

# THE CLEARWATER SOURCE

2009 Annual Newsletter

## CLEARWATER ELECTION DATE MOVED TO NOVEMBER

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### UPCOMING EVENTS

- **Bell County Water Symposium**  
November 12, 2009  
CTCOG Building  
2180 N. Main, Belton
- **Edwards Aquifer Recharge Zone Stakeholders meeting**  
September 22, 2009  
Salado Intermediate School
- **Well Plugging Demo**  
December 1, 2009  
Location to be determined

The Clearwater Underground Water Conservation District has moved its election date from May to November beginning with the 2010 election. The five Clearwater directors serve four year terms that are staggered every two years. The November 2010 election will be for director positions in Precincts 2, 4, and at-large. The Clearwater precinct boundaries follow the same geographic areas as the Bell County Commissioners.

### Clearwater Precincts



Saving tax-payers thousands of dollars was the motivating factor in moving the election date to November. A November election allows Clearwater to essentially "piggy-back" on the county elections rather than holding its own election. The result—cost savings. Higher voter turnout is also anticipated with a November election.

### 2009 Legislative Session Summary

During the 81st Legislative Session, a total of 7,419 bills were filed. This is substantially higher than two years ago when 6,190 bills were filed. Of the 7,419 bills filed this session, 1,459 were passed and sent to Governor Perry, who vetoed 38.

In groundwater news, there were five new groundwater conservation districts (GCD) created affecting a total of 14 counties. These include the following:

- Harrison Co. GCD—Harrison Co.
- Prairieland GCD—Ellis, Hill, Johnson & Somervell Co.
- Brush Country GCD—Hidalgo, Brooks, Jim Hogg, & Jim Wells Co.
- North Texas GCD—Collin, Cooke & Denton Co.
- Red River GCD—Fannin & Grayson Co.

One GCD, Tablerock (Coryell Co.) was dissolved to allow it to join with the Middle Trinity GCD (Comanche, Erath, & Bosque Co.) McLennan Co. GCD changed its name to Southern Trinity GCD and also revised its funding source to become fee based.

Also of note is HB 2063 which amended Chapter 36 of the Water Code to clarify the ability of GCDs to enforce their rules against other governmental entities.

## CLEARWATER ACTIVITIES

### Clearwater Mission Statement

*The District's mission is to implement an efficient, economical, and environmentally sound groundwater management program to protect and enhance the water resources of the District.*

### ???Did You Know???

*In general, only about 5% of rainfall actually reaches an aquifer...this is about 1.5 inches out of 30 inches of rainfall received.*

### Drought Management Planning

Clearwater has been working to develop drought management plans (DMP) for both the Edwards BFZ and Trinity aquifers. A DMP for the Edwards BFZ aquifer has been adopted and includes triggers based on rainfall/drought conditions and spring discharge into Salado Creek.

The drought stages are currently voluntary to allow the District time to evaluate the triggers and determine whether adjustments are needed. This voluntary period also helps well owners become familiar with the drought stages and the concept of reducing water use.

A DMP for the Trinity aquifer is also underway and will feature triggers based on rainfall/drought conditions. The DMPs for both aquifers will incorporate monitor wells in the triggers when adequate monitoring wells are identified and data is collected.

### Continuous Monitoring Wells

Monitoring wells provide the District with crucial information about the status of the aquifers. Equipping these wells with a continuous monitoring system (data collected 24/7) provides data on a continuous basis to enable the district to evaluate the data and determine related patterns.

There are currently three wells in the Edwards BFZ aquifer that are equipped with a continuous monitoring system. Clearwater has recently drilled three wells in the Trinity aquifer (one in each subdivision—Upper, Middle, and Lower) specifically for monitoring purposes and will be equipping these wells with a monitoring system shortly.

Data from the monitoring wells is tied into the Texas Water Development Board (TWDB) system and is published on their website. A link to the TWDB monitoring well data is available on the Clearwater website at ...

Continued on Page 5

## WATER QUALITY PROTECTION

**“GIGO”—Garbage In, Garbage Out.** You’ve probably heard this term in relation to computers; however, it is also applicable to the quality of our groundwater supply, particularly in the recharge zone. If water quality has been compromised and the recharge entering an aquifer is polluted, water pumped from the aquifer by private wells will likely reflect the same polluted water. That’s why it is so important to protect the recharge zone of an aquifer.

**Non-point source pollution** is a term frequently used when discussing storm water run-off. This can be a major cause of pollution that is difficult to prevent because, as its name implies, it is difficult to identify the source. Point source pollution comes from one point of origin that is easy to identify, whereas, non-point source may come from various sources that cannot specifically be pointed out.

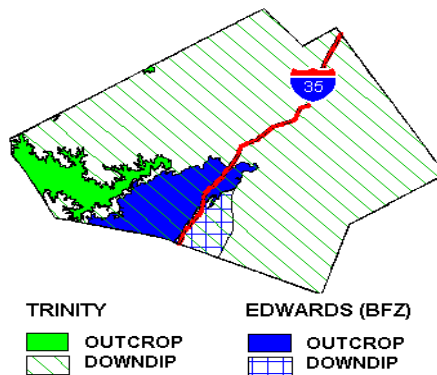
Examples of non-point source pollution include the following:

**Outcrop is the part of the aquifer that appears at the land surface and where recharge occurs.**

**Downdip is the part of the aquifer that dips below other rock layers.**

- excess fertilizers and pesticides from residential and agricultural areas;
- oil and grease from urban runoff (roads and parking lots);
- bacteria and nutrients from livestock, pet waste, and faulty septic systems;
- sediment from improperly managed construction sites, crop and forest lands, and eroding stream banks;

### Bell County Major Aquifers



- Salt from irrigation practices and acid drainage from abandoned mines.

**Other groundwater threats** include leaking petroleum storage tanks and abandoned water wells. Abandoned wells in particular pose a hazard to groundwater quality even in areas that are not recharge zones because the well provides a direct conduit for surface contaminants to enter a

groundwater system, regardless of the depth.

What makes groundwater pollution particularly dangerous is that it may often go undetected over a long period of time, possibly years, allowing it to spread over a large area. Additionally, once an aquifer becomes polluted it may become unusable for decades, and is often impossible to clean up quickly and inexpensively. Therefore, prevention is crucial.

Visit the Environmental Protection Agency website at [www.epa.gov/owow/nps/whatudo.html](http://www.epa.gov/owow/nps/whatudo.html) for ways you can prevent non-point source pollution. Also, get involved in a watershed protection plan...visit the Texas Watershed Steward website at <http://tws.tamu.edu>. And plug abandoned water wells. Contact the Clearwater office for more information on how you can plug your own well and whether your well may be used for a plugging demonstration.

## GROUNDWATER MANAGEMENT AREA 8 COMPLETES INITIAL TASK

Groundwater Conservation Districts (GCD) within a groundwater management area are required to coordinate with each other to develop statements describing the desired future condition (DFC) of the aquifers within that management area. These statements are required to be completed by September 2010.

Clearwater is part of Groundwater Management Area 8 (GMA 8) which encompasses 45 counties from Travis county in the south to the Texas/Oklahoma border in the north. GMA 8 has completed the task of developing DFCs and was the first of 16 GMAs to do so. Clearwater was instrumental in GMA 8’s success and serves as the administrator.

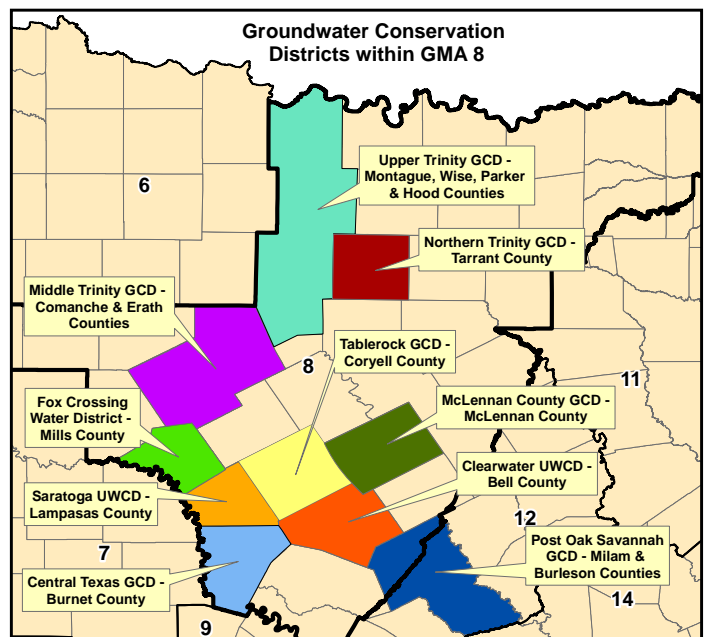
After the aquifer DFC statements are developed, the Texas Water Development Board (TWDB) assigns availability figures for each aquifer based on

the DFC statements. This availability figure, or MAG (managed available groundwater), is the maximum amount of water that may be pumped from an aquifer and still maintain the desired future condition.

Major aquifers in GMA 8 include the Edwards BFZ and the Trinity aquifer. There are also seven minor aquifers in GMA 8 as follows: Blossom, Brazos River Alluvium, Ellenburger-San Saba, Hickory, Marble Falls, Nacatoch, and Woodbine. Visit the GMA8 website at [www.gma8.org](http://www.gma8.org) to view the DFC statements for each aquifer and the resulting MAG for each county. The MAGs for the two major aquifers in Bell County total 13,537 ac-ft/year as follows:

Edwards BFZ: 6,469 ac-ft/year  
Trinity: 7,068 ac-ft/year

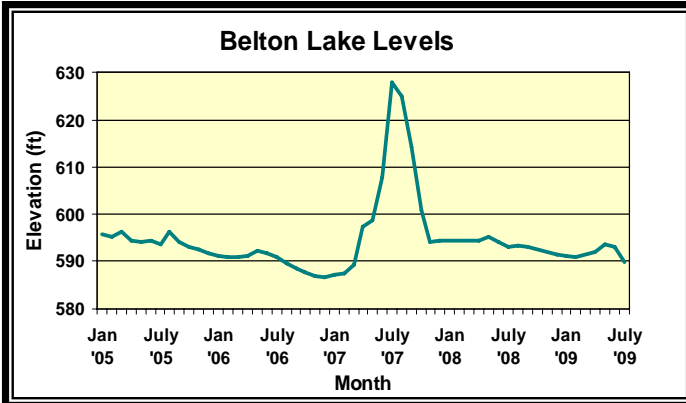
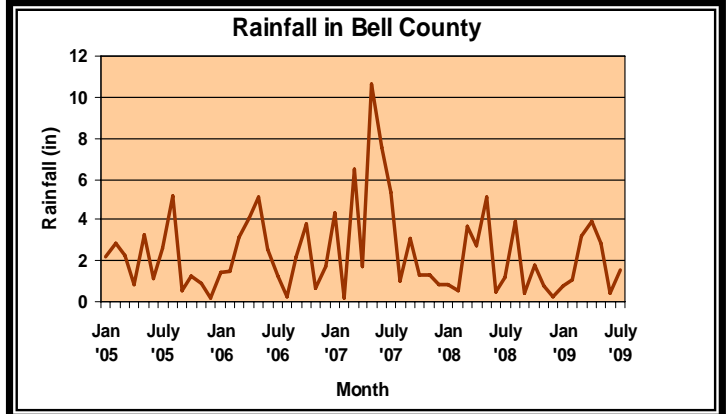
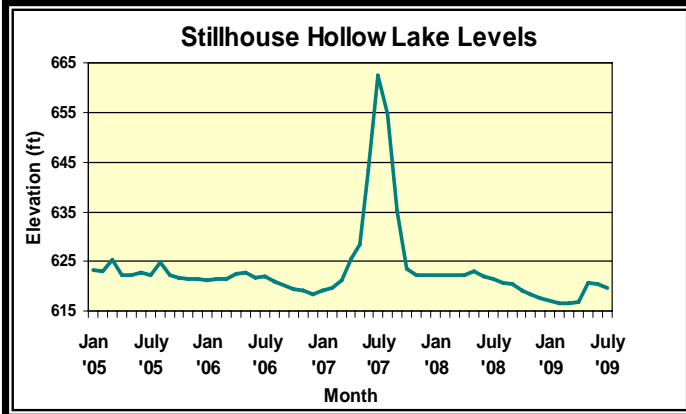
As of July 2009, approximately 6,169 ac-ft/year has been allo-



ated from these two aquifers. (Note: one acre foot is the amount of water needed to

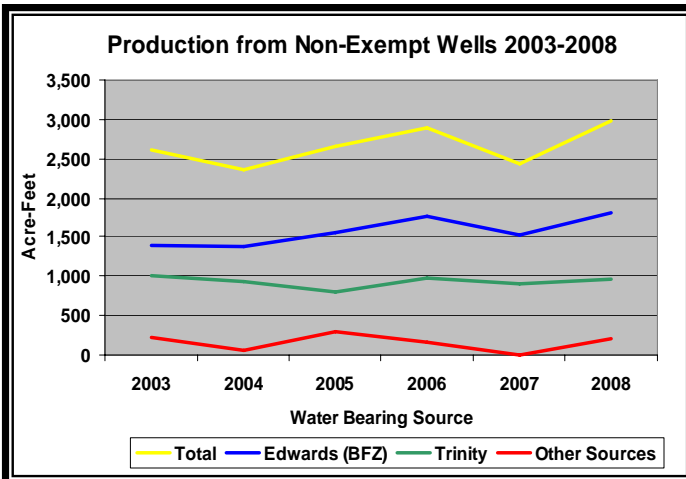
cover one acre of land to a depth of one foot—approximately 325,851 gallons.)

## RAINFALL AND GENERAL DATA



**Well Registration:** Since the District's opening in 2002, a total of 4,614 wells have been registered through December 2008. 121 of these wells were non-exempt and 4,493 exempt.

**Non-exempt** wells are capable of producing a large volume of groundwater (over 17 gallons per minute), located on less than 10 acres, or are used for purposes other than Domestic, Livestock, or Poultry. Well registration for 2009 through July is reported at 32.

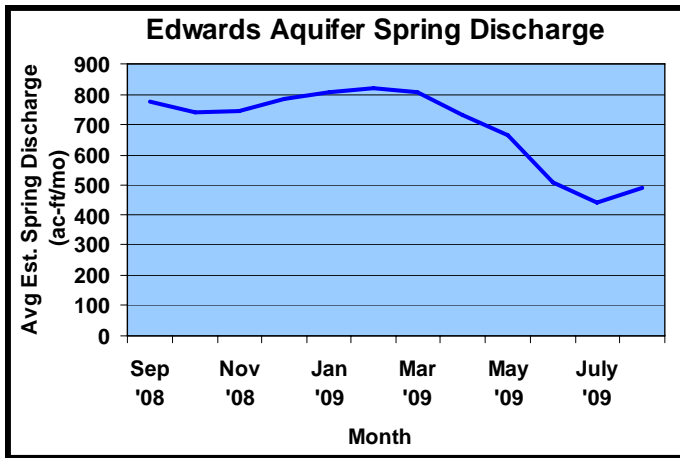


Period	Exempts Wells		Non-Exempt Wells		Total
	Existing	New	Existing	New	
2002	3,520	76	50	0	3,646
2003	379	80	4	2	465
2004	18	82	15	3	118
2005	22	91	13	4	130
2006	16	80	5	3	104
2007	22	52	4	8	86
2008	11	44	4	6	65
<b>Total</b>	<b>3,988</b>	<b>505</b>	<b>95</b>	<b>26</b>	<b>4,614</b>

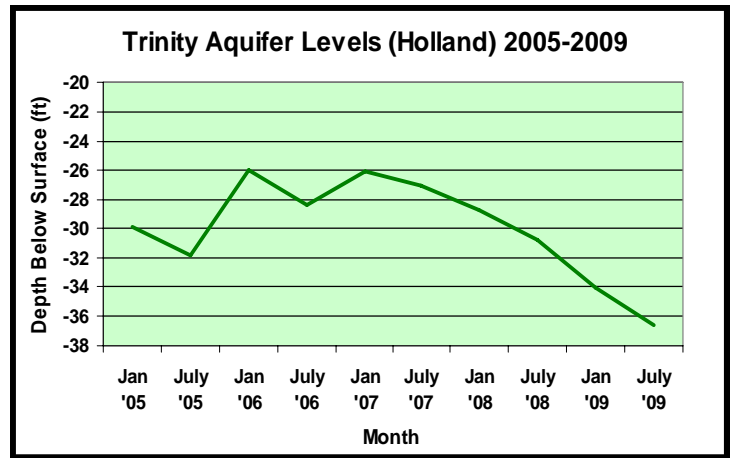
### 2008 Non-Exempt & Exempt Well Production

Aquifer	Non-Exempt Well Production (ac-ft/yr)	Number of Non-Exempt Wells	Estimated Exempt Well Production (ac-ft/yr)	Number of Exempt Wells (December 2008)	Total Production (ac-ft/yr)
Edwards BFZ	1,815	39	436	654	2,251
Trinity	964	35	1,223	1,835	2,187
Other Aquifers	200	11	1,272	1,908	1,472
<b>Total</b>	<b>2,979</b>	<b>85</b>	<b>2,931</b>	<b>4,397</b>	<b>5,910</b>

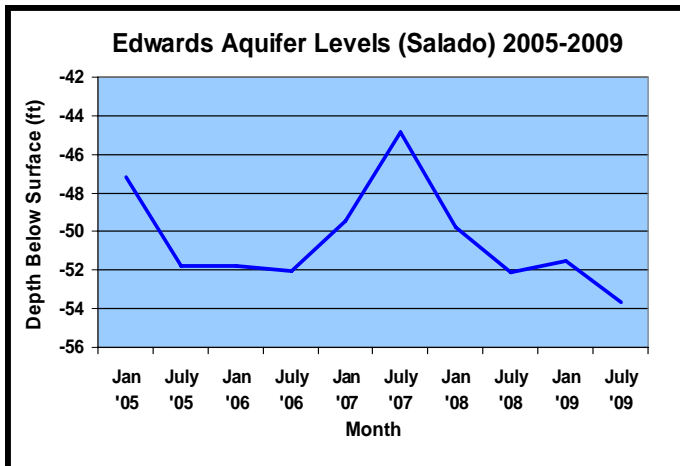
# AQUIFER MONITORING



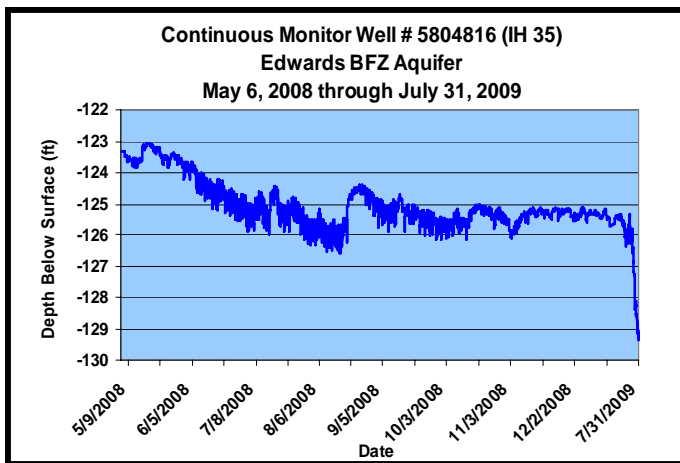
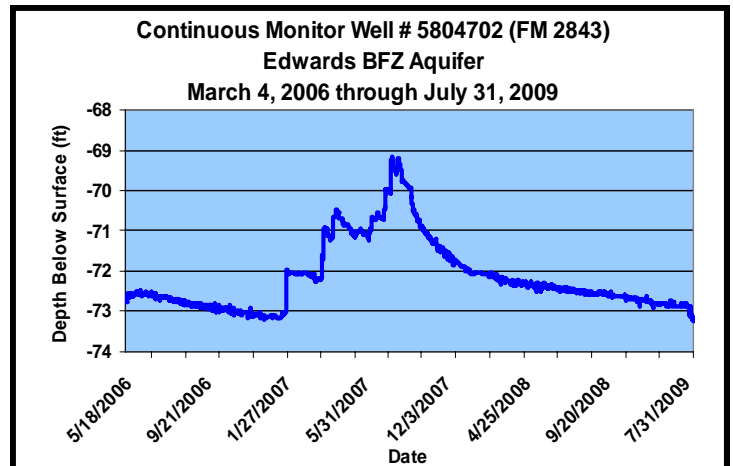
\* Edwards Aquifer spring discharge measured at Salado Springs.



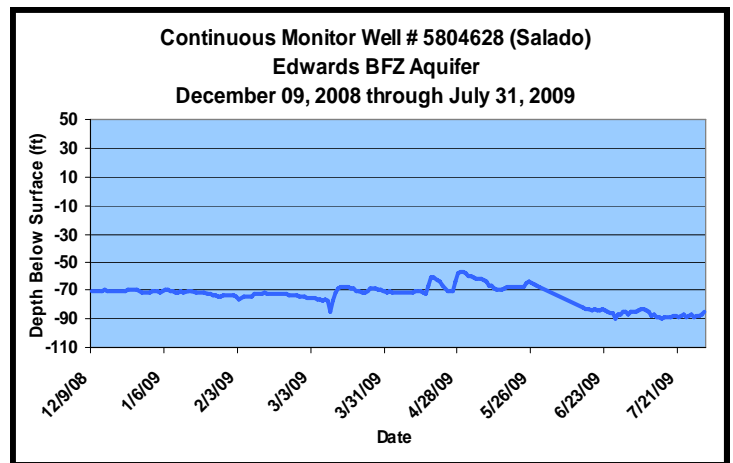
\* Measurement for Trinity Aquifer in Holland, TX taken manually by District staff.



\* Measurement for Trinity Aquifer in Salado, TX taken manually by District staff.



\* Continuous monitoring well information maintained and provided by Texas Water Development Board.





## WATER CONSERVATION

Record setting heat, little rainfall, lake levels down, aquifer levels dropping.....Yep! We are in a drought; again! This latest drought is being compared to the "drought of record" that occurred in the 1950's. Whether this current drought will have the notoriety of becoming the new drought of record, remains to be seen.

One thing that is certain, Texans have to come to grips with the reality that water is more valuable than oil and deserves equal if not more attention and respect. It is not a commodity to be taken lightly but is to be conserved and valued as the life-giving, life-sustaining resource it is.

For updates on drought conditions across the state, visit the

Texas AgriLife extension website <http://agrilife.tamu.edu/drought>. Below are some tips for saving water. Visit the Clearwater website for additional tips. Also, stop by the Clearwater office to obtain various water conservation items that are free to the public.

- \* Don't let water run when brushing your teeth, shaving, or cooking. Install a faucet aerator.
- \* Take showers instead of baths and take short showers. Install a water efficient showerhead.
- \* Replace older toilets with low volume flush toilets, or install a displacement device in the tank.
- \* Adjust water level in washing machine to match load size; only run dishwasher when full.
- \* When replacing appliances, buy water and energy efficient appliances...*Energy Star*.
- \* Check for and fix leaky faucets and toilet leaks.
- \* Water lawns in the early morning or evening hours...not in the heat of the day or on windy days.
- \* Water thoroughly but less frequently...apply one inch of water every 5 days or more.
- \* If using an automatic sprinkler system, use rain shut-off device or moisture sensor.
- \* Do not water the street, driveways or sidewalks, or allow water to run down the street.
- \* Allow grass to grow 3" in height; taller grass holds in moisture and reduces evaporation.
- \* Plant water-wise and/or native shrubs, trees and grasses: bermuda, buffalograss, and zoysia.
- \* Use mulch; apply compost instead of fertilizers; harvest rainfall.

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### Clearwater Activities

[www.clearwaterdistrict.org](http://www.clearwaterdistrict.org) under the "District Data" tab.

In addition to the continuous monitoring sites, Clearwater also measures water levels in selected wells twice a year, January and July. Please contact the District if you would like to include your well in this program.

### Stream Flow/Spring Discharge Data

Clearwater has been monitoring data from the two stream flow gauges installed in Salado Creek to estimate the amount of water from the Edwards BFZ aquifer that is being discharged into Salado Creek via the springs. The spring discharge values are measures that may trigger drought stages in the drought management plan for the Edwards BFZ aquifer. These discharge values are also used to support groundwater availability figures in the District management plan and the desired future conditions and availability figures established through the joint planning process in Groundwater Management Area 8.

Spring discharge values have been averaged for each month

since August 2008. Clearwater is reviewing the data and level of accuracy to determine whether adjustments to the program are needed. Clearwater is also exploring ways to make the data more easily accessible to the public.

### Water Quality Testing

Monitoring groundwater quality is an important task since many Bell County residents rely upon groundwater as their sole source of water supply. Clearwater collects samples from eight water wells across the county and sends the samples to a certified lab for a series of tests. The results are available on the Clearwater website under the "Education" tab, and then "Water Conservation and Water Quality" topic.

Clearwater also offers an in-house lab for water quality testing which is available to registered well owners free of charge.

### Well plugging demonstrations

Clearwater partners with the Texas AgriLife Extension to provide well plugging demonstrations throughout the year. Wells that have less than 100' of standing water may be plugged by the well owner. The demonstrations show a well owner how this is done. Please contact the

**Well plugging demo event held June 3, 2009 at Warren Dunn's property in Belton, TX**



**Texas State Youth Water Camp held July 12-16, 2009 at Monahans, TX**



Clearwater office if you have a well that you would like to offer for use for the plugging demonstrations.

**Texas State Youth Water Camp**  
Each year Clearwater offers to sponsor three high school youths to attend the state water camp in Monahans, TX held in

July. This year was the first year Bell County students attended this camp, and Clearwater sponsored all five students. Contact the Clearwater office if you have students who may be interested in attending next summer.

Clearwater  
Underground Water  
Conservation District

**CUWCD Directors & Terms:**

**Leland Gersbach**—Precinct 1  
2008-2012 (Director)

**Horace Grace**—Precinct 2  
2006-2010 (President)

**Wallace Biskup**—Precinct 3  
2008-2012 (Vice President)

**Judy Parker**—Precinct 4  
2006-2010 (Secretary)

**John Mayer**—At large  
2006-2010 (Director)

**CUWCD Public Advisory  
Committee:**

**Tom Madden**—Precinct 1

**Henry Bunke**—Precinct 2

**Marvin Green**—Precinct 3  
(Committee chair)

**Bradley Ware**—Precinct 4

**David Cole**—At Large

***Water Quality Testing***

*The District's in house lab offers registered well owners free testing for common constituents and bacteria. Testing bottles are available in our office. Annual testing is recommended.*

***E-mail Contact List***

*Contact the District office if you would like to be included in our e-mail list for agendas and press releases.*

Clearwater District  
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Central TX Council of Gov. Bldg.  
P.O. Box 729  
Belton TX 76513

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E-mail: cmaxwell@ctcog.org or  
cmaxwell@clearwaterdistrict.org  
www.clearwaterdistrict.org



**A MESSAGE FROM THE PRESIDENT**



President Horace Grace

Dear Bell County Friends,

10 years ago Clearwater was confirmed by the voters of Bell County. As we celebrate our 10<sup>th</sup> anniversary as a groundwater district, I want to thank you for your support and trust.

Clearwater was formed to protect and manage the groundwater resources of Bell County. This includes two major aquifers—Trinity and Edwards BFZ—as well as several smaller aquifers. Clearwater has taxing authority and policies are set by a five member elected board.

Clearwater's Board of Directors has done an outstanding job of running your water district at minimum cost. Clearwater is funded by ad valorem taxes and is authorized to collect up to \$.01/\$100 of value; however, Clearwater operates on a tax rate less than half of this....\$.004/\$100 value, or approximately \$4 for property valued at \$100,000. I am pleased to report that we have never raised your taxes to accomplish our mission and have no plans to do so in the future.

Clearwater has an adopted Management Plan and rules which regulate water well drilling, spacing and pumping. All wells in Bell County are required

to be registered. To date, over 4,500 wells have been registered and permits, generally for non-domestic uses, have been issued for about 95 wells. Owners of permitted wells report monthly water usage to the District so Clearwater is able to get a good estimate of the groundwater needs in Bell County.

Over the years Clearwater has conducted studies of our aquifers to better understand groundwater conditions. Geophysical logs of wells completed in the lower Trinity aquifer in western Bell County are being conducted to get more information on the location and thickness of the three Trinity layers.

Clearwater collects water level data from selected wells and has equipped three Edwards wells with continuous monitoring equipment. Three wells in the Trinity aquifer have recently been drilled and will also be equipped with continuous monitoring equipment. The water level in Trinity wells is a measure for managing the Trinity aquifer in Clearwater's Management Plan.

During 2008, Clearwater began collecting data from stream flow gauges installed in Salado Creek. Data from these gauges is used to estimate spring discharge from the Edwards BFZ aquifer. Spring discharge is a measure for managing the Edwards BFZ aquifer in Clearwater's Management Plan.

All of these studies and data enable Clearwater to estimate the amount of water available for use in the aquifers, the amount of water produced from these aquifers, and the impact of this production on the ground-

water resources.

Some water experts have commented that Clearwater is one of the best managed groundwater districts in the state. This can be attested to by the fact that Clearwater was selected by its peers to be the lead district in managing Groundwater Management Area 8 (GMA 8). This entity's goal is to determine desired future conditions for nine aquifers in 46 counties in Texas. This results in a managed available groundwater (MAG) figure that is basically the amount of water that may be produced from an area. These are available for viewing at [www.gma8.org](http://www.gma8.org).

Public education and conservation of all water resources has been a priority of Clearwater. Hosting an annual water symposium has been a major outreach activity along with providing water education programs to the schools.

Clearwater recently completed a Strategic Plan to identify and prioritize goals and objectives. Clearwater has adopted a drought management plan for the Edwards BFZ aquifer and is currently working on a drought management plan for the Trinity. Clearwater is also looking at ways to protect the Edwards BFZ recharge zone.

Clearwater has made tremendous progress during these past 10 years but we still have a lot of work to do. Water is an invaluable resource and the more we know about our local groundwater resources the better we can protect and manage them for the future.

**Horace Grace**

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(NAME)  
(STREET)  
(CITY)