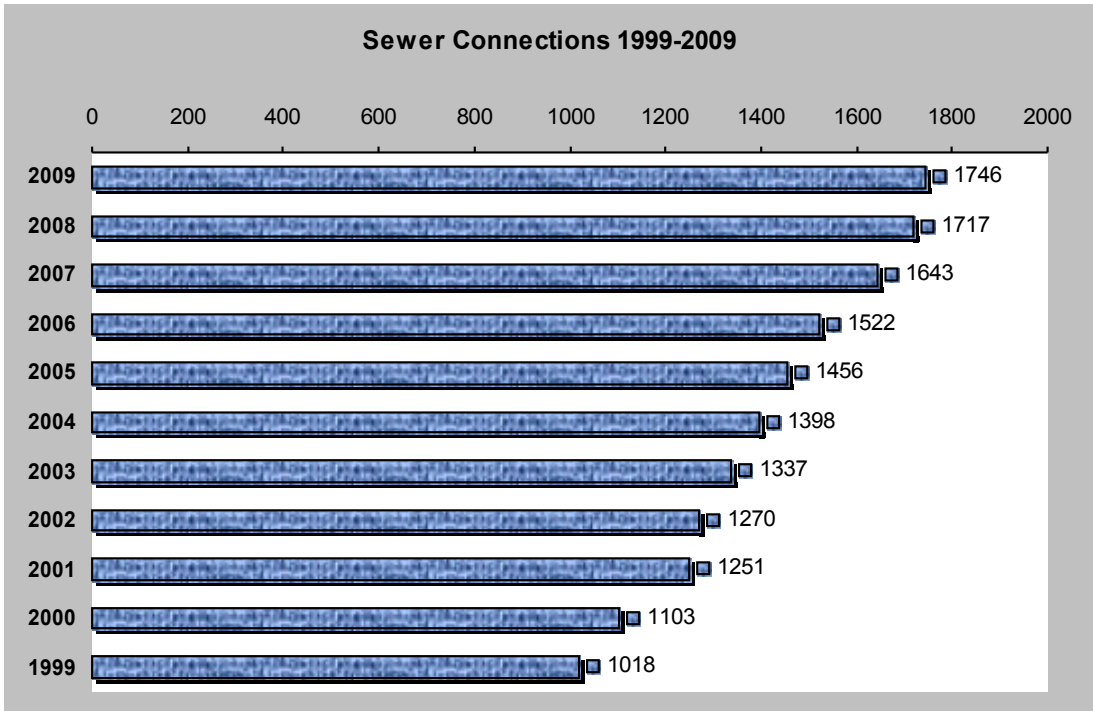
The 2009 Consumer Confidence Report is included in *Appendix A*.

## Sanitary Survey

The Division of Drinking Water completed a Sanitary Survey of the system on October 22, 2008. The system was credited ten points for having a current Emergency Action plan. No deficit points were given. Sanitary Surveys are completed by the DDW every three years.

## Sewer System

New 2009 Residential Connections	27
New 2009 Commercial Connections	2
Total 2009 Residential Connections	1630
Total 2009 Commercial Connections	116
<b>Total 2009 Connections</b>	<b>1746</b>
Average Active Connections/Month	1689
Average % of Connections Active	97%
2009 System Growth Rate	1.69%

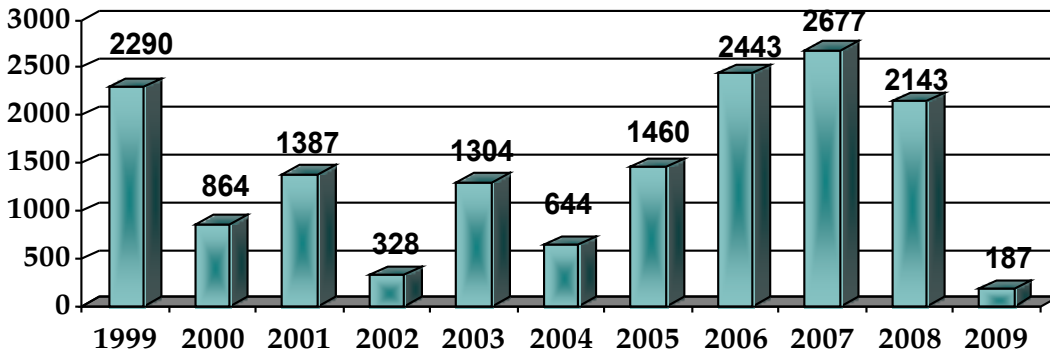


## Ken's Lake Irrigation System

### Estimate of 2009 Ken's Lake Seepage

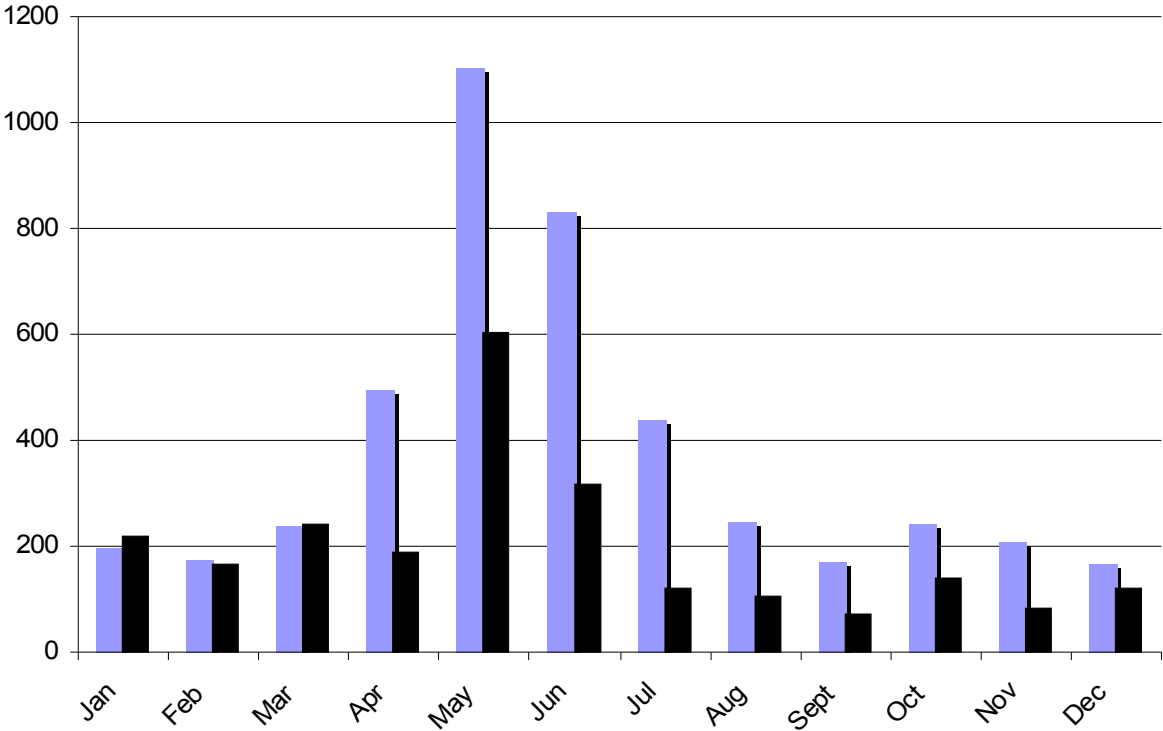
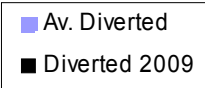
Amount in storage at end of 2008	773 AF
Amount diverted to Ken's Lake	2377 AF
Amount delivered to Irrigation pipeline	2763 AF
Evaporation Estimate	200 AF
Amount in storage at end of 2009	476 AF
Estimated seepage	187 AF

### Estimated Seepage in AF 1999-2008



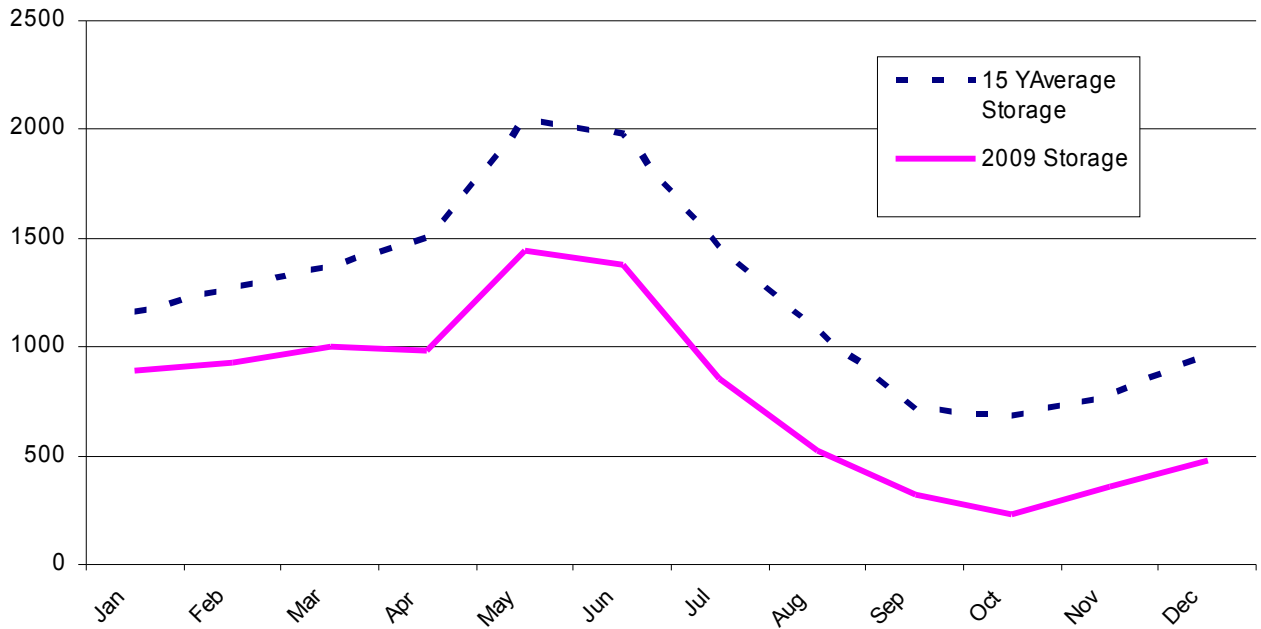
Water Diverted Through Sheley Tunnel				
Month	Av. Diverted AF		Diverted 2009 AF	% of Average
January	195		220	113%
February	174		167	96%
March	236		241	102%
April	494		187	38%
May	1101		605	55%
June	831		316	38%
July	439		120	27%
August	247		106	43%
September	169		70	41%
October	242		141	58%
November	207		82	40%
December	167		122	73%
Total	4501		2377	

2009 Flows vs. 15 Year Average Flows in Acre Feet



<b>Ken's Lake Storage Vs. 15 Year Average</b>				
<b>Month</b>	<b>15 Year Average</b>	<b>2009 Storage</b>	<b>% of Average</b>	<b>% of Capacity</b>
	AF	AF		
January	1158	894	77%	34%
February	1268	927	73%	36%
March	1370	1005	73%	39%
April	1498	982	66%	38%
May	2043	1440	70%	55%
June	1975	1379	70%	53%
July	1466	851	58%	33%
August	1077	522	48%	20%
September	720	325	45%	12%
October	681	228	33%	9%
November	772	355	46%	14%
December	968	476	49%	18%
Total Capacity is 2610 AF				

**2009 Irrigation Storage vs. 15 Year Average - In Acre Feet**



## Review of Water Management and Conservation Plan

The Grand Water & Sewer Service Agency Water Management and Conservation Plan states, "A portion of the Agency's Annual Report should discuss progress and accomplishments of the Water Conservation Program." The Conservation Plan Update was submitted in 2009. Goals for the

### 2009 Accomplishments of the Water Conservation Program

#### Conservation Oriented Water Rate

A conservation oriented water rate was adopted by the Agency Board effective September of 1999. Following is an analysis of how that rate has affected water use:

Month	2008	2008	2008	2009	2009	2009
	Active Connections	Water Use	Use per Connection	Active Connections	Water Use	Use per Connection
Apr	1583	14,729,000	9,304	1634	17,146,000	10,493
May	1584	31,347,000	19,790	1645	28,202,000	17,144
June	1610	35,441,000	22,013	1651	34,776,000	21,064
July	1623	40,094,000	24,704	1652	38,839,000	23,510
Aug	1618	44,547,000	27,532	1649	38,838,000	23,552
Sept	1620	44,367,000	27,387	1653	39,209,000	23,720
Oct	1623	25,350,000	15,619	1652	23,278,000	14,091

#### Yearly Comparison – Active Average Connections over 7 Month Outdoor Water Season

Year	Average Active	Total Use	Use/Connection	% of Change to Prior Year
1999	957	150,220,000	156,969	
2000	1,029	177,596,000	172,591	10%
2001	1,065	173,227,000	162,807	-6%
2002	1,137	169,850,000	149,384	-8%
2003	1,228	179,303,000	144,736	-3%
2004	1,302	196,159,000	150,660	4%
2005	1,372	213,183,000	155,381	3%
2006	1,471	214,362,000	145,725	-7%
2007	1,524	237,861,000	156,091	7%
2008	1,609	235,875,000	146,349	-7%
2009	1,648	220,288,000	133,574	-10%

## Yearly Comparison – Active Average Connections over 12 Months

The average use per month per connection between 1985 - 1999 was 18,762 gallons.

Year	Average Active Connections	Average Monthly Use Per Connection
1999	961	17,263
2000	1019	17,232
2001	1059	16,453
2002	1126	15,325
2003	1228	14,711
2004	1296	15,398
2005	1370	15,350
2006	1464	15,011
2007	1516	16,715
2008	1602	14,655
2009	1645	13,617

### Education

The Water Management & Conservation Plan states “Grand Water & Sewer Service Agency shall endeavor to educate all of its customers on proper and conservative use.”

- ♦ Educational flyers, previously mailed to all GW & SSA customers, are available at the Agency office. These flyers, suggesting practices for indoor and outdoor water conservation, are given to all new customers at time of application for water service.

### Water Audit

The WM & CP requires that a water audit be “...performed at least once per year for the drinking water system.” That audit is located in the **Culinary Water System** portion of this report. The audit indicates undocumented lost water on the system of 15.74% a decrease of 37% from 2008. In 2009 staff began tracking and reporting lost water on a monthly basis. This allows for any potential problems to be addressed in a timely fashion.

### 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 of water to restrict outside watering during that time period. Water users shall be informed periodically by use of mailings, bill inserts, brochures, and news media.

# Appendix A

## ***2009 Annual Drinking Water Quality Report*** ***Grand Water & Sewer Service Agency***

We are 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 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 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 Mark Sovine Manager/Operator 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 7:00 p.m. at the Agency Office, 3025 E. Spanish Trail Road, Moab, Utah, 84532. Individual reports will not be mailed but are available upon request.

Grand Water & Sewer Service Agency 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 1<sup>st</sup> to December 31<sup>st</sup>, 2009. 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.

***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)*** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

***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.

**Maximum Residual Disinfectant Level (MRDL)** - 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.

**Maximum Residual Disinfectant Level Goal (MRDLG)** - 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.

**Date-** Because of required sampling time frames i.e. yearly, 3 years, 4 years and 6 years, sampling dates may seem out-dated.

**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							
Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
<b>Microbiological Contaminants</b>							
Turbidity for Ground Water	N	ND - .555	NTU	N/A	5	2009	Soil runoff
<b>Radioactive Contaminants</b>							
Radium 228	N	ND - 3.13 +/- 0.08	pCi/l	0	5	2008	Erosion of natural deposits
<b>Inorganic Contaminants</b>							
Chromium	N	ND - 3.62	ppb	100	100	2009	Discharge from steel and pulp mills; erosion of natural deposits
Copper <ul style="list-style-type: none"> <li>90% results</li> <li># of sites that exceed the AL</li> </ul>	N	a. 80.2 b. 0	ppb	1300	AL=1300	2008	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	N	140 - 267	ppb	4000	4000	2009	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead <ul style="list-style-type: none"> <li>90% results</li> <li># of sites that exceed the AL</li> </ul>	N	a. 2.02 b. 0	ppb	0	AL=15	2009	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	N	211 - 507	ppb	10000	10000	2009	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	ND - 2.16	ppb	50	50	2009	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Sodium	N	9.46 - 21.4	ppm	None set by EPA	None set by EPA	2009	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	41.6 - 102.0	ppm	1000	1000	2009	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
TDS (Total Dissolved solids)	N	162 - 280	ppm	2000	2000	2009	Erosion of natural deposits
<b>Disinfection By-products</b>							
TTHM Total trihalomethane	N	0.5	ppb	0	80	2008	By-product of drinking water disinfection
Chlorine	N	0.7	ppm	4	4	2009	Water additive used to control microbes

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water.

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.

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.

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. GW&SSA 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>.

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.

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).

We at GW&SSA 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.