

2014 Annual Report

Hays Trinity Groundwater Conservation District

Presented by Rick Broun, General Manager

Staff Members: Tressy Gumbert and Al Broun P.G. 4845

2014 ANNUAL REPORT OF
HTGCD GOALS, MANAGEMENT OBJECTIVES & PERFORMANCE
STANDARDS

As required in the Hays Trinity Groundwater Conservation District bylaws (4.2,a) an annual report shall be provided to the Board of Directors by District staff on the status of the District and its programs. The Groundwater Management Plan, adopted by the District on March 28, 2011, serves as a guide for the District's annual reports. The 2014 annual report follows this format.

The Groundwater Management Plan describes a methodology for tracking progress in achieving management goals and provides for the preparation and presentation of an annual report to the Board of Directors.

1.0 Providing the most efficient use of groundwater

A District education and information sharing program covering local groundwater issues, will be continued.

1.1 Management Objective

Each year the District will hold at least one educational event.

1.1 Performance Standard

Each year a summary of the District's educational events will be included in the Annual Report. The following list identifies District participation in multiple educational, technical and community events.

Attended, participated, hosted or presented in the following events:

January 2014

Hosted: Meeting with local resident concerning drought

Attended: Dripping Springs Water Supply Corporation Board meeting

Hosted: Meeting with local subdivision HOA

Attended: Hays County Commissioners Court, rainwater

February 2014

Attended: Austin Geological Society, field trip

Attended: Austin Geological Society, Lecture

Hosted: Meeting with Texas State University students

Attended: Dripping Springs Water Supply Corporation meeting

Hosted: Meeting with Texas State University students

Hosted: Meeting with local resident, water management

Hosted: Meeting with local resident, HTGCD Video presented

Attended: Central Texas Water Conservation Symposium

Hosted: Meeting with local resident, HTGCD Video presented

March 2013

Attended: Austin Geologic Society, Lecture

Attended: Meeting with Blanco Pedernales GCD, geology

Attended: Regional Water Quality Protection Plan Working Group

Attended: Austin Geologic Society, Lecture

April 2014

Attended: Cypress Mill Geology, field trip
Attended: Dripping Springs Water Supply Corporation meeting
Attended: Cypress Creek Watershed Project Stakeholder Committee
Attended: Cypress Creek Watershed Project Stakeholder Committee
Participated: GMA9 Manager's meeting
Presented: Firehouse Business Center Board of Directors
Attended: Kent Butler Summit

May 2014

Attended: Austin Geologic Society, Lecture
Participated: GMA9 Manager's meeting
Attended: Cypress Creek Watershed Project Stakeholder Committee
Presented: Drought conditions and permit requirements with local business
Presented: Drought conditions with local subdivision
Attended: Regional Water Quality Protection Plan Working Group

June 2014

Attended: Cypress Creek Watershed Protection Plan meeting
Participated: Meeting with Barton Springs GM, groundwater
Attended: Cypress Creek Watershed Protection Plan meeting, hydro review

July 2014

Attended: Cypress Creek Watershed Protection Plan meeting
Hosted: Meeting with local geoscientists and UT students, groundwater
Participated: GMA9 Manager's meeting
Participated: Meeting with County Commissioner and State Representative

August 2014

Participated: GMA9 Manager's meeting
Participated: Meeting with Travis County, groundwater development
Hosted: Meeting with permit holder, drought conditions
Attended: Texas Rural Water Association, presentation
Attended: Austin Geologic Society, lecture

September 2014

Participated: GMA9 Manager's meeting
Attended: CARD meeting
Attended: Cypress Creek Watershed Protection Plan meeting

October 2014

Attended: Austin Geologic Society lecture
Attended: Texas Public Policy Foundation, Rehydrating Texas
Participated: Meeting with DSWSC, future growth
Hosted: Field Trip, Tobin Ranch
Hosted: HTGCD Educational Workshop
Participated: Rainwater Revival, festival
Participated: Meeting with WTCPUA, future growth

November 2014

Attended: Austin Geologic Society, lecture

Hosted: Land Management Educational Workshop, video

Attended: Wimberley Water Supply Corporation, meeting

December 2014

Attended: Austin Geological Society lecture

Participated: GMA9 Manager's meeting

The District produced two important educational videos in 2011, "Exploring the Trinity Aquifer" and "HTGCD Background". Both videos are intended for public use and can be easily found on the District's home page. These videos provide insight on the inner workings of the District and outline some basic hydrogeological concepts of the Trinity Aquifer System in Hays County. In 2014 the District publicized the availability of the videos in Board meetings and showed the videos at the District office for interested constituents.

In October 2014, the District held its first Educational Workshop BBQ for all its operating permit holders. Attendees were presented educational information concerning meters and how to read and report them properly. Drought sign sets, including all three levels of drought stages, were handed out in hopes to further reach out to the public.

2.0 The District has a goal to implement measures for managing and preventing waste of groundwater.

2.1 Management Objectives

Each year the District will take complaints from any concerned citizen or entity in the district on cases of waste or possible waste.

2.1 Performance Standard

In each Annual Report, the District will include a discussion of the recent issues with waste and determine if any amendments to the rules are recommended to prevent the waste of groundwater.

Quarterly throughout 2014, District staff reported, during public meetings, to the Board of Directors on the topic of waste. See 3-Ringed binder, Section 1 for agenda items. No complaints were submitted to the District office concerning waste or possible waste during the year. The Board of Directors held a public Hearing on December 17, 2014 to review and approve the latest revision of District rules including waste and unaccounted for water within Rule 10. The new rules became effective January 1, 2015 and have been posted on the District's website under Quick Links / Regulatory.

The District relies on the on-line Quarterly Reporting process, see the following pumpage report on the following page, that allows all HTGCD operating permit holders instant access to enter and review their own production, sales, connections and percent losses. Communication concerning loss is tied directly to each quarterly report. This gives the permit holder and the District an electronic record of reasons for loss including: line-breaks, meter replacement, fires or flushing.

Quarterly Pumpage Report

[Forms](#) | [My Profile](#) | [Log off](#)

Non-Exempt Well - Quarterly Reporting - FORM #: 2009-1A

Permit Holder: Cedar Oak Mesa WSC

Year: 2014

Quarter: 1st Qtr (January - March)

Water Level Information		January		February		March	
Well Id / Name	Water Level	Water Level Date	Water Level	Water Level Date	Water Level	Water Level Date	
Cedar Oak Mesa WSC	154	01/31/2014	160	02/28/2014	161	03/31/2014	
<input type="button" value="Add Another Well"/>		<input type="button" value="Remove Well"/>					
	YTD Totals	Qtr Totals	January	February	March		
Groundwater Pumped Total	1,900,900	1,900,900	686,400	634,600	579,900		
Other Water Sources	0	0	0	0	0		
Sold / Used	1,748,940	1,748,940	633,960	579,670	535,310		
Total # Service Connections			210	210	210		
New Service Connections			0	0	0		
Notes / Comments, New Connection Addresses							
Loss	151,960	151,960	52,440	54,930	44,590		
Loss Percent	7.99 %	7.99 %	7.64 %	8.66 %	7.69 %		

3.0 The Control and Prevention of subsidence.

The rigid geologic framework of the region precludes significant subsidence from occurring. Therefore, this goal is not applicable to the operations of this District.

4.0 Addressing conjunctive surface water management issues.

4.1 Management Objective

To promote the use of surface water or other alternatives to groundwater in growing areas where groundwater demand is projected to reduce stream and spring flow to unacceptable levels.

4.1 Performance Standard

The District will strive to meet with the planning departments of major surface water providers within the District at least once per year. The District will summarize these meetings and their outcomes in the Annual Report.

Major Surface water suppliers:

West Travis County Public Utility Agency (WTCPUA): A meeting was held on October 25, 2014 with General Manager Don Rauschuber concerning an overview, exchange of ideas and responsibilities between the two agencies. Summary of hosted meeting provided, see *3-Ringed binder, Section 1*.

Dripping Springs Water Supply Corporation (DSWSC): A meeting was held on October 16, 2014 with General Manager Greg Perrin concerning an over view, exchange of ideas and responsibilities between the two agencies. Summary of hosted meeting provided, see *3-Ring binder, Section 1*.

Additional meetings concerning surface water

Groundwater Management Area 9 (GMA9): The District's participation in numerous group meetings dealing specifically with available and future groundwater.

Promotion of rainwater collection vs. groundwater drilling: Speaking directly to the end user at the District office and during all HTGCD Board meeting announcements.

5.0 Addressing natural resource issues that impact the use and availability of groundwater or are impacted by the use of groundwater.

5.1 Management Objective

Each year the District will make at least one endorsement or contribution to ongoing studies of geologic, environmental, or hydrologic studies being performed in the district area.

5.1 Performance Standard

Each year a summary of the District's contributions or endorsements of ongoing studies will be included in the Annual Report.

Monitoring Program: 33 water level monitoring wells within the District, including precipitation data, are all subjects that the District monitors monthly. The information and resulting hydrographs are posted on the District's website for public awareness, education and professional use. In addition, 9 transducer wells provide quarterly data and are included on the District's website. Lastly, 3 telemetry wells are part of the District's water level data collection and information awareness. In 2014, the District partnered with DSWSC to fund 3 telemetry wells within western Hays County.

Desired Future Conditions/ Modeled Available Groundwater: The Board of Directors approved funding up to \$3,000 in October 2014 to study the DFC/MAG. This study includes all of the GMA9 participants and its geographical area with the goal to understand and implement a base water-level from which an average regional drawdown over time may be established. GMA9 meetings and the study will continue in 2015.

Lower Trinity Project: The Project was initiated by the District in 2012 in order to evaluate the potential for an alternate aquifer for Western Hays County. Extensive work was done on the planning and evaluation of the Aqua Texas Woodcreek Test Well- a lower Trinity test. The well recovered only a minor flow of water from the Sligo and Hosston intervals. It was eventually turned over to the District as a monitoring well. The Project reported on the Test Well results at a public workshop. Hydrogeological evaluation of the Lower Trinity continued in 2014 with the addition and analysis of geophysical logs and cutting samples. Water sampling and analysis of selected wells was also ongoing.

Publications: The District participated in the editing and publishing of two hydrogeological reports: The “Hydrogeologic Atlas of the Hill Country Trinity Aquifer” in 2010 and the “Austin Geological Society-Guidebook 33” in 2011. These technical documents were widely distributed to professionals, university libraries and the public. Associated field trips and presentations were carried out in 2012. In 2014, the District continued to use these publications in presentations to Hays County landowners and as reference documents to support local drilling.

Hydrogeologic Project- an addition to the 2010 Atlas: In 2014, the District joined with neighboring groundwater districts, TPWL and other professionals in further analyses of the Hill Country Trinity Aquifer. Considerable progress was made during the year by the group on the understanding of the hydrogeology of the Blanco River and the Wimberley Valley. The District participated in several field trips to geological outcrops along the Blanco River and almost 150 additional wells were added to the Atlas data base. Geophysical logs were correlated tying wells from Blanco, Hays, Comal and Travis Counties. Cutting samples were described and analyzed from many of the wells and several cross-sections were drawn. Additional work was completed in 2014 including stratigraphic cross sections and a revised Cow Creek Structural Map. The project is scheduled for completion later in 2015.

Onion Creek Project: The Onion Creek Project was initiated in December 2014. It plans to compile, analyze and evaluate Hydrogeologic data collected along the length of Onion Creek and its tributaries from headwaters in Blanco County to the eastern boundary of the HTGCD, southeast of Driftwood, Hays County. The primary goal of the project is to provide an interpreted hydrogeological data-base that will serve the Groundwater District and the Community as a technical basis for ongoing groundwater planning.

6.0 The District has a goal to manage the use of the Aquifer such that sufficient groundwater resources are available for high priority uses during drought conditions – A review of the historical rainfall in Hays County, together with analyses provided by TWDB and regional agencies, demand effective planning and management of groundwater resources.

6.1 Management Objective

The District has developed a Drought Contingency plan to protect and conserve groundwater during critical climatic conditions. The plan will be updated as additional data becomes available.

6.1 Performance Standard

The District will post a copy of the plan on the HTGCD website and will include an updated Drought Contingency plan, available to end-users, in the annual report.

The District continues to use the User Drought Contingency Plan (UDCP) for all of its non-exempt HTGCD operating permit holders. The UDCP was updated in 2014 and posted to the District’s website under Forms. A copy of the UDCP is attached; see 3-Ringed binder Section 2.

The Water Conservation Plan is also part of the paperwork required by the District for an operating permit application to be administratively complete; a copy is attached; see 3-Ringed binder Section 2.

A Drought Production Cutback Curtailment Chart, see chart below, is included with each new permit and renewal permit. The cutback chart provides the exact monthly production cutback curtailment requirements in gallons so that permit holders can manage Board declared drought stage condition production cutbacks.

	A	B	C	D	F	G	H	I	J	K	L
1	Blue Hole										
2				6 Acre Feet							
3	2014-5 Permit										
4				1,955,106 Gallons							
5											
6					Stage 1	Stage 2	Stage 3	Stage 4			
7		Actual Use		Baseline	Voluntary	Alarm	Critical	Emergency	Gallons		
8		Gallons		Gallons	10%	20%	30%	40%	Over		
9	January		6%	117,306	105,576	93,845	82,114	70,384			
10	February		7%	136,857	123,172	109,486	95,800	82,114			
11	March		7%	136,857	123,172	109,486	95,800	82,114			
12	April		7%	136,857	123,172	109,486	95,800	82,114			
13	May		8%	156,408	140,768	125,127	109,486	93,845			
14	June		10%	195,511	175,960	156,408	136,857	117,306			
15	July		12%	234,613	211,151	187,690	164,229	140,768			
16	August		12%	234,613	211,151	187,690	164,229	140,768			
17	September		10%	195,511	175,960	156,408	136,857	117,306			
18	October		8%	156,408	140,768	125,127	109,486	93,845			
19	November		7%	136,857	123,172	109,486	95,800	82,114			
20	December		6%	117,306	105,576	93,845	82,114	70,384			
21	Totals		0	1,955,106	1,759,595	1,564,085	1,368,574	1,173,064	0 at \$10 per 1000 gallons		
22											

6.2 Management Objective

Each quarter the District will check the National Weather Service-Climate Prediction Center website: [http://www.cpc.ncep.noaa.gov/products/monitoring and data/drought.shtml](http://www.cpc.ncep.noaa.gov/products/monitoring_and_data/drought.shtml) for updates of the Palmer Drought Index. The District will download the updated Palmer Drought Severity Index (PDSI) map and check for periodic updates to the Texas Drought Preparedness Council Situation Report (Situation Report) posted on the Texas Department of Public Safety website: <http://www.txdps.state.tx.us/dem/sitreindex.htm> .

6.2 Performance Standard

Quarterly, the District will make an assessment of the status of drought in the District and prepare a quarterly briefing to the Board of Directors. The downloaded PDSI maps and Situation Reports will be included with copies of the quarterly briefing in the District Annual Report to the Board of Directors.

During monthly Board meetings, the District staff reviews the monitoring program “Status of Drought Briefing” which includes: well level averages, drought trigger status, recommended drought stage, table of water level data collected, the U.S. Drought Monitoring and Palmer Drought Severity Index maps, see 3-ringed binder, Section 3.

If any new Texas Drought Preparedness Council Situation Reports have been released these are reviewed as well, see 3-ringed binder, Section 4.

Quarterly, the Board receives a status of the drought briefing report assessment; see 3-ringed binder, Section 5.

The “Hays Trinity GCD: monitoring well locations” shows the location of the Hays County monitoring wells, see 3-ringed binder, Section 6.

Hydrographs for Mount Baldy and Henly Church wells, included with Section 6, along with flow rates from the Blanco and Pedernales Rivers, indicate the present health of the aquifer: Currently interpreted by the HTGCD as stage “Critical”. Board approved stage “Critical”, drought cutback curtailments for all non-exempt HTGCD operating permit holders and requests that all exempt users voluntarily comply with stage Critical drought reductions of 30%.

The attached “U.S. Seasonal Drought Outlook” map, see 3-ring binder, Section 6. classifies Central Texas in the category: “Drought to persist or intensify”. These forecasts are long range and highly subjective. They should be used with caution.

6.3 Management Objective

Each year the District will collect monthly water level data from a network of monitoring wells.

6.3 Performance Standard

Each year a report of the District water level collection activities including a table of the water levels measured in District monitoring wells will be included in the Annual Report.

Monthly, the District staff collects and enters data during its water level Monitoring Program. The information collected is displayed on the District website as hydrographs, and also includes precipitation levels. The public can access the District's website for more specific well data by scrolling over the hydrograph to see elevation above a.m.s.l. measurements and surface to top of water table measurements.

In addition to the Monitoring run, District staff downloads quarterly data from 9 transducer wells within western Hays County. This information is also located on the District's website for public use.

District staff updates a table that tracks monthly water level measurements and is included within the annual report; see 3-ringed binder, Section 6.

6.4 Management Objective

Each year the District will monitor data collected from the U.S. Geological Survey spring-flow monitoring station at Jacob's Well, a major Trinity Aquifer spring.

6.4 Performance Standard

Each year, the District, at a public meeting, will review the prior year's monitoring data with local, state or federal organizations and prepare a summary to be included in the Annual Report.

District staff reviewed the year-end monitoring data collected within 2014 during a public Board meeting on December 17, 2014. The Honorable Hays County Commissioner, Ray Whisenant, was invited to attend. The year-end monitoring data review and Jacob's Well monitoring station data is included; see 3-ringed binder, Section 7.

7.0 The District has a goal to promote conservation of water resources throughout the District.

7.1 Management Objective

Each year the District will submit one article for publication regarding water conservation to at least one newspaper of general circulation in Hays County.

7.1 Performance Standard

Each year a copy of the article submitted for publication will be included in the Annual Report.

The District posted the following articles; see 3-ringed binder, Section 8.
Wimberley View: January 10, 2014 “HTGCD Looking for Your Help”
Wimberley View: January 10, 2014 “Despite winter rains, drought stage raised”
Wimberley View: April 16, 2014 “HTGCD declares drought stage Critical”
Wimberley View: August 11, 2014 “HTGCD could be moving to Emergency Stage”

The District searches local newspapers for all articles concerning groundwater and the District including: political, editorials and news.

8.0 Recharge Enhancement.

This goal is not applicable to the operations of this District.

9.0 Rainwater Harvesting.

The District is committed to promoting alternate water sources that reduce demand on groundwater in the central Texas region. As such the HTGCD is committed to promoting rainwater harvesting as a source of municipal and residential use.

9.1 Management Objective

Each year the District will make at least one endorsement or contribution to programs that encourage, install, educate or assist individuals in the implementation of rainwater harvesting systems in the District area.

9.1 Performance Standard

Each year the District will provide records of contributions or promotions of rainwater harvesting events or companies in its annual report.

Rainwater Revival: The District attended, participated in and contributed to the first two years of the local “Rainwater Revival” event. In 2014, the District again contributed and attended the event including manning a booth. The booth was well visited by the public and served as an educational service to the community. The District provided an endorsement of the Revival via the District’s website for further public information and outreach; see 3-ringed binder, Section 9.

Additionally, within Section 9, District staff reaffirms during monthly Board meetings, that the District encourages the use of rainwater collection systems on all new homes, businesses and on existing buildings. The District further promotes the use of surface water or other alternatives to groundwater in and around western Hays County.

10.0 Precipitation Enhancement.

This goal is not applicable to the operations of this District.

11.0 Brush Control.

The District encourages proper land management practices in accordance with current agricultural extension standards. Proper land management promotes recharge and protects against surface water quality degradation. As such the District will promote and educate the public on proper land management practices.

11.1 Management Objective

The District will attend or contribute to at least one event each year that promotes and educates the public on proper land management practices.

11.1 Performance Standard

Each year the District will provide records of contributions or promotions of land management events or companies in its annual report.

District staff reaffirms during monthly Board meetings, that the District promotes recharge of the aquifer through such means as proper brush management and re-establishing deep rooted native grasses, see 3-ringed binder, Section 9.

District staff hosted an educational workshop video on November 12, 2014 at the Wimberley Community Center, see 3-ringed binder, Section 10. The video shown was, “Cultivating Awareness: Ornamental Plants Invading Natural Areas”.

The District website, under Public Education Outreach, lists and promotes land management websites for the public to utilize, see 3-ringed binder, Section 11.

12.0 Monitoring Desired Future Conditions (DFC).

The GMA9 and GMA10 DFC’s submitted to the TWDB in July 2010 will require a monitoring program to ensure compliance. Subsequently, the District dropped out of the GMA10 with approval from the GMA9 and the TWDB on October 3, 2011 by District Resolution 20111003. The District maintains a groundwater-level monitoring program that began in 1999 and records changes in water levels over time throughout the District. The program currently includes 33 wells monitored monthly. In addition, the District has 9 transducer wells providing continuous recordings of water-level fluctuations. Lastly, 3 telemetry wells use “real time data” that can be found on the District’s website.

12.1 Management Objective

The HTGCD is currently working with the GMA9 Technical Committee to develop a well data base-map that will identify all monitoring wells in the management area. The committee is also working on an acceptable method to measure and report drawdown levels. Deliverables may include potentiometric surface maps of Trinity System sub-aquifers and selected hydrographs.

During 2014, the District staff has monitored and recorded water levels on 33 Hays County wells. Measurements will be taken monthly when possible, and posted on the District website. Hydrographs are constructed for each monitored well. The HTGCD will work within the guidelines of the GMA9 to determine a “base aquifer level” from which an average drawdown over time may be established. The Management Plan will be revised when the methodology is reviewed and approved.

12.1 Performance Standard

The District will calculate the average drawdown of the Trinity Aquifer System water level utilizing recommended methodology adopted by the GMA9. The HTGCD shall provide a summary of the average drawdown within the District on its website and in its annual report.

As of year-end 2014, the GMA9 has not established a methodology to calculate average drawdown within the management area. They have agreed to use average water levels from 2008 for a base-line. Until the District receives guidelines from the GMA9, the hydrographs from District monitored wells are used to indicate the average drawdown per well.

The District monitors, collects data and stores information on 40 plus wells within western Hays County. This data is entered on the District’s website and accessible to the public. The data reveals the highs and lows of the wells during periods of drought and rainfall throughout the year. This information is highly valuable to GMA9 member Groundwater Districts as it helps show the health of the Trinity Aquifer. The data is also used by local residents who wish to have insight on their own well status. In 2013, a \$3,000 District contribution, along with other GMA9 funds, was made available to Dr. William Hutchinson to study and provide a report concerning a collective group of monitoring wells within GMA9 and its relationship to the Desired Future Conditions. Our hope is that the study provides valuable information to help guide the GMA9 members in near future DFC planning.

Modeled Available Groundwater – HTGCD Trinity Aquifer System

Based on the 2011, GMA9 adopted DFC (a regionally averaged 30’ drawdown of the Trinity Aquifer) the attached table “Available Groundwater HTGCD” was constructed showing “available groundwater” for 2009, 2010, 2011, 2012, 2013, 2014 and predicted for 2060. Using the TWDB calculated 9100 AF/YR MAG and subtracting estimated Exempt Use and Non-Exempt Use-Permitted, the non-committed “available groundwater” for western Hays County results in 2,894 AF/YR for 2011, 2,916 AF/YR for 2012, 2,679 AF/YR for 2013 and 2,305 AF/YR for 2014. Projecting an estimated 2060 Exempt Use of 5,784 AF/YR, and keeping Non-Exempt Use-Permitted constant, resulted in 16 AF/YR “available groundwater”. These figures are tenuous at best and will be reviewed and updated periodically in order to establish a reasonable trend and management strategy.

The District Management Plan will be revised as appropriate to reflect new Trinity Aquifer data and analysis, derived locally and from GMA9, regarding DFC/MAG calculations.