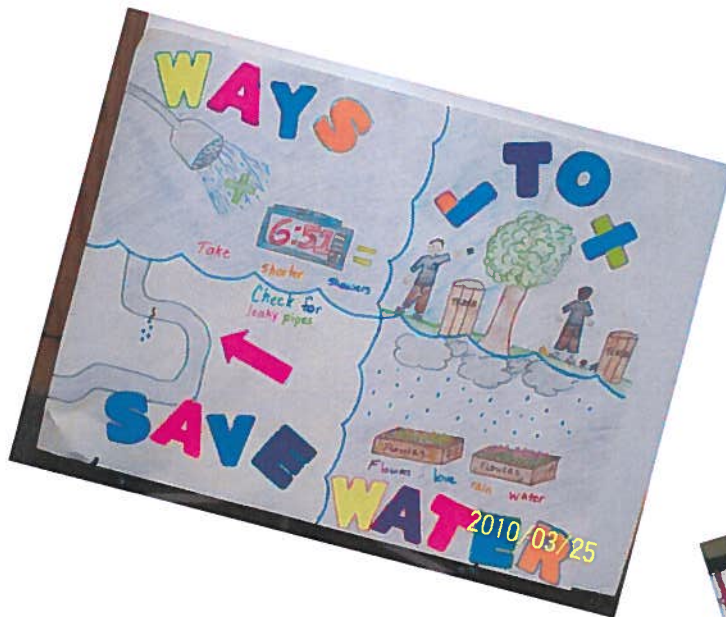




Annual Report

Fiscal Year 2010



1st Place
Adrianna Brewer
Troy Elementary

2nd Place
Emily White
Kennedy-Powell Elementary



***Clearwater Underground Water Conservation District
Annual Report—Fiscal Year 2010***

The Annual Report for Fiscal Year 2010 (FY10) was approved by the Directors of the Clearwater Underground Water Conservation District (CUWCD or District) on August 9, 2011. This report summarizes the activities and accomplishments of the District during FY10 focusing on administrative tasks, management plan requirements, and miscellaneous activities. Most activities are based on the District's fiscal year; however, information dealing with well registration, permitting, and production are based on the 2010 calendar year.



**Clearwater Underground Water Conservation District
Board of Directors 2008—2010**

**Horace Grace
Precinct 2**

**Wallace Biskup
Precinct 3**

**Judy Parker
Precinct 4**

**Leland Gersbach
Precinct 1**

**John Mayer
At-Large**

District Mission Statement

Develop and Implement an efficient, economical and environmentally sound groundwater management program to protect and enhance the water resources of the District.

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1. INTRODUCTION

The Clearwater Underground Water Conservation District was created by the State legislature in 1989 to manage the groundwater resources of Bell County. The District was approved by the voters of Bell County in August 1999 and opened its doors for business in February 2002. Groundwater resources in Bell County include the following:

- Edwards BFZ
- Trinity
- Others:
 - Alluvium
 - Austin Chalk
 - Buda
 - Edwards Equivalent
 - Kemp
 - Lake Waco
 - Ozan
 - Pecan Gap

Clearwater's fiscal year runs from October 1st through September 30th. This report summarizes the accomplishments and activities of the District during FY10; however, registration, permitting, and production figures are provided for the calendar year 2010.

During FY10, the selected contractor began upgrading the District's stream flow gauge system in Salado Creek to automate the collection of data and the posting of the data on the District website. The upgrade also includes a new file server system, automated processing and publication of rainfall data and website improvements to support the District's drought management plans. The Drought Management Plan for the Trinity aquifer was adopted and the Drought Management Plan for the Edwards BFZ was re-adopted with minor revisions. Data was collected for four Edwards BFZ aquifer recharge zone studies. The District proceeded with plans to become a stand alone entity separate from Central Texas Council of Governments (CTCOG). These activities and others are discussed in this report.

The information in this report is presented in three categories as follows:

- Administrative Tasks
- Management Plan Requirements
- Miscellaneous Activities

Administrative tasks include internal administrative activities necessary for a groundwater district to function effectively. Management Plan requirements include the required tasks and activities identified in the District's Management Plan. Miscellaneous activities include other activities and programs that have been an integral part of the District but are not required by the Management Plan.

2. ADMINISTRATIVE TASKS

Major administrative tasks and activities during FY10 include the following:

A. Contracts/Agreements:

- Central Texas Council of Governments
- Technical Consulting Services
 - (1) AECOM, Inc.
 - (2) Bar-W Groundwater Exploration, LLC.
- Legal Services
 - (1) Naman, Howell, Smith & Lee
 - (2) Lloyd, Gosselink, Blevins, Rochelle & Townsend, P.C.
- Other Services
 - (1) Hamson Consulting
 - (2) Village of Salado
 - (3) Architectural Edge, Inc.

B. Financial Items:

- Budget and Tax Rate
- Financial Audit

C. Miscellaneous Policies/Issues:

- Administrative Fee Schedule Revised
- Bylaws Revised
- Plans to Separate from CTCOG

D. Board of Directors:

- District Officers
- Meetings

E. District Rules:

- Expiration date on incomplete permit applications

F. Management Plan

A detailed discussion of each of these activities follows below.

A. CONTRACTS/AGREEMENTS

1. Central Texas Council of Governments

The District originally contracted with CTCOG for administrative and planning services in March 2000. This contract includes the use of CTCOG staff, equipment, and facilities. While this contract has proven beneficial for both parties, the Clearwater Board has been considering options to break from CTCOG and become a stand-alone entity.

For FY10, Clearwater did not renew its two year contract with CTCOG set to expire in September 2010 but chose to let it continue for six months and consider renewal in March 2010. In March 2010, the Board was in the process of purchasing property to construct a new building and therefore decided to renew the contract for a one year period from April 1, 2010 through March 31, 2011, with consideration for renewal to occur in September 2010. In September 2010, the property had been purchased and an architectural team was designing construction plans, therefore, for FY11 the contract was renewed from October 2010 through September 2011 with consideration for renewal to occur in March 2011. Provisions were also included to allow a 60 day termination notice from April 2011 through September 2011. The 60 day termination notice was included to allow flexibility as the building construction progressed.

2. Technical Consulting Services

The District initiated a contract with AECOM, Inc. (previously TCB, Inc.) in March 2001 for technical consulting services and has continued a contractual relationship over the years. During FY09, the head geoscientist assigned to Clearwater left AECOM to establish a private consulting firm—BAR-W Groundwater Exploration, LLC (BAR-W). Clearwater has contracts with both AECOM and BAR-W. AECOM provides technical support with regard to the Salado Creek stream flow gauge system. BAR-W provides general technical consulting and various studies. Some of these conducted during FY10 are identified below:

- Provide technical review of drilling and operating permits;
- Designate aquifers for exempt wells and provide estimate of production;
- Develop Drought Management Plan for the Trinity aquifer and revisions for the Edwards BFZ aquifer Drought Management Plan;
- Review system upgrade needs and preparation of bid documents;
- Review data from three continuous monitoring wells in the Trinity aquifer and compare with desired future conditions;
- Provide guidance to staff in collection of data from selected wells for use in the Edwards BFZ aquifer recharge zone studies;
- Review data from Salado Creek stream flow gauges and provide recommendations for improvements to increase data reliability;
- Research historic spring elevations in Salado Springs system to address concerns with data from steam flow gauges;

- Provide recommendations for replacement of damaged components of the stream flow gauge system.

Several of the items above are discussed in more detail throughout this report.

3. Legal Services

The District requests legal consulting services on an as-needed basis and utilizes two law firms. Naman, Howell, Smith & Lee is contacted for general consultation such as contract renewal with CTCOG, and Lloyd, Gosselink, Blevins, Rochelle & Townsend, P.C. (LGBRT) for consultation regarding water-related issues. LGBRT was the District's primary advisor during FY10 which included the following issues:

- Research and guidance on permitting issues, spacing issues, rule interpretation, public hearing notices, meeting cancellation notices, conservation easements and topics allowed for discussion in closed session.
- Review of documents to include contracts and bylaw revisions.
- Preparation of Board resolutions and interlocal agreement.
- Application of Professional Services Procurement Act in selecting architect and building contractor.
- Preparation of election documents including U.S. Department of Justice pre-clearance submittal, Order Calling Election of Directors, and contract with Bell County Clerk's Office.
- Representation of groundwater districts at Texas Water Conservation Association Groundwater Sub-Committee on Desired Future Conditions.

4. Other Services

Hamson Consulting: The Board contracted with Hamson Consulting in December 2009 to provide information technology consulting services. The work was composed of improvements to the stream gauge network on Salado Creek to automate the collection and processing of gauge data to support the District's drought management plans. The collection and processing of NOAA Nex-Rad rainfall intensity data was also automated. Other services included installation of a replacement file-server and improvements to the Clearwater website. Website improvements include publishing data related to drought stages, social-networking ability, and overall new look for the website. The gauges in Salado Creek were destroyed in September 2010 when flooding of the Creek occurred; the contract will be completed when the gauges are reinstalled.

Village of Salado: The Board entered into an interlocal agreement with the Village of Salado (VOS) in April 2010 to allow VOS to use data from the District's Salado Creek stream gauge network to develop an early warning system of flood conditions in the Creek. Progress to develop the early warning system has been delayed due to the destruction of the gauges in the September 2010 flood. Work will proceed when the gauges are reinstalled.

Architectural Edge, Inc.: The Board contracted with Architectural Edge, Inc. in May 2010 to prepare architectural and engineering plans for the new office building. Water and energy efficiency were a priority and the design included components to satisfy LEED (Leadership in Energy and Environmental Design) certification. Plans to construct the building were discontinued after bids were received.

B. FINANCIAL ITEMS

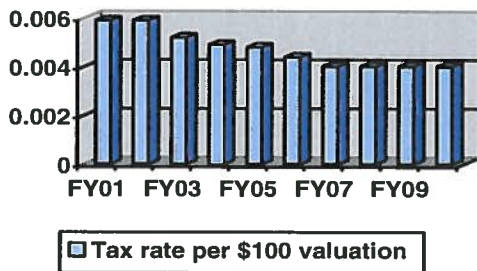
1. Budget and Tax Rate

The District held one workshop to develop an operating budget for the upcoming fiscal year and to set the corresponding ad valorem tax rate. The District has consistently lowered or kept the same tax rate since it began assessing taxes. The adopted tax rate for FY10 was \$0.0040/\$100 valuation, the same rate as the previous three fiscal years. The approved budget for FY10 totaled \$544,374 with \$538,374 anticipated revenue from taxes.

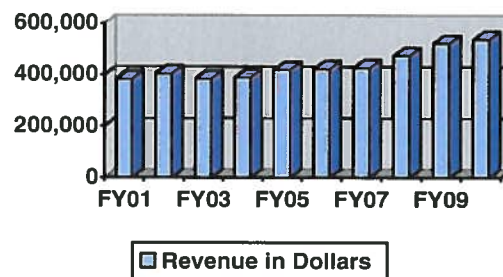
Expenditures for FY10 totaled \$455,669--\$88,705 under budget. Total revenue (including interest and fees) collected during FY10 was lower than anticipated at \$534,986 (\$9,388 less); however, revenue exceeded expenditures resulting in a surplus of \$79,317 that was carried over to the reserve account. The reserve account at the end of FY10 is \$611,707.

The approved budget for FY10, along with the ending schedule of revenues and expenditures for FY10, is attached as Appendix M. Appendix M also includes a pie-chart that breaks down expenditures by category. The figures shown in the final report include a \$532,390 reserve balance or carry over from years prior to FY10.

CUWCD Tax Rate



Anticipated CUWCD Tax Revenue



2. Financial Audit

An annual audit of the District's finances is required by Chapter 36.153 of the Texas Water Code. Clearwater's audit occurs in conjunction with CTCOG's audit. The fiscal year for CTCOG runs from July 1st through June 30th. Patillo, Brown & Hill, LLP conducted the CTCOG audit, with Clearwater as a part of the CTCOG audit. There were no findings to report for the FY09 and FY10 audit.

C. MISCELLANEOUS POLICIES/ISSUES

1. Administrative Fee Schedule Revised

The Board revised the Administrative Fee Schedule in January 2010 to incorporate costs associated with the technical and legal review that occurs in processing permit applications. In the past, these expenses were paid by Clearwater; the revised fee schedule places this burden on the permit applicant. A revised fee schedule is attached as Appendix O.

2. Bylaws Revised

In September 2010, the Board revised the District Bylaws as follows:

- Eliminated requirement specifying that Board meetings be held on a particular day and time.
- Eliminated requirement for an annual meeting and clarified that regular meetings will occur at least quarterly.
- Moved election date of officers to occur at beginning of calendar year.
- Corrected citation of enabling legislation, noted change of office location, and clarified terms of office and requirements for a quorum.

3. Plans to Separate from CTCOG

In March 2010, the Board renewed the CTCOG contract for a one year period with consideration for renewal to occur in September 2010. The District was in the process of purchasing property in the Belton Business Park. The property purchase would solidify plans to separate from CTCOG. As such, the Board began looking at building and staffing needs. Architectural Edge, Inc. was selected to lead the architectural/engineering team. The majority of the board wished to construct an energy and water efficient building not to exceed 2,800 sq. ft. in size incorporating LEED features if not cost prohibitive.

In May 2010, the Board approved the concept of staffing the new office with three full time employees. Job descriptions and salary ranges were also approved. In August, 2010, the Board stated their intent to offer their future employees a benefit package administered through the West Central Texas Council of Governments. At that time, the Board also stated their intent to offer two of the proposed staff positions to two of the existing staff members and stated the intended salaries. Also in August, a proposed floor plan of approximately 2,800 square feet was approved by the Board incorporating energy and water efficient features.

In early FY11, elections were held and one incumbent was not re-elected. Bids for building construction were solicited and then rejected by the Board. As a result, plans to proceed with the building stopped.

D. BOARD OF DIRECTORS

1. District Officers

District Officers for FY10 were designated at the last meeting of FY09. The FY10 officers are identified below, along with the office they held and precinct they represent.

Horace Grace, President (Precinct 2)

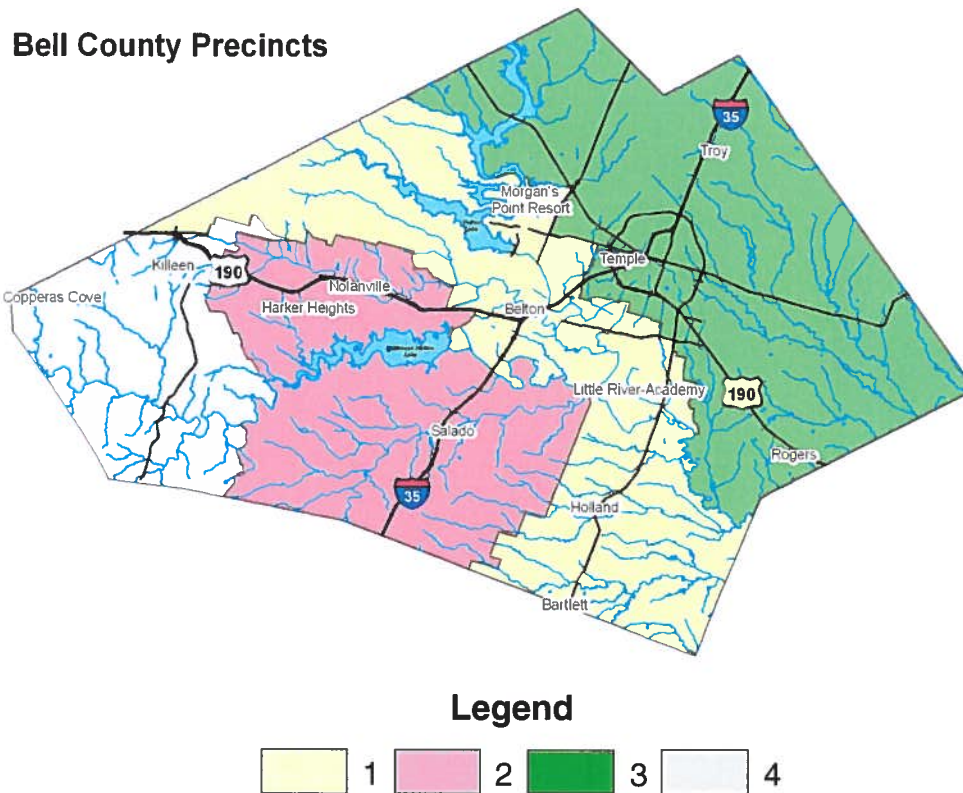
Wallace Biskup, Vice President (Precinct 3)

Judy Parker, Secretary (Precinct 4)

Leland Gersbach, Director (Precinct 1)

John Mayer, Director (At-Large)

Following is a map of the Bell County Commissioner Precincts which also serves as the precinct boundaries for the District.



3. Meetings

The Board of Directors held 16 Board meetings and six workshops during FY10. The workshops included discussion of the following: CTCOG Contract; outcome of Edwards BFZ aquifer recharge zone meeting; proposals for system upgrade; properties under consideration for purchase; plans to separate from CTCOG; revisions to administrative fee schedule; plans for future office building; staffing issues with regard to new office building; design specifications for new office building; FY11 budget; and staff positions, salaries and benefits for new office building. Board meetings are typically held on the second or third Tuesday of each month.

E. DISTRICT RULES

During FY10, there was one revision to the District rules which was adopted in April, 2010 and is summarized below:

Amendment to Set Expiration Date on Incomplete Permit Applications

District Rule 8.9 *Permit Applications* was amended to establish an expiration date for incomplete permit applications. The amendment set a 90 day limit on incomplete permit applications with the 90 day period to begin after staff notifies the applicant of the deficiencies via certified mail.

F. MANAGEMENT PLAN

No changes were made to the District's Management Plan during FY10. However, in August 2010 the Board approved a task order with BAR-W Groundwater Exploration, LLC, to begin the five year update to the District Management Plan. Managed Available Groundwater (MAG) figures that were developed for the Edwards BFZ and Trinity aquifers through the joint planning process by Groundwater Management Area 8 will be included in the District Management Plan when the update occurs in FY11.

Groundwater districts may be audited by the State every seven years to determine if the District is actively engaged in achieving the objectives of its management plan. The Clearwater District has not yet been audited. A detailed discussion of the District's Management Plan activities based on the 2006 approved Plan is included later in this report.

3. MANAGEMENT PLAN REQUIREMENTS

The District Management Plan identifies the goals and objectives of the District and provides performance standards and tracking methods to measure the District’s effectiveness in meeting these goals. The District goals are mandated by Texas Water Code Chapter 36, Section 36.1071. Although all groundwater conservation districts are subject to these goals, each district chooses how to best implement the goals within their district by establishing their own objectives and performance standards. The District goals are as follows:

- Providing the most efficient use of groundwater;
- Controlling and preventing waste of groundwater;
- Addressing conjunctive surface water management issues;
- Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater;
- Addressing drought conditions;
- Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control where appropriate and cost-effective; and
- Addressing in a quantitative manner the desired future conditions of the groundwater resources.

The following is a summary of the District’s activities related to these goals.

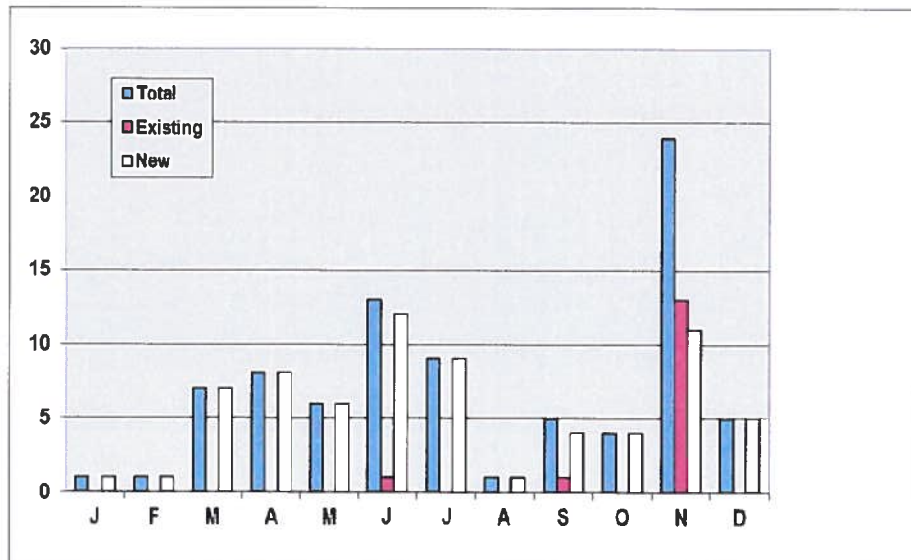
A. PROVIDING THE MOST EFFICIENT USE OF GROUNDWATER

Objectives A.1 and A.2: Registration & Permitting of Wells.

Objective Satisfied

The registration and permitting of wells is an ongoing process. During calendar year 2010, 87 wells were registered, and 5 of these wells were non-exempt. The tables below summarize the well registration and permitting activity through December 31, 2010.

Well Registration by Month--2010



Period	Exempt Wells		Non-Exempt Wells*				Total
	Grandfathered	New	Grandfathered	New	New I	New II	
2002	3520	76	50	0	0	0	3646
2003	379	80	4	2	0	0	465
2004	18	82	15	1	1	1	118
2005	22	91	13	-	1	3	130
2006	16	80	5	0	0	3	104
2007	22	52	4	-	6	2	86
2008	11	44	4	-	2	4	65
2009	15	42	1	-	4	7	69
2010	16	66	-	-	1	4	87
Grand Total	4,019	613	96	3	15	24	4,770

**Well Registration Summary
2002 through 2010**

*Effective March 1, 2004, the District began designating new non-exempt wells as either Classification 1 or Classification 2 as follows:

Classification 1:

- a. A well used for domestic purposes or for watering livestock or poultry;
- b. drilled, equipped or completed so it is incapable of producing more than 25,000 gpd (17 gpm); and
- c. located on a tract of land less than 10 acres in size, created after March 1, 2004.

Classification 2:

- a. A well used for purposes other than domestic, livestock or poultry, regardless of production; or
- b. a well drilled, equipped or completed so it is capable of producing more than 25,000 gpd (17 gpm), regardless of the use.

Well registration totals overtime may no longer accurately reflect the number of wells actually drilled into the ground. This is because some of the registered wells are never drilled or have been plugged. Additionally, some exempt wells may be converted to a non-exempt well at a later date. The table below shows a more accurate reflection of the number of wells on the ground.

Well Registration Adjustment Table

Type of Adjustment	Exempt Wells		Non-Exempt Wells				Accumulative Total
	Grandfathered	New	Grandfathered	New	New I	New II	
Total as of 2010	4,010	607	107	3	15	26	4766
Exempt to Non-Exempt Status ¹	0	+1	0	0	0	-1	0
Never Drilled ²	0	-9	0	0	-1	-5	-15
Plugged ³	-64	-10	-7	0	0	0	-81
Total	3946	589	100	3	14	20	4670

Adjustments made in 2010

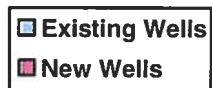
¹ N2-06-006P to E-10-083P

² N2-10-005P, N2-10-001P, E-10-039P

³ N2-06-009G, N2-05-002G, N2-05-006G, N2-04-005G, E-08-048P, E-08-046G, E-07-038P, E-03-131G

As we have seen in recent years, registration figures for 2010 show that the majority of exempt wells registered are new wells. With regard to non-exempt wells, 2010 was similar to past years in that the majority of wells registered were new wells.

Exempt Well Registration-2010



Non-Exempt Well Registration-2010



The Table below summarizes the non-exempt wells that were registered during 2010 and the corresponding permits that were issued where applicable.

Non-Exempt Wells Registered/Permitted During Calendar Year 2010

File No.	Well Owner/ Land Owner	Ac-ft/ Year	Aquifer	Use	Permit Type
N1-10-001P	Stone	0.57	Edwards BFZ	Domestic	Drilling & Operating
N2-10-001P	Armstrong WSC	483.90	Trinity (Lower)	Public Supply	Drilling
N2-10-002P	James Construction (TxDOT)	0.96	Edwards BFZ	Construction Office	Drilling & Operating
N2-10-003P	James Construction (TxDOT)	12.28	Trinity (Middle)	Concrete Batch Plant	Drilling & Operating
N2-10-004P	Fernandes	1.15	Trinity (Middle)	Irrigation	Drilling & Operating (drilling permit expired)
N2-10-005P	Temple DG, Ltd.	0.11	Trinity (Middle)	Restrooms and Irrigation	Withdrawn
*N2-10-006P	Schwertner Farms	n/a	Edwards BFZ	Commercial Livestock	Replacement
*N2-10-007P	Goode Towing	0.04	Edwards Equivalent	Office	Drilling & Operating

*N2-10-006P is part of 9 well aggregate system under an existing Historic and Existing Use Permit. N2-10-007P is a replacement well for an unregistered and unpermitted well.

During 2010, five entities in Bell County transported groundwater outside the District. A total transport of 32.98 ac-ft occurred from the Edwards BFZ aquifer and 63.27 ac-ft from the Trinity aquifer. This showed a considerable increase in the transport out of the Edwards BFZ aquifer which in 2009 was at 12.54 ac-ft and for the Trinity aquifer which saw 34.72 ac-ft transported in 2009. The District is allowed by state law to charge a transport fee of \$0.025/\$1,000 gallons transported. This generated total revenue of \$784.06 for 2010 which is slightly double the revenue from 2009 (\$385.00). A summary of transport activity for 2010 is shown in the following table.

Summary of Groundwater Transport for 2010

Entity (Water Supply Corp.)	Well Number	Aquifer	Destination (County)	Gallons	Acre-Ft	Transport Fee
Jarrell Schwertner	N-02-042G	Edwards BFZ	Williamson	10,745,900	32.98	\$268.65
Bell-Milam-Falls	N-02-038G N-02-046G	Trinity (Hosston)	Falls, Milam, Williamson	18,882,650	57.95	\$472.07
Little Elm Valley	N-02-039G	Trinity (Hosston)	Falls	599,650	1.84	\$14.99
East Bell	N-02-034G	Trinity (Hosston)	Falls	829,103	2.54	\$20.73
Oenaville & Belfalls	N-02-017G	Trinity (Hosston)	Falls	304,977	0.94	\$7.62
Total				31,362,280	96.25	\$784.06

Objective A.3: Maintain a Groundwater Database.

Objective Satisfied

The District's database is continually updated as new information is acquired.

1. Groundwater Production:

The District continued collecting data from non-exempt wells during 2010. Monthly production reports are required by the 10th day of the following month for all wells with operating permits. The tables below show the total permitted amount for the non-exempt wells and their total production. In 2010, actual water production figures were significantly lower than the amount permitted. Part of this is due to the issuance of Historic and Existing Use Permits (HEUP). The HEUPs are issued for the full permit amount, regardless of whether the permittee will be using this amount during the year.

2010 Permitted Volume for Non-Exempt Wells

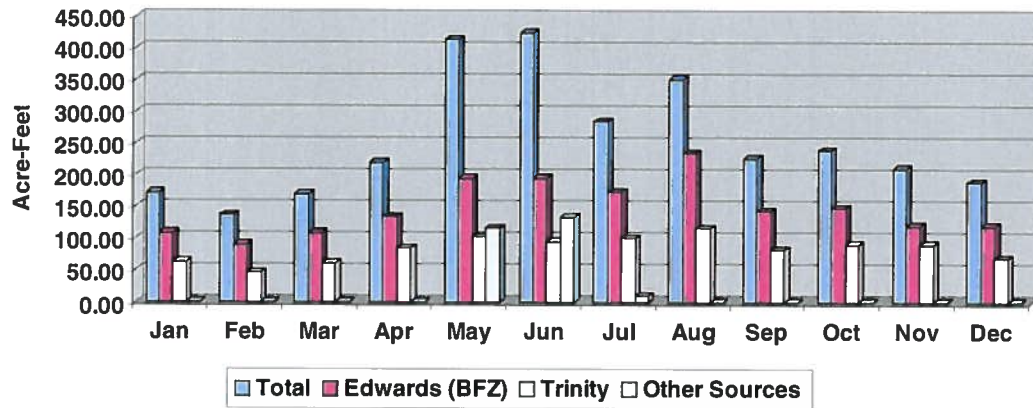
Edwards BFZ:	2,563.81 ac-ft (43 wells)
Trinity:	2,074.51 ac-ft (46 wells)
Other Aquifers:	311.39 ac-ft (15 wells)
TOTAL:	4,949.71 ac-ft (104 wells)

2010 Annual Production from Non-Exempt Wells

Edwards BFZ:	1,768.76 ac-ft (40 wells)
Trinity:	1,000.15 ac-ft (38 wells)
Other Aquifers:	261.15 ac-ft (12 wells)
TOTAL:	3,030.06 ac-ft (90 wells)

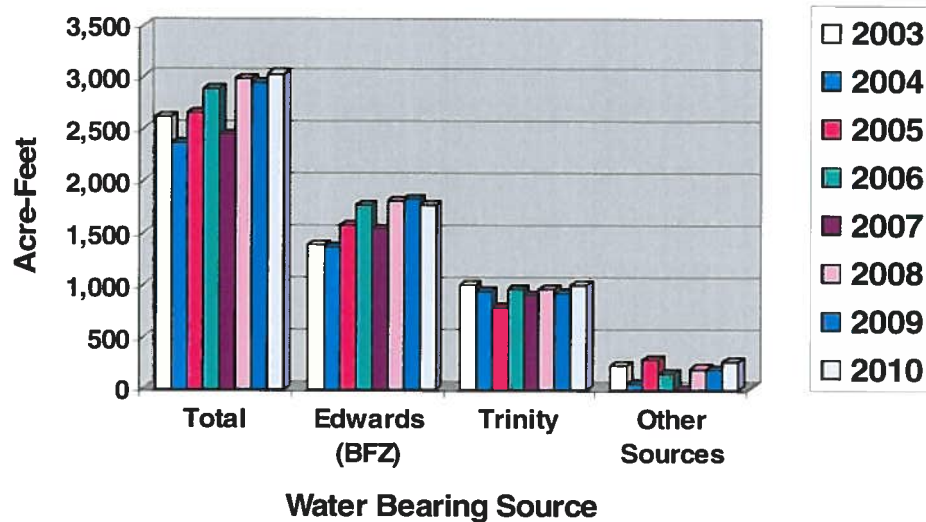
The following chart shows 2010 production by month and aquifer. Production was at its highest level during the month of June with a monthly withdrawal of 423 ac-ft. This is down from the previous year which saw a peak in production of 525 ac-ft during the month of June. Throughout the year, withdrawals from the Edwards BFZ were consistently higher than from the Trinity aquifer. Production from Other source aquifers was minimal throughout the year except for the months of May and June when it notably exceeded the monthly production for the Trinity aquifer.

Production From Non-Exempt Wells--2010



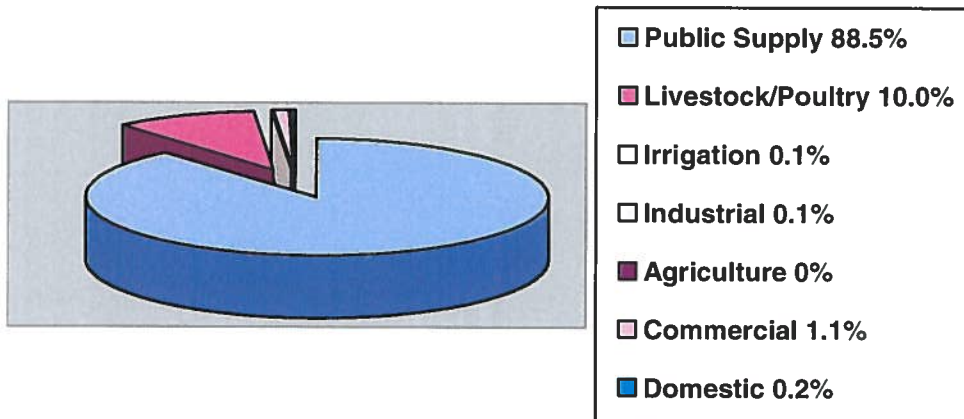
In the following graph, production from 2010 (90 wells) is shown compared to production in years 2003 through 2009. Production in 2010 was similar to the previous two years with production from the Edwards BFZ aquifer slightly lower during 2010 and production from the Trinity and Other sources slightly higher.

**Production From Non-Exempt Wells
2003-2010**

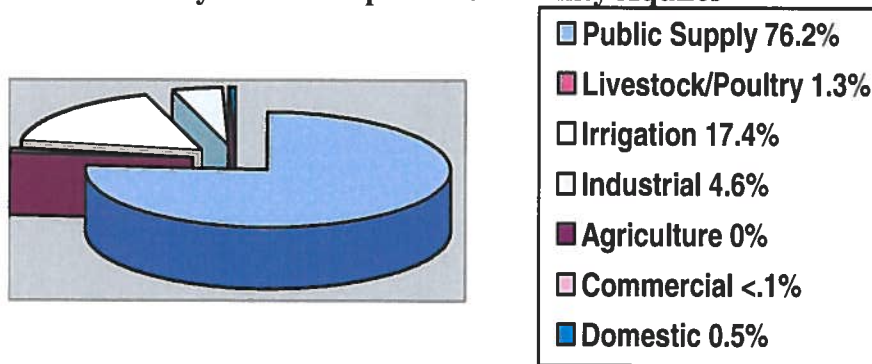


The following pie charts show how the groundwater from the different aquifers was used during 2010. In the Edwards BFZ and Trinity aquifers, water produced from non-exempt wells is used primarily for public supply purposes (88.5% and 76.2% respectively), while water produced from non-exempt wells in other formations was used primarily for agricultural use (99.4%).

**2010 Use of Groundwater
By Non-Exempt Wells –Edwards BFZ Aquifer**



**2010 Use of Groundwater
By Non-Exempt Wells—Trinity Aquifer**



**2010 Use of Groundwater
By Non-Exempt Wells—Other Groundwater Sources**



Each year, the exempt wells that have been registered are evaluated, the aquifer from which they are producing is determined and an estimate of their total annual production

is provided. The results are shown below for exempt wells registered through December 31, 2010.

***Summary of Exempt Well Production**

Aquifer	No. of Wells	Estimated Use Acre-feet/Year
Edwards BFZ	692	461
Trinity	1,866	1,244
Other Aquifers	1,918	1,284
TOTAL	4,447	2,989

**Calculations for exempt well production excluded wells that were plugged, monitor wells, and wells that were never drilled.*

Combining the production from the non-exempt wells with the estimated production from the exempt wells, the following production figures result:

Production Summary for All Wells

Aquifer	Non-Exempt Well Production (Ac-Ft/Year)	% of Total	Estimated Exempt Well Production (Ac-Ft/Year)	% of Total	Total Production (Ac-Ft/Year)
Edwards (BFZ)	1,769	79%	461	21%	2,230
Trinity	1,000	45%	1,244	55%	2,244
Other Aquifers	260	17%	1,284	83%	1,544
TOTAL	3,029	50%	2,989	50%	6,018

The chart above shows that overall, exempt wells account for 50% of all the groundwater produced in Bell County. In the Trinity, 55% of production is attributed to exempt wells; however, in the Edwards BFZ, exempt wells only account for 20% of groundwater production, with the vast majority coming from non-exempt wells. During 2010, 83% of the production from wells producing from other groundwater sources is attributed to exempt wells.

Overall, production from the Edwards BFZ aquifer accounts for 37% of total groundwater used in Bell County, with the Trinity aquifer accounting for 37%, and other aquifers accounting for 26%.

2. Aquifer Monitoring:

The Texas Water Development Board (TWDB) typically measures water levels in selected wells in January each year. Clearwater measures water levels in selected wells twice annually (January and July).

The following pages are tables that provide a summary of the monitoring data. Refer to Appendix A for a map of the aquifer monitoring sites. **NOTE: Larger numbers represent greater depth necessary to reach the surface of the aquifer, i.e. a decline in the aquifer level.** Numbers in red were taken by the TWDB (or are continuous monitoring wells), whereas numbers in blue were taken by Clearwater. Comparing the water level measurements taken by the District with those taken by the TWDB is sometimes difficult due to differences in measurement procedures and equipment. Clearwater primarily uses an e-line; an airline is used if the well is equipped with one. Large producers are asked to turn the pump off at least one hour prior to the measurement to allow the aquifer levels time to stabilize. The TWDB typically uses a steel tape or an airline and does not request the pump to be turned off.

Edwards (BFZ) Aquifer

Water Level- Depth Below Land Surface in Feet

Well Number	Other	Date of Measurement													
		Jan-Feb 04	Jul-04	Jan-05	Jul-05	Jan-Feb 06	Jul-06	Jan-Feb 07	Jul-07	Jan-08	Jul-08	Jan-09	Jul-09	Jan-10	Jul-10
58-04-627 (Salado ISD)	--	41.42	39.54	39.05	43.42	43.34	43.58	40.84	36.17	41.92	43.59	43.42	51.5	39.62	42.12
58-04-502 (Salado ISD)	(1985) 50.5	49.17	48.58	47.16	51.83	51.79	52.08	49.5	44.83	49.83	52.16	51.58	53.66	48.38	50.73
58-04-602 (Salado WSC)	(1981) 29.27	29.5 ¹	32.71 ¹	27.17 ¹	36.00 ¹	36.5 ¹	41.84 ¹	27.55 ¹	21.50 ¹	31.42 ¹	40.17 ¹	38.92 ¹	34.92 ¹	27.12 ¹	31.53 ¹
58-13-502 (City of Bartlett)	--	--	--	42.62	40.13	50.29	52.29 ¹	60.79 ¹	49.45 ¹	46.62 ¹	46.46 ¹	61.04 ¹	63.33 ¹	NA	58.04 ¹
58-04-623 (Foster Stgch)	(1993) 85.39	89.69	82.79 ¹	86.3	87.17 ¹	83.00 ¹	95.25 ¹	80.30	72.34	86.51 ⁴	72.34 ¹	88.75 ¹	85.67 ¹	67.67 ¹	81.67 ¹
58-04-628 (Cemetery) ²	--	--	--	--	--	--	--	--	--	--	--	71.91 ³	83.61 ³	39.81 ³	72.83 ³
58-04-702 (TxDOT) ²	(1980) 71	72.72	71.84	72.2	72.17	72.83	72.73 ³	72.08 ³	69.87 ³	72.07 ³	69.82 ³	72.88 ³	73.19 ³	70.43	--
58-04-816 (TxDOT) ²	--	--	--	--	--	--	--	--	--	--	124.80 ³	125.47 ³	128.15 ³	118.18 ³	120.46 ³
58-04-801 (Norwood)	(1966) 134.93	141.34	141.25	134.1	137.58	140.25	140.5	137.7	133.08	135.70	138.91	150.75	143.25	133.43	135.58

¹ Pump turned off at least 1-2 hours prior to measurement

² Continuous monitor equipment installed (data available: <http://hyper20.twdb.state.tx.us/twdbwells/twdbwells.html>)

³ Daily trend from continuous monitor site on date of water level measurements (Jul-10 daily trend for July 7th 2010)

⁴ Pump in use less than one hour prior to measurement

CUWCD
measurement

TWDB measurement

Trinity Aquifer

Water Level- Depth Below Land Surface in Feet

Well Number	Date of Measurement													
	Other	Jan-Mar 04	Jul-04	Jan-04	Jul-05	Jan-Feb 06	Jul-06	Jan-06	Jul-07	Jan-08	Jul-08	Jan-09	Jul-09	Jan-10
E-02-721G (McCallum #1)	--	--	--	--	--	145.5	132.42	135.67	153.00	146.59	160.84	153.27	151.83	
E-02-722G (McCallum #2)	--	--	--	--	--	145.00	131.92	135.17	152.25	145.83	160.25	152.83	152.07	
E-02-804G (Dobson)	--	--	--	--	--	335.75	324.50	328.71	338.92	356.42	359.83	381.65	165.75	
40-58-201 (Central Texas College)	--	--	--	--	--	--	--	--	--	--	--	87.59 ⁴	77.83 ⁴	
E-02-1137G (Stephenson/Bowen)	--	311.42	not taken	335.73 ²	342.66 ²	363.45 ²	--	--	--	--	--	--	--	
E-08-005P (Stephenson)	--	--	--	--	--	--	--	--	--	369.54	378.46	372.54	378.38	
E-02-1299G (Mayer)	--	182.1	189	180.38	201.72	200.62 ²	227.18 ²	183.29 ²	217.94 ²	204.08 ²	229.49 ²	201.77 ²	241.04 ²	192.53 ²
N2-05-008G (River Ridge Ranch East Dam Well)	--	--	--	--	--	--	164.58	144.87	181.00	184.66	202.13	172.8	178.3	
E-06-063P (Texas Veterans Land Board)	--	--	--	--	--	--	375.25	379.58	382.50	442.33	389.58	370.17	362.93	378.53
E-03-444P (Purnell)	--	--	--	--	--	--	411.92	400.58	434.42	429.67	446.58	430.58	437.38	
E-05-083P (Murphy)	--	--	--	--	--	--	282.63	288.42	291.92	323.76	368.58	326.54	345.24	
N2-07-003G (Killeen Crushed Stone)	--	--	--	--	--	--	--	344.42	376.17	377.92	377.25	383.5	375.55	
40-53-102 (USCOE- Leona Park)	(1993) 55.14	71.28	71.92	72.6	73.33	74.16	74.5	75.35	76.55	77.66	78.98	79.28	79.98	
58-05-901 (City of Holland)	(flowing)	26.19	28.21	29.9	31.84	25.96	28.3	26.1	27.04	28.80	34.04	36.63	38.825	
40-45-701 (USCOE-Winkler Park)	--	bad reading	326.09	bad rdng	--	333.29	335.54	bad reading	--	--	344.63	352.88	358.26	
40-57-601 (Copperas Cove)	--	--	--	--	--	--	--	--	--	--	--	306.94 ⁴	295.47 ⁴	
40-53-406 (Moffat WSC)	(1967) 243.55	336	416.06 ¹	340	not avail.	not avail.	333	381.26	358.16	436.70	358.16	399.74	408.98	
40-63-501 (East Bell WSC)	(flowing)	--	--	130 ³	155 ³	125 ³	150 ³	125 ³	125 ³	125 ³	130 ³	130 ³	135 ³	
N2-05-010G (River Ridge Ranch Common Park)	--	--	--	--	--	--	266.88	256.25	261.92	280.17	284.25	293.58	281.48	287.33
40-57-602 (Copperas Cove)	--	--	--	--	--	--	--	--	--	--	--	291.16 ⁴	292.71 ⁴	

¹ Pump turned off at least 1-2 hours prior to measurement

² Method of measurement was airline

³ Measurement was reported by East Bell WSC

⁴ Daily trend from continuous monitor site on date of water level measurements (Jul-10 daily trend for July 7th 2010)

TWDB measurement

CUWCD measurement

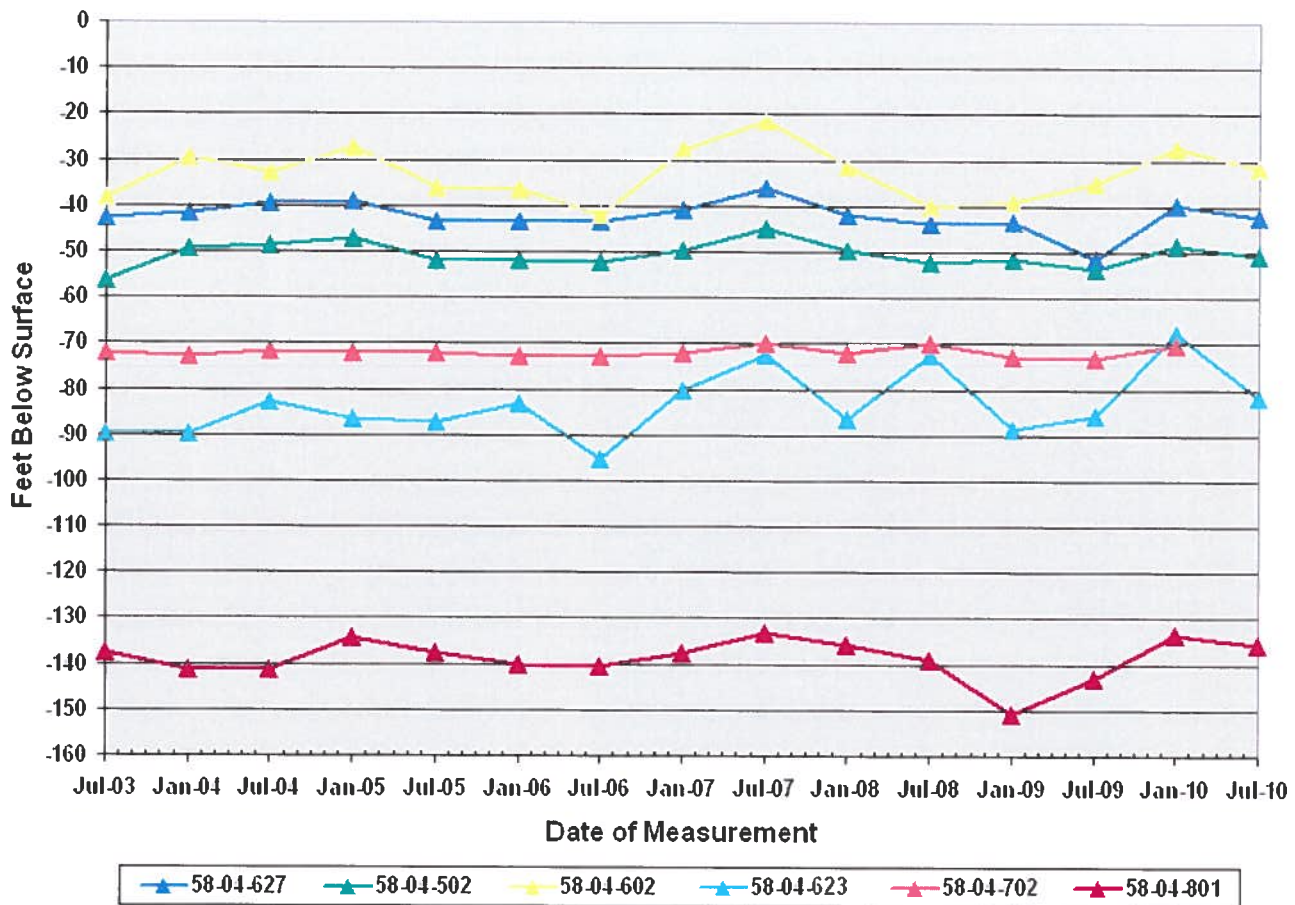
Upper Trinity (Glen Rose)

Middle Trinity (Hensell)

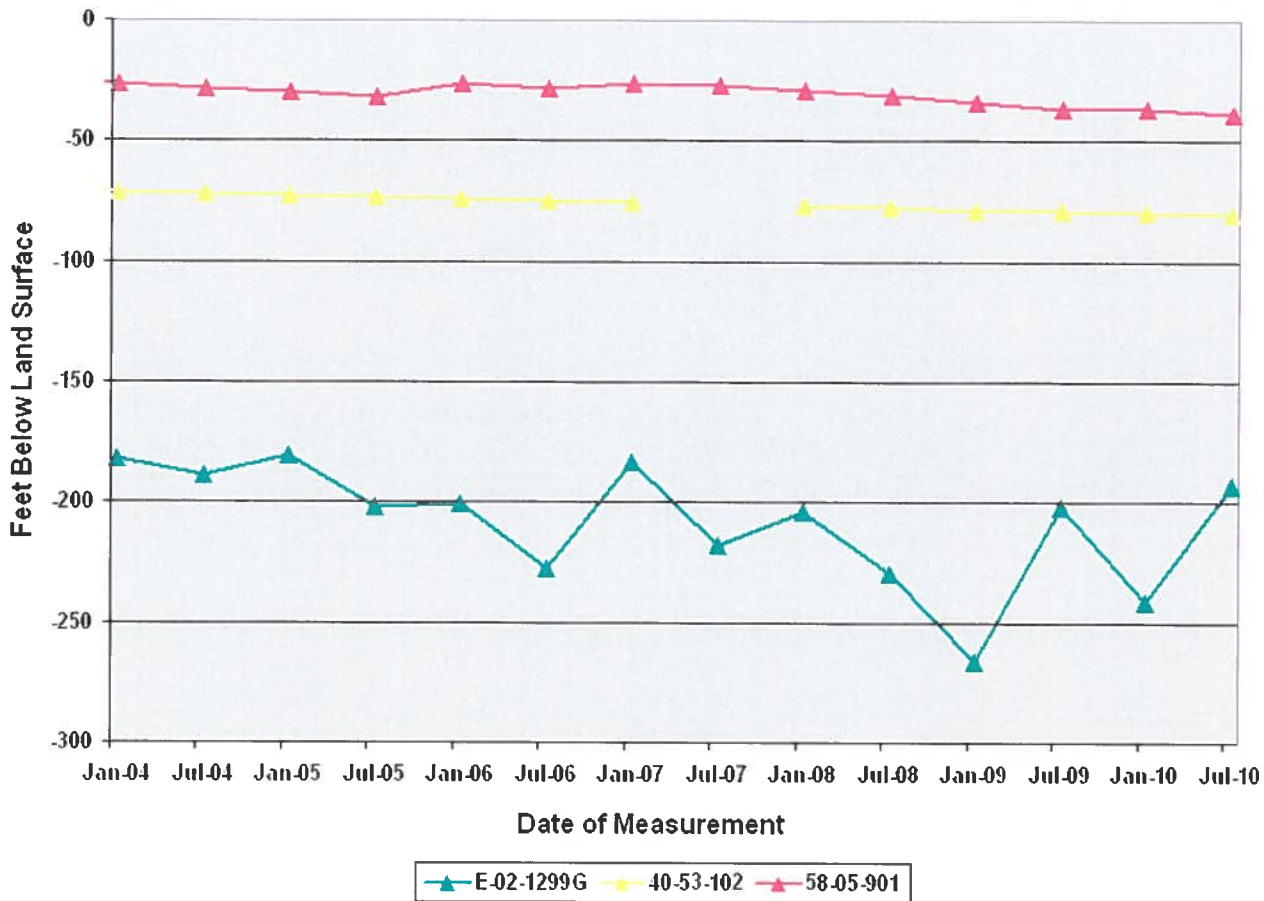
All of the Edwards wells that were measured during 2010 showed a higher water level from that which was recorded in 2009. However, for the Trinity wells, there was no set pattern with some wells recording higher levels and some recording lower levels from 2009 measurements. Some of the wells that are measured are pumped; therefore, measurements taken may not reflect static water levels.

The data for some of the TWDB well sites and a few of the sites measured by the District for both the Edwards BFZ and Trinity aquifers are shown in the following charts.

Water Levels from Edwards (BFZ) Monitor Wells in Bell County



Water Levels from Middle Trinity Monitoring Wells in Bell County



Objective A.4: Education—Water Cycle and Aquifer Status

Objective Satisfied

The District’s Management Plan requires the dissemination of educational information regarding the water cycle and the status of the aquifers through at least two outreach methods/activities. During FY10, the District satisfied this requirement as follows:

Water Cycle:

- 1) The District published a newspaper article in April 2010 that included a summary and graphic of the water cycle. This article was published in the following newspapers:

Killeen Daily Herald:	April 18, 2010
Temple Daily Telegram:	April 18, 2010
Salado Village Voice:	April 22, 2010

- 2) Splash Activity Books are geared toward 3rd grade level students and focus on the water cycle as well as water awareness and water conservation. FY10 was the fourth year the District distributed the Splash Activity Book. This book is published by the American Water Works Association. During the spring of 2010, orders were taken for 620 students in the Academy and Killeen school districts. The Splash books were delivered to the schools in May of 2010. A list of participating schools is provided in Appendix B, Activity Reports.

Aquifer Status:

- 1) The District publishes information on the status of Bell County's aquifers on the District's website. For FY10, this information included water level measurements for nine Edwards BFZ wells and nineteen Trinity wells. This information is continually updated as new measurements and wells are added.
- 2) The District published its annual newsletter in September 2010 that included graphs depicting changes in the aquifer levels for the three Edwards BFZ aquifer wells and the three Trinity aquifer wells equipped with continuous monitoring systems.

B. CONTROLLING AND PREVENTING WASTE OF GROUNDWATER

Objective: Water Quality Protection.

Objective Satisfied

The District's Management Plan requires the dissemination of educational information on eliminating and reducing the wasteful use of groundwater. It focuses on water quality protection through at least two outreach methods/activities. During FY10, the District satisfied this requirement as follows:

1) Well Plugging Demonstration

The District sponsored a well plugging demonstration during FY10. The demonstration well was a large diameter hand dug well located at 4950 Atkins Road in the Salado area. The event occurred on July 21, 2010. The Texas AgriLife Extension partnered with the District in this event.

The demonstrations showed the proper way to plug a well and emphasized the importance of plugging abandoned wells to prevent groundwater contamination. Approximately 34 people attended the demonstration.



Well Plugging Demo—Hand Dug Well
July 21, 2010
Atkins Road, Salado

2) Classroom Presentations

Clearwater staff conducted several classroom presentations during the year that included a segment on non-point source pollution. The presentation consisted of a powerpoint presentation and a groundwater model to demonstrate groundwater basics and the impact of non-point source pollution on both groundwater and surface water. Presentations were given to the following schools:

Killeen ISD -	Nolanville Elementary Clear Creek Elementary Bellaire Elementary
Temple ISD -	Kennedy-Powell Elementary
Private -	St. Mary's Catholic School in Temple Christ Episcopal Church School in Temple

Refer to Appendix B for a complete list of items distributed during these events.

C. ADDRESSING CONJUNCTIVE SURFACE WATER MANAGEMENT ISSUES

Objective: Participate in Regional Water Planning Process.

Objective Partially Satisfied

The District's Management Plan requires participation in the regional planning process by attending a minimum of two meetings of the Brazos G Regional Water Planning Group per fiscal year. During FY10, due to various conflicts, District representatives were only able to attend one meeting.

Only four regular Region G meetings were held during FY10 as follows: November 12, 2009; December 16, 2009; February 3, 2010; and July 21, 2010. District staff attended the February 3, 2010 meeting. The District's annual water symposium was held on November 12, 2009 so the Region G meeting was not attended. Staff was giving presentations at Clear Creek Elementary School on December 16, 2009 and was not available to attend the Region G meeting on that day. And finally, Clearwater held a well plugging demonstration on July 21, 2010 and therefore no one attended the Region G meeting. The agenda for the February meeting is shown in Appendix C.

D. ADDRESSING NATURAL RESOURCE ISSUES WHICH IMPACT THE USE AND AVAILABILITY OF GROUNDWATER, AND WHICH ARE IMPACTED BY THE USE OF GROUNDWATER

Objective: Monitor Water Quality.

Objective Satisfied

The District’s Management Plan requires monitoring of water quality by obtaining and testing water samples from at least six wells within the District. The District has an in-house water quality lab and offers free testing service to registered well owners. Testing parameters include coliform bacteria; alkalinity; conductivity/total dissolved solids; fluoride; hardness; nitrate; nitrite; pH; phosphate; and sulfate. During FY10, the District satisfied this requirement as follows:

Aquifer Formation	CUWCD Well #	Test Date
Austin Chalk	E-02-144G	10/20/2009
Edwards BFZ	E-02-728G	10/20/2009
Edwards BFZ	E-03-411P	9/29/2010
Lower Trinity	E-02-612G	7/13/2010
Upper Trinity	E-02-3415G	12/22/2009
Upper Trinity	E-02-1984G	9/15/2010
Upper Trinity	E-02-670G 2 samples	9/15/2010
Middle Trinity	E-09-057P	8/31/2010

Staff conducted 13 testing events that included 10 groundwater samples and three surface water samples. One of the groundwater samples was outside of Bell County. The remaining nine groundwater samples involved eight wells from the following aquifers: three wells in Upper Trinity; two wells in Edwards BFZ; one well in Lower Trinity; one well in Middle Trinity; and one well in Austin Chalk. A summary of the well testing results and a location map of the well sites are shown in Appendix D.

E. ADDRESSING DROUGHT CONDITIONS

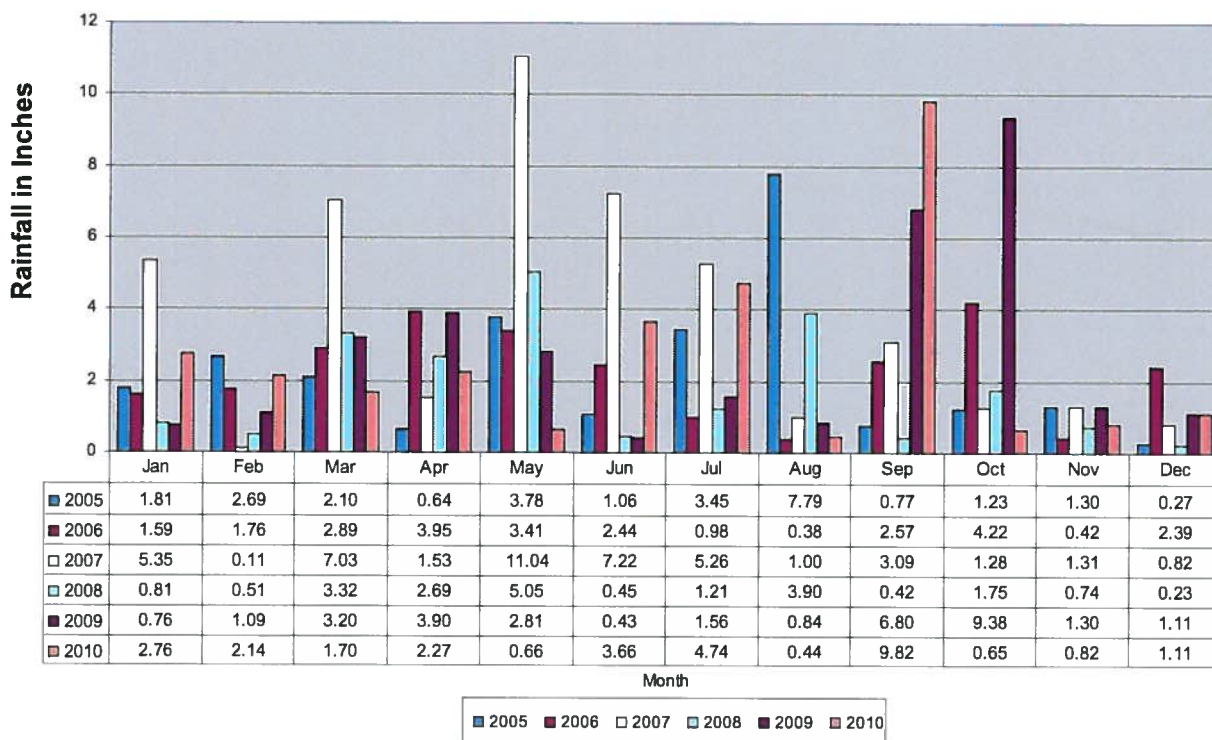
Objective E.1: Palmer Drought Severity Index Map and Drought Preparedness Council Situation Report.

Objective Satisfied

As required by the District’s Management Plan, each month staff downloads updated data from the Palmer Drought Severity Index (PDSI) map and checks for updates to the Drought Preparedness Council Situation Report (Situation Report) that is posted on the Texas Water Information Network website. This information is presented to the Board and is included in Appendix E. During 2010, the Palmer Drought index ranged from “Near Normal” to Moderately Wet. The index reached the highest reading for the region for the year at “Extremely Moist” by February/March 2010. The index reading reduced to the lowest category reading of the year of Moderate Drought by August 2010. Conditions then stabilized for a “Near Normal Spell” category level through December 2010.

During FY10, the District continued to monitor rainfall that was recorded or observed by Doppler radar by the National Weather Service (NWS) and the National Oceanic and Atmospheric Administration. Each month, the District downloaded the GIS files that contain the rainfall data. The data is mapped and provided for the public over the District’s website and at Board meetings. This information will be used in conjunction with Salado Spring flow data for implementation of a Drought Contingency Plan. The chart below shows the average total rainfall in Bell County by month. The average is generated from the 206 data points that are spaced approximately 2.5 miles apart.

Bell County Average Rainfall in 2005-2010



The total average rainfall in Bell County for 2010 was 30.77 inches. This represented a slight decrease to the total amount received in 2009 at 33.17 inches. However, total average rainfall for Bell County for 2010 was still a drastic increase when compared to the total average rainfall for year 2008 at 21.08 inches. Historically average annual rainfall in Bell County is approximately 34 inches, confirming 2010 rainfall as almost average compared to the past five years. During 2010, rainfall was focused mainly in July and September. The remaining months recorded considerably less rainfall ranging from 0.44 inches to 2.77 inches for 2010. Bell County progressed from a moderately wet rating to a severe drought and then stabilized at near normal spell rating in 2010 according to the Palmer Drought index. Appendix F contains a map of the yearly rainfall totals for the 206 data points.

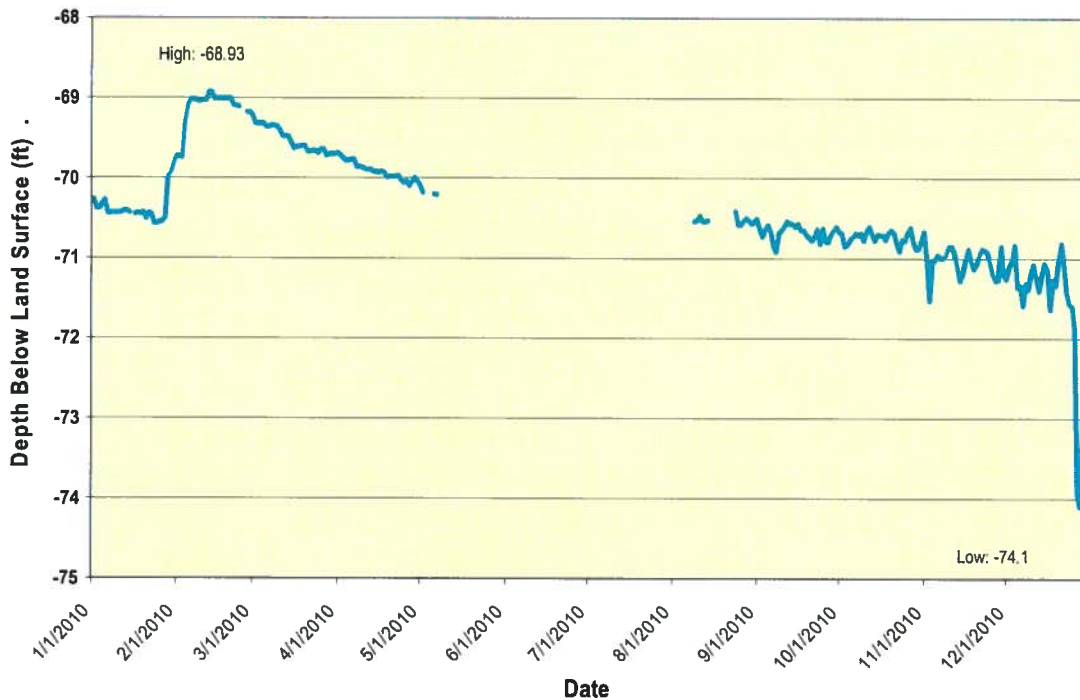
Objective E.2: TWDB Continuous Monitoring Wells.

Objective Satisfied

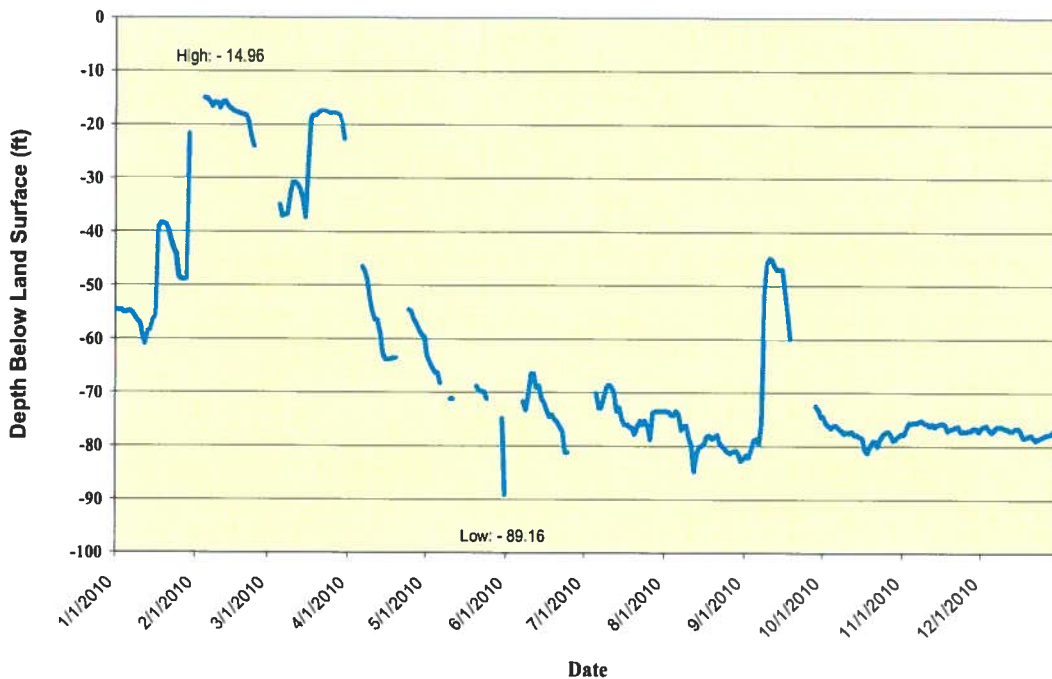
The District's Management Plan requires monitoring of drought conditions by reviewing data from the TWDB monitor wells in Bell County that are equipped with a continuous monitoring system. Three wells in the Edwards BFZ aquifer are equipped with continuous monitoring systems. During FY10, the monitoring network was expanded when three newly drilled wells in the Trinity aquifer in western Bell County, began recording data. Clearwater is considered a Cooperator with the TWDB in providing monitoring well data. Data from the wells is tied into the TWDB satellite system and is available for viewing on their website.

The graphs below show the data collected by the continuous monitor wells in the Edwards BFZ. Measurements are collected every hour. The readings show an overall decrease in 2010. Water level readings ranged from 68.93 ft. below land surface (BLS) in February 14, 2010 to 74.1 ft. in December 28, 2010, representing a 5.17 foot decrease in water level during this period. The average reading during 2010 was 70.39 ft. BLS.

**Continuous Monitor Well # 5804702 (FM 2843)
Edwards Aquifer 2010**

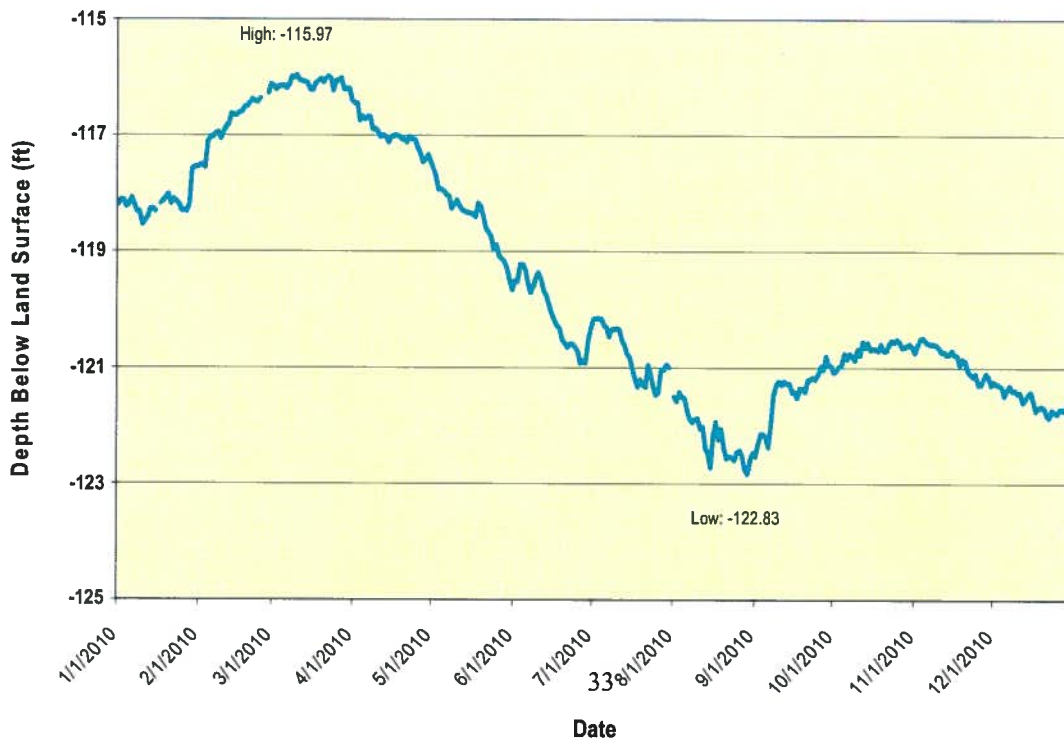


**Continuous Monitor Well # 5804628 (Salado Cemetery)
Edwards Aquifer 2010**



The graph above shows the data collected by the continuous monitor site located at the Salado Cemetery grounds during calendar year 2010. Collection of measurements began on May 6, 2008 at 1:00 and has continued every hour since then. The readings show an overall decrease in 2010. Water level readings ranged from -14.96ft. BLS on February 4, 2010 to 89.15 ft. BLS on May 31, 2010, representing a 74.19 foot decrease in water level during this period. The average reading during this time was 54.6 ft. BLS.

**Continuous Monitor Well # 5804816 (IH 35)
Edwards Aquifer 2010**



The graph above shows data collected by the continuous monitoring site located along the southbound lanes of I35 at the Salado rest stop during calendar year 2010. Collection of measurements began on May 6, 2008 at 15:00 and has continued every hour since then. The readings show an overall decrease in 2010. The Water level readings ranged from -115.97ft. BLS on March 10, 2010 to 122.83 ft. BLS on August 29, 2010, representing a 6.86 foot decrease in water level during this period. The average reading during this time was 118.2 ft. BLS.

F. ADDRESSING CONSERVATION RECHARGE ENHANCEMENT, RAINWATER HARVESTING, PRECIPITATION ENHANCEMENT, OR BRUSH CONTROL, WHERE APPROPRIATE AND COST-EFFECTIVE

Objective F1: Promote Conservation.

Objective Satisfied

The District's Management Plan requires promotion of conservation by one outreach method/activity. During FY10, the District satisfied this requirement by conducting an essay and poster contest on water conservation. This contest was conducted during the Fall of 2009 and was open to all 5th grade students in Bell County. The theme of the contest was *Don't Go With the Flow....Stop the Drop!* Winners received savings bonds in the amount of \$100 (3rd place) \$250 (2nd place) and \$500 (1st place). A total of 163 entries were received. No award was given for the third place poster so only five winners were recognized. A copy of the flyer announcing this contest is located in Appendix G.

Essay and Poster Contest Winners



Essay Winners:

- 1st Melanie Foutz (Killeen ISD)
- 2nd Lily Feaster (Troy ISD)
- 3rd Tanner Hernandez (Troy ISD)

Poster Winners:

- 1st Adrianna Brewer (Troy ISD)
- 2nd Emily White (Temple ISD)

Objective F2: Promote Rainwater Harvesting.

Objective Satisfied

The District's Management Plan requires promotion of rainwater harvesting by posting information on the District website. The District satisfied this requirement by including a segment on rainwater harvesting on its website under the Education menu tab along with a link to the Texas AgriLife Extension website and their Rainwater Harvesting Manual. Also included are links to Rainwater Harvesting Contacts and Suppliers and to the Texas AgriLife Extension manual on Rainwater Harvesting Landscape Methods. A copy of the posted information is included under Appendix H.

Objective F3: Provide Information on Recharge Enhancement and Brush Control.

Objective Satisfied

The District’s Management Plan requires promotion of conservation by providing information relating to recharge enhancement and brush control on the District website. The District satisfied this requirement by including a segment on recharge enhancement and brush control on its website under the Education menu tab. For additional information on recharge enhancement and brush control, links to the Texas State Soil and Water Conservation website, the Leon River Restoration Project website, and the Texas Cooperative Extension website are provided. Also included is a link to the Brush Management Fact Sheet produced by Environmental Defense. A copy of the posted information is included under Appendix I.

G. ADDRESSING IN A QUANTITATIVE MANNER THE DESIRED FUTURE CONDITIONS OF THE GROUNDWATER RESOURCES

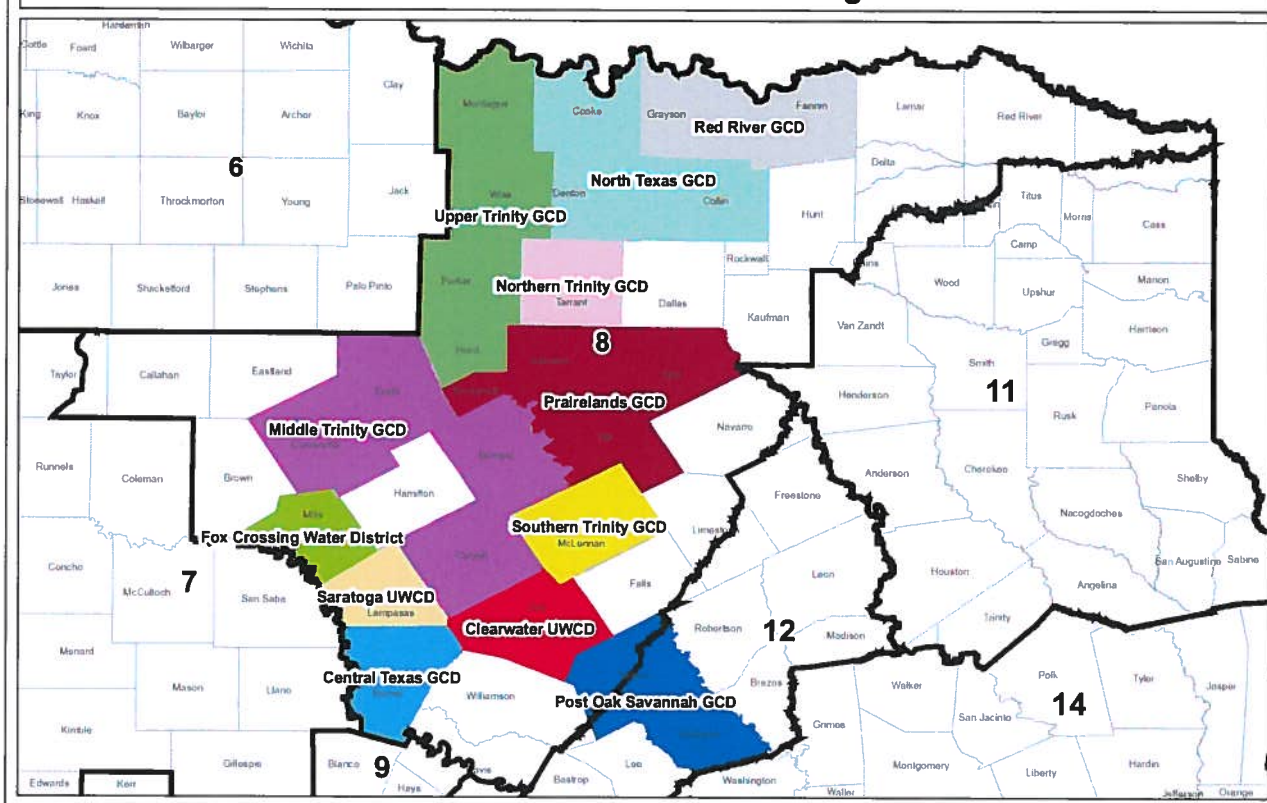
Clearwater has been working toward this management goal since November 2005 when the first meeting of Groundwater Management Area 8 (GMA8) was held. GMA8 is responsible for determining desired future conditions (DFC) for the nine major and minor aquifers within its 45 county boundary. These aquifers are as follows:

Edwards BFZ	Brazos River Alluvium	Ellenburger-San Saba
Trinity	Blossom	Hickory
Woodbine	Nacatoch	Marble Falls

DFCs for all of these aquifers were set by GMA8 before the September 2010 deadline. The TWDB prepares the resulting managed available groundwater (MAG) figures based on the DFC statements and then forwards these figures to the Regional Water Planning Groups. At the end of FY10 MAGs were provided by TWDB for all the aquifers except the Nacatoch. The MAG figures for the Edwards BFZ and Trinity aquifers are being used by the District and will be included in the next revision of the District management plan.

During FY10, Clearwater continued acting as the fiscal agent/administrator for GMA8 coordinating with eleven other groundwater conservation districts (GCD). Clearwater serves as the point of contact for the public and agencies, maintains the GMA8 website, and coordinates the committee meetings. Clearwater’s GMA8 representative frequently chairs the committee meetings and keeps the committee focused on set deadlines. GMA8 held one meeting during FY10 on March 10, 2010.

Groundwater Districts in GMA Region 8



4. MISCELLANEOUS ACTIVITIES

In addition to the Management Plan requirements, Clearwater is involved in several miscellaneous activities as follows:

- A. Edwards BFZ Aquifer Recharge Zone Studies
- B. Salado Creek Stream Flow Gauging Program
- C. Drought Management Plan
- D. Strategic Plan Update
- E. Water Quality Testing by Certified Lab
- F. Abandoned Wells
- G. Bell County Water Symposium
- H. Newsletter
- I. Major Rivers Water Education Program
- J. Book Cover Distribution
- K. Literature Packet Distribution
- L. Water Conservation Kits
- M. Presentations and Outreach
- N. Public Advisory Committee
- O. Internet Site
- P. Resource Library
- Q. Inactive Programs

These activities are discussed in more detail below.

A. EDWARDS BFZ AQUIFER RECHARGE ZONE STUDIES

Discussions regarding the protection of the Edwards BFZ aquifer recharge zone began in FY08. In FY10, following a stakeholders meeting in September 2009, the Board authorized four studies to be conducted by BAR-W Groundwater Exploration, LLC with a completion target date of September 30, 2010. These studies are as follows:

- Identify geologic structures in the recharge zone and transition zones.
- Select wells for water level measurements; prepare contour map of the aquifer.
- Select wells for 3 pumping tests; evaluate results.
- Select 10 wells near eastern aquifer boundary for water quality testing; evaluate results.

The studies were not completed at the end of FY10 and have continued into FY11.

B. SALADO CREEK STREAM FLOW GAUGING PROGRAM

The District began collecting data from the Salado Creek stream flow gauges during FY08. During FY10, the Board contracted with Hanson Consulting to upgrade various aspects of the system which would include the automatic collection of data and posting of this data on the District website. In September 2010, following a major flooding event, both gauges were lost

and the system was therefore incapacitated. As a result, the automation was temporarily placed on hold. Replacing the gauge system was ongoing into FY11.

C. DROUGHT MANAGEMENT PLANS

A draft Drought Management Plan (DMP) for the Edwards BFZ aquifer was adopted during FY09. This Plan was refined and formally adopted along with the DMP for the Trinity aquifer in FY10. Compliance with both Plans is currently voluntary.

In FY10, the initiation and termination stages were revised along with the trigger for initiating the drought stages. The trigger in the Trinity DMP is based on the precipitation deficit index (PDI) for Bell County; however, a more localized method of determining drought was desired. The PDI is monitored daily on a running-year basis over a defined area consisting generally of the area of Bell County with a buffer zone of approximately 10 miles around the County-line as truncated by the down-dip extent of the Trinity aquifer and based on NEX-RAD rainfall data provided by the National Oceanic and Atmospheric Administration. The PDI for this area is developed every day and compared to the average annual rainfall.

There are two triggers for initiating drought stages in the Edwards BFZ DMP. The first uses the same PDI as the Trinity except that the area of data collection is limited to the Edwards BFZ aquifer and contributing areas in Bell and portions of Williamson Counties. The second trigger is spring discharge which is monitored daily with the daily maximum discharge values averaged over a period of five consecutive days on a running five day basis. This data is provided by the Salado Creek stream flow gauges.

As previously mentioned, the spring discharge and PDI data collection was being automated during FY10 but was temporarily placed on hold until the gauge system has been reactivated, which will occur in FY11.

D. STRATEGIC PLAN

The District developed a Strategic Plan during FY08, to prioritize the District's activities and objectives. This Plan was reviewed and updated during FY10. The revised plan is provided in Appendix N.

E. WATER QUALITY TESTING BY CERTIFIED LAB

In FY07, Clearwater began supplementing water quality testing conducted by the Texas Water Development Board (TWDB). TWDB collects water samples for testing from selected wells approximately every five years—five Trinity wells and one Edwards well. Clearwater added nine test sites—two Edwards wells, six Trinity wells, and one sample from Salado Creek. The sites have been split into two groups with testing rotated every year. Group A was testing in FY09; Group B was testing in FY10. Group B includes four sites with one from each of the three Trinity layers and one from the Edwards BFZ aquifer. The samples were

processed by the Lower Colorado River Authority Environmental Laboratory Services (LCRA ELA). The testing results and locations are included in Appendix K.

F. ABANDONED WELLS

The District continues to coordinate with the Texas Department of Licensing and Regulation (TDLR) to identify and investigate reports of abandoned wells. After initial investigation, staff refers abandoned wells to TDLR for further investigation, determination of corrective action, and enforcement. The District did not refer any abandoned wells to TDLR during FY10.

The District continues to work with the Bell County Public Health District for assistance in locating abandoned wells when septic systems are inspected. The District promotes the plugging of abandoned wells by distributing educational information at various conferences and events and hosting well plugging demonstrations with the Texas AgriLife Extension. According to records from the Texas Department of Licensing and Regulation, during FY10 a total of 20 wells were plugged in Bell County—13 water wells and 7 monitor well.

G. BELL COUNTY WATER SYMPOSIUM

During FY10, Clearwater sponsored its ninth annual water symposium on November 12, 2009 at the Central Texas Council of Governments Building. The District partnered with the Texas AgriLife Extension and was able to provide Continuing Education Units for Private and Commercial Pesticide Applicators. Other partners included Bell County, BarW Groundwater Exploration, LLC, AECOM, Inc., and Lloyd Gosselink Attorneys at Law.

Symposium topics included information on the aquifers in Bell County, status of Central Texas' water supply and future water plans, aquifer storage and recovery, legislative update, and water quality issues focusing on non-point source pollution, watershed protection plans, and septic systems.



**Bell County Annual
Water Symposium,
November 12, 2009**

The District set up a display and distributed water conservation kits as well as other information on water conservation, water quality protection and information on the aquifers. Approximately 83 people attended the symposium. Refer to Appendix J for an agenda of the meeting. Appendix B contains the Activity Report that lists the items distributed during this event.

H. NEWSLETTER



The District published its seventh annual newsletter—*The Clearwater Source*—during the latter part of FY10. The newsletter was mailed in September to all registered well owners. Newsletter articles included an update on the District’s plans to separate from CTCOG; water sources for Bell County; water conservation; water quality protection; District activities; well registration and production; data on rainfall, lake levels, and aquifer levels; and the president’s message on Clearwater’s progress.

I. MAJOR RIVERS WATER EDUCATION PROGRAM

Each year the District sponsors the Major Rivers Water Education Program. This program is geared toward 4th and 5th grade students. During the spring of 2010, orders were taken for 227 students and 7 teachers in the Killeen and Academy independent school districts. The Major Rivers Program material was delivered to the schools in May 2010. A list of participating schools is provided in Appendix B, Activity Reports.

J. BOOK COVER DISTRIBUTION

The District again participated in purchasing book covers during FY10 for all middle and high school students in Bell County with distribution to occur during the 2010/2011 school year. The book covers provide information on the importance of water and water conservation, and a brief overview of the District, including its goals and objectives. A total of 35,500 book covers were distributed to the students at the start of the school year during August and September 2010. The book covers distributed are shown in Appendix K.

K. LITERATURE PACKET DISTRIBUTION

The District compiles literature packets containing a variety of information on water conservation, the water cycle, and water quality. The packets are distributed to Bell County schools—one per campus—for each fall semester. Packets were distributed during the month of September and included 106 packets. A list of schools and the items distributed are found in Appendix B, Activity Reports.

L. WATER CONSERVATION KITS

To promote public awareness and encourage water conservation, the District distributes water conservation kits at special events. The water conservation kits include the following items: faucet aerator; one touch on/off tap saver; 7 spray water saving hose nozzle; toilet leak detector dye tablets; shower flow meter bag; and lawn and garden rain gauge. These items were available for distribution at the following events: Annual Bell County Water Symposium (11-12-09); and Annual Crops Clinic (1-26-10). Refer to Appendix B for the Activity Report that lists the items distributed at these events.

M. PRESENTATIONS AND OUTREACH

Clearwater continues to promote public awareness of the District, water resources in Bell County and water conservation. Board members and staff have spoken to several groups and schools throughout the year and have attended various events and provided information for distribution regarding the District, groundwater resources, water cycle, water quality protection, and water conservation as identified below. (See Appendix B for the Activity Report that lists the material distributed.)

<u>Presentations</u>	<u>Date</u>	<u># Distributed</u>
5 th Grade—Nolanville Elementary—Killeen ISD	10-29-09	438
5 th Grade—Nolanville Elementary Field Day at Chalk Ridge Park—Killeen ISD	11-13-09	--
5 th Grade—Kennedy-Powell Elementary—Temple ISD	12-09-09	560
3 rd -- 5 th Grade—Clear Creek Elementary—Killeen ISD	12-16-09	546
5 th Grade—St. Mary’s Catholic School—Temple	01-13-10	182
5 th Grade—Christ Episcopal Church School—Temple	04-22-10	150
Fort Hood Earth Day School Event—Fort Hood Stadium	04-23-10	909
5 th Grade—Bellaire Elementary—Killeen ISD	07-01-10	425
Democratic Women’s Organization—Speaker, TX AgriLife Extension, Belton	09-18-10	150
TOTAL		3,360

<u>Other Events</u>	<u>Date</u>	<u># Distributed</u>
Bell County Water Symposium—CTCOG Bldg., Belton	11-12-09	848
Annual Crops Clinic—Bell Co. Expo, Belton	01-26-10	969
Cen-Tex Sustainable Communities—Killeen Civic Center, Killeen	01-27-10	133
Essay/Poster Contest Participants	03-11-10	672
Rainwater Harvesting Workshop—Harker Heights	04-21-10	91
TX AgriLife Extension Jr. Master Gardener Training	07-30-10	80
TOTAL		2,793

N. PUBLIC ADVISORY COMMITTEE

The PAC members for FY10 are as follows

Tom Madden	-	Precinct 1
Henry Bunke	-	Precinct 2
Marvin Green, PAC Chair	-	Precinct 3
Bradley Ware	-	Precinct 4
David Cole	-	At-Large

The PAC meets on an as-needed basis; no meetings were held during FY10. Throughout FY10, PAC members have regularly attended the Clearwater Board meetings, providing representation at all but one of the regular monthly Board meetings. The PAC has provided valuable comments to the Board members at these meetings. The Board continues to value the input from the PAC and will assign tasks to them as needed.

O. INTERNET SITE

The District's web site (www.clearwaterdistrict.org) continues to grow since it was first developed in the spring of 2001. The web site contains general information about the District and Board of Directors; calendar of events; press releases; meeting agendas; District Management Plan; District Rules; links to water-related sites; District forms; an overview of the District including a summary of activities; aquifer data; and educational information including data on water use and water conservation tips.

Records indicate that the top pages accessed during FY10 were the 10th Annual Water Symposium; Legislative Update – EAA v. Day & McDaniel; September 2009 Newsletter; News-Drought Management Plan Adopted; and Scheduled Meetings. Information will be added to the web site during the next year as needed.

P. RESOURCE LIBRARY

The District maintains a resource library to help promote public education and conservation of our water resources. The resource library consists of videotapes and literature focusing on the water cycle, groundwater, water conservation, and other water-related issues. This information is designed for age groups from pre-K to college level. The information in the Clearwater library is available for use by the public. A listing of the library material is shown in Appendix L.

Q. INACTIVE PROGRAMS

Trinity Aquifer Study in Southern Bell County.

In 2003, the District contracted with TCB, Inc. now AECOM, Inc. to conduct a study of the Trinity aquifer in southern Bell County due to the increase in residential development and the use of individual wells for water service. The study was to determine the hydrogeologic properties of the aquifer in this area and the volume of water in storage and was later expanded to include calculation of the volume of groundwater stored in the three aquifer subdivisions (upper, middle, and lower) for the entire county.

To enhance the Trinity Study and clarify some of the discrepancies identified in the study, Clearwater authorized up to four geophysical logs of wells be conducted in southwestern Bell County to help determine where the Trinity layers are located and the thickness of the layers. The logs will be completed as opportunity allows when new wells are drilled to the lower Trinity. One log was completed in FY07 (Miller), one in FY08 (Texas Veterans Land Board) and one in FY09 (Conway). A draft report has been presented; the final report has not yet been delivered.

Subdivision Groundwater Availability Report Review.

The District continues to coordinate with the county commissioners and staff to ensure new subdivisions have an adequate source of water supply. The District's goal is to inform developers and potential purchasers of the groundwater resources in Bell County. No new subdivisions requiring a groundwater availability report were presented to the District during FY10.

Water Quality Protection Grant Program.

The District's Water Quality Protection Grant Program provides financial assistance to local governmental entities and other non-profit entities that provide public drinking water. The funds are to be used to implement measures or recommendations that protect water quality. The District did not receive any grant applications during FY010.

Non-Exempt Well Meter Program.

As part of the FY10 budget, the Board approved \$1,000 toward purchasing meters for those non-exempt wells that were "grandfathered" and do not have a meter. Many of these well owners are estimating production, whereas a meter would ensure accurate reporting. No one participated in this program during FY10.

5. SUMMARY

During FY10, Clearwater continued to acquire data for use in managing Bell County's groundwater resources. Data was collected regularly from the stream flow gauge sites in Salado Creek which are used to estimate spring discharge from the Edwards BFZ aquifer. Three continuous monitoring wells were equipped in the Trinity aquifer bringing the total of continuous monitoring wells to six.

Data acquisition also included ongoing projects like the aquifer monitoring program and monthly production reports from non-exempt wells, as well as estimates of exempt well use which are updated biannually. Samples from wells were also collected for testing at a certified lab to provide an example of water quality in a given area.

During FY10, Clearwater adopted a drought management plan for the Trinity aquifer and adopted a revised drought management plan for the Edwards BFZ aquifer. Four studies were authorized to gather more information on the Edwards BFZ aquifer. Staff assisted by collecting data from selected wells.

Clearwater contracted to automate the collection of data from the Salado Creek Stream Flow Gauging Program to monitor Salado Springs. The update was temporarily placed on hold when the gauges were lost in the September 2010 flooding event. The data will be available to the public on the Clearwater website. Rainfall data to support the District's drought management plans will also be automated and available on the website.

Clearwater continued its participation in GMA 8. DFCs for all nine aquifers with the GMA8 boundary were set before the September 2010 deadline. At the end of FY10, the TWDB had prepared managed available groundwater (MAG) figures for all the aquifers except the Nacatoch and had forwarded these figures to the Regional Water Planning Groups. The MAG figures for the Edwards BFZ and Trinity aquifers are being used by Clearwater and will be included in the next revision of the District management plan.

Public education and service continued to be a major focus of Clearwater during FY10. District staff visited several schools giving presentations focusing on Bell County's aquifers, water conservation, and non-point source pollution. In addition, the annual water symposium continued to be a major outreach opportunity.

During FY10, Clearwater decided to move forward with plans to disconnect from CTCOG. Property was purchased, an architect was selected and building plans were completed. Tentative staff positions, salaries, and benefits were established. In the latter part of 2010, the Board makeup changed along with parameters for the new building. The construction bids were rejected.

During FY11, Clearwater will determine whether to proceed separating from CTCOG. Data on the aquifers will continue to be acquired and the stream flow gauges on Salado Creek will be replaced; automation of the data collection will be completed and the data will be available to the

public on the Clearwater website. Rainfall data to support the District's drought management plans will also be automated and available on the website as well. The District will complete and evaluate the four Edwards BFZ aquifer studies and determine the best way to proceed to protect the recharge zone. Data from the Trinity aquifer monitoring wells will be collected and reviewed to determine whether management of the Trinity aquifer by layer is the appropriate course to follow. The District Management Plan will be revised to incorporate the desired future condition statements and managed available groundwater figures established through the groundwater management area joint planning process.