

Bandera County River Authority & Groundwater District Annual Report - FY 2016

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Bandera County
River Authority & Groundwater District
Protecting & Preserving our Natural Resources



Bandera County

River Authority & Groundwater District

Protecting & Preserving our Natural Resources

***Managing our Surface Water for the
Upper San Antonio and Nueces River
Basins & our Groundwater Resources for the
Trinity Group and Edwards-Trinity
Plateau Aquifers***

Table of Contents

District Information	1-4
District Teams and Staff	4-5
General Manager's Report	6
Administrative Requirements	7
District Programs & Initiatives	8-29
Articles/Publications/Press Releases	30-43
Performance and Management Goals	44-83

Appendix A: Annual Financial Report

Mission Statement

The principal mission of the Bandera County River Authority and Groundwater District is to protect and preserve the County's water and natural resources for the citizens of Texas. The District is also tasked with maintaining local accountability of the County's water resources to help safeguard the property rights of the citizens of Bandera County.

Core Values

Professionalism, Dedication to Science, Honor and Integrity, Public Service, Stewardship, Leadership and Collaboration, Accountability and Transparency.

Location and Contact Information

Location: 440 FM 3240 Bandera, Texas 78003

Mailing address: P.O. Box 177 Bandera, Texas 78003-0177

Phone: (830) 796-7260; Fax (830) 796-8262

Website: www.bcragd.org

www.facebook.com/bcragd/

https://twitter.com/BCRAGD_TX

General Manager's Email: dmauk@bcragd.org



District Information



Bandera County River Authority

In 1971, the 62nd Texas Legislature created the Bandera County River Authority under House Bill 988. It was created as a conservation and reclamation district under and pursuant to Article XVI, Section 59, of the Texas Constitution. As defined by Article 8280-526, Vernon's Texas Civil Statutes, the River Authority encompassed all of the territory contained in Bandera County except the territory included in the Bandera County Fresh Water Supply District No.1 (Pebble Beach) and the Bandera County Water Control and Improvement District No.1 (City of Bandera). According to the provisions of the legislation, the Bandera County River Authority shall have and exercise and is hereby vested with, all of the rights, powers, privileges, authority and duties conferred and imposed by the general laws of this state now in force or hereafter enacted, applicable to water control and improvement districts created under authority of Article XVI, Section 59 of the Texas Constitution; but to the extent that the Provisions of any such general laws may be in conflict or inconsistent with the provisions of this Act, the provisions of this Act shall prevail. All such general laws are hereby adopted and incorporated by reference with the same effect as if incorporated in full in this Act.

Springhills Water Management District

The Bandera County River Authority was a springboard for the creation of the joint surface and groundwater district. Beginning with the reorganization of the River Authority Board of Directors in 1985, the Directors began working with State and local officials, and concerned citizens to determine the most advantageous method to manage groundwater in Bandera County. After numerous public meetings the decision was made to pursue legislation creating a joint surface and groundwater district in Bandera County. The result was the creation and confirmation of the Springhills Water Management District.

Springhills Water Management District was created under Senate Bill 1636. The District's enabling legislation, appearing as Act of June 17, 1989, Ch. 654, 1989, Tex. Gen. Laws 2155 (Vernon), granted the District the rights, powers, privileges, authority, functions, and duties provided by Chapters 50 and 52; and the rights, powers, purposes, authority, and functions of the Bandera County River Authority. The legislation defines the District's boundaries as all of the territory contained within Bandera County. The legislation further stipulates that the Board of Directors will be composed of nine (9) directors. The directors will be elected from commissioner precincts with one director at large. The Springhills Water Management District continued all of the programs and activities initiated by the River Authority, and implemented the programs required of a groundwater conservation district.

District Information

Bandera County River Authority and Groundwater District

On April 10, 2003, the TCEQ authorized changing the District's name to Bandera County River Authority and Groundwater District. The BCRAGD continues all the programs and activities of Springhills Water Management. The District has all of the rights, powers, privileges, authority, functions, and duties now provided by Chapter 36, 49, and 51 of the Texas Water Code.

Purpose of a District

Texas Water Code, Chapter 51, Water Control and Improvement District

51.121. Purposes of District (River Authority)

A water control and improvement district organized under the provisions of Article XVI, Section 59, of the Texas Constitution, may provide for:

- (1) The control, storage, preservation, and distribution of its water and floodwater and the water of its rivers and streams for irrigation, power, and all other useful purposes;
- (2) The reclamation and irrigation of its arid, semiarid, and other land which needs irrigation;
- (3) The reclamation, drainage, conservation, and development of its forests, water, and hydro-electric power;
- (4) The navigation of its coastal and inland water;
- (5) The control, abatement, and change of any shortage or harmful excess of water;
- (6) The protection, preservation, and restoration of the purity and sanitary condition of water within the state; and
- (7) The preservation and conservation of all natural resources of the state.

The purposes stated in Subsection (b) of this section may be accomplished by any practical means.

Texas Water Code, Chapter 36, Groundwater Conservation Districts

36.0015. Purpose (Groundwater)

In order to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objective of Section 59, Article XVI, Texas Constitution, groundwater conservation districts may be created as provided by this chapter. Groundwater conservation districts created as provided by this chapter are the state's preferred method of groundwater management.

Location



The District's office is located at 440 FM 3240 Bandera, Texas. Bandera County lies in the south central part of Texas, in the hill country region of the Edwards Plateau. The County has an aerial extent of 768 square miles, or 491,520 acres. The County seat, the city of Bandera, is centrally located at the intersection of State Highways 16 and 173. Kerr, Kendall, Bexar, Medina, Uvalde, and Real Counties bound the County, in a clockwise pattern. Bandera County River Authority and Groundwater District encompasses all of Bandera County.

District Teams



Staff members comprise ten teams. Many employees serve on more than one team:

General Management

Administrative

Field Operations

Water Well Permitting and Registration

Aquifer Science, Regional Water Planning, and DFC Compliance

Watershed Protection

Water Quality-Science/Research – Clean Rivers Program (CRP)

Water Conservation and Community Outreach

Environmental Investigations/ Regulatory Compliance

Flood Awareness/Rainfall Monitoring

District Staff

Dave Mauk
General Manager

Job: General Management
Primary Teams: General Management,
all others ex-officio

Email: dmauk@bcragd.org



Jay McEwen
Field Technician / Well Inspector

Jobs: Field Technician,
Well Inspections
Primary Teams: Water Well
Permitting/Registration, Aquifer
Science,
Regulatory Compliance

Email: jay@bcragd.org



Kayla Rohrbach
Watershed Protection Coordinator

Jobs: Watershed Protection
Coordinator, Senior Aquatic Biologist
Primary Teams: WQ Science/CRP
Program Team Leader, Watershed
Protection Team Leader

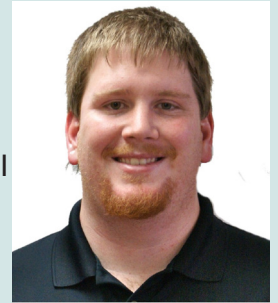
Email: krohrbach@bcragd.org



Michael Redman
Natural Resources Coordinator

Jobs: Code Enforcement Officer,
Permitting Coordinator, Field
Technician Natural Resources
Primary Teams: Environmental
Investigations/Regulatory
Compliance Team Leader, Water Well
Permitting and Registration Leader,
Aquifer Science Leader

Email: mredman@bcragd.org



Jeff Jilson
Operations Manager

Jobs: Administrative Assistant, Field
Operations, Human Resources
Manager, Finance Co, Records
Management Officer
Primary Teams: Administrative Team
Leader, Field Operations Team Leader

Email: jjilson@bcragd.org



Morgen Ayers

Water Conservation & Community Outreach Coordinator

Jobs: Water Conservation
Coordinator, Environmental Scientist,
CRP Quality Assurance Officer
Primary Teams: Education &
Community Outreach Team Leader,
Flood Awareness Team Leader

Email: mayers@bcragd.org



Levi Sparks
Aquatic Ecologist

Jobs: Environmental Scientist
Primary Teams: Medina Lake
Management, WQ Science/Research
Team Leader, Watershed Protection

Email: lsparks@bcragd.org



Drucilla Meier
Aquatic Biologist

Jobs: Aquatic Biologist, Field
Technician
Primary Teams: Aquifer Science,
Watershed Protection, WQ Science/
CRP Program, Flood Awareness,
Education and Community Outreach

Email: dmeier@bcragd.org



General Manager's Report

It is crucial to understand that our area tends to experience either heavy rainfalls or periods of drought. Bandera County seems to bounce back and forth between feast or famine rain conditions. There truly is not an average yearly rainfall. Fortunately, over the last few years increased rainfall broke the punishing drought agriculturally. However, the aquifers in our County have not fully recovered from the effects of the chronic drought. Medina Lake has recovered from the historic low of 3 percent capacity to approximately 95 percent capacity. Both the Sabinal and Medina Rivers have rebounded and are flowing again. This was an incredible and much needed turn-around over a short period of time. Even though the drought has abated agriculturally, the next one will be coming soon. Our region will continue to experience increased growth and population, further stressing our resources.

The much needed rainfall events that abate periods of drought remind us of another sobering reality; we live in flash flood alley. Our region is known as one of the most flash flood prone areas in the world. Recently, several rain events in our area have threatened life and property. Seeing the public safety need, the District applied for and received a Texas Water Development Board grant to implement a USGS flood warning project.

The USGS has successfully implemented flash flood warning systems throughout the Midwest United States. This will be the first time a project like this has been implemented in Texas. We envision this state of the art flood warning system will become a model for the rest of the state. The warning system utilizes river gages and basin modeling, which will give Emergency Managers in Bandera County a set of predictive tools that will allow them to understand what areas potentially will flood during an event.

The District has continues to promote conservation, rainwater harvesting, and drought awareness. District personnel have assisted and counseled landowners on how to protect both their water quantity and quality. The District will continue to enforce its rules and implement the Drought Management Plan.

The District will continue to implement key conservation and water quality programs including the Clean Rivers Program, Aquifer Monitor Well Program, Community Outreach and Education, Illegal Dumping Abatement, and our Flood Awareness Program. District personnel are constantly revisiting and improving operating procedures to better serve the citizens of Bandera County. We continue strive to be as transparent as possible. As General Manager, I have an open door policy, making myself available for any citizen's questions and concerns.

As a District, we continue to be a regional player to help safeguard the rights and natural resources of the people of Bandera County. We have been an active participant in the Regional Water Planning Groups, Groundwater Management Area-9, TCEQ Clean Rivers Program, and Bay and Basin Stakeholder Committee. Our District has established lasting collaborations with other Districts and community organizations. The District will continue in the next year to improve its programs and processes to further the policies of the Board. This continued progress and regional engagement will help ensure that both the interests and water resources are protected not only for the people of Bandera County but the people of the entire basin.

Very Respectfully,

David Mauk, General Manager

Administrative Requirements

Ensure elections are conducted and planned with consideration of federal and state laws.

Maintain District records including hardcopies and electronic databases.

Follow the Public Information Act, ensuring District records were open and assessable.

Conduct meetings as mandated by the Texas Open Meetings act.

Conduct budget and tax rate adoption as required by Texas law and administrative codes.

Post agendas for meetings and public hearings in accordance with the Open Meetings Act.

Ensure minutes are recorded, approved, and archived.

Manage District finances in accordance with Board Directives and state and federal laws.

Maintain and amend management plan as required by the legislature and the TWDB.

Attend Election training by the Secretary of State.

Attend training and stay updated on current workplace laws and issues.

Ensure management goals are met and properly documented.

Attend Public Funds Investment act training and refreshers.

Have audit conducted and accepted as required by TCEQ and TWDB.

Maintain District property.

Obtain 4 / 6 hours training for financial management as required by the Public Funds Investment Act.

DISTRICT PROGRAMS & INITIATIVES

Public Safety- Flood Preparedness

TWDB Flood Protection Grant

Light Detection and Ranging (LiDAR)

Rainfall Monitoring Program

*GSA BBASC Environmental Flows
member and representative*

TCEQ Clean Rivers Program

*In-house Surface Water Quality
Monitoring Programs*

Environmental Investigations

Illegal Dumping Litter Abatement

*Invasive Species Management and
Education*

Annual Medina River Clean up

Adopt a Highway Program

*Region J- Water Plateau Planning
Group*

University Internship Program

*Public Education and Community
Outreach Program*

*Water Conservation & Natural Re-
source Stewardship*

*Enforcement of State and District
Rules*

Permitted Well Program

Registered/Exempt Program

Monitor Well Program

Groundwater Management Plan

Drought Management Plan

*Groundwater Sampling & Water
Analysis*

Well Plugging Program

GMA 9 Representative

*TAGD Member- Legislative and Edu-
cation Committees*

Geophysical Logging

Well Camera Inspection

Collaboration Highlights

United States Geological Survey

BCRAGD has contracted USGS to expand the early flood warning system tool set for Bandera County under the grant awarded to the District by Texas Water Development Board.

Texas Water Development Board

On August 25, 2016 TWDB awarded \$265,150 in Flood Protection Grant funding to BCRAGD for Bandera County. Working with USGS, this project will protect the lives of local residents and also the communities downstream through a flood warning tool set.

Texas Commission on Environmental Quality Environmental Investigations

San Antonio River Authority

Clean Rivers Program partners;
Aquatic Life Monitoring collaborators

Edwards Aquifer Authority

Aquifer science, streamflow study collaboration, rainfall gages

Nueces River Authority

Clean Rivers Program partners; ISD education collaboration; Invasive plant collaboration- *Arundo donax*

TAMU AgriLife Extension Service

Educational Outreach: water conservation and land stewardship workshops

Schreiner University

Expanding Your Horizons Program
Internship Program

Texas Water Development Board (TWDB)
Texas Commission on Environmental Quality (TCEQ)
Texas Department of Licensing and Regulation (TDLR)
Texas Parks Wildlife Department (TPWD)
Texas Alliance of Groundwater Districts (TAGD)
Texas Water Resources Institute
GSA BBASC Environmental Flows
Groundwater Management Area-9
Region J Water Plateau Planning Group
Texas Water Conservation Association
Texas A&M AgriLife Extension
United States Geological Survey
USDA-NRCS
San Antonio River Authority
Nueces River Authority
Edwards Aquifer Authority
Blanco Pedernales Groundwater District
Central Texas Groundwater Conservation District
Hill Country Groundwater Conservation District
Schreiner University
Bandera County Economic Development Corp.
Bandera City Economic Development Corp.
Bandera Electric CO-OP
Bandera County Constables
Bandera County Sheriff's Department
Bandera, Medina, and Utopia ISDs
Bandera Co. Commissioners' Court
City of Bandera
LAMCOS
Medina River Protection Fund
Hill Country Alliance
Bandera Canyonlands Alliance

Flood Protection Grant Awarded

On August 25, 2016 The Texas Water Development Board awarded \$265,150 in Flood Protection Grant funding to BCRAGD for Bandera County. Working with USGS, this project will protect the lives of our local residents and also the communities downstream through a flood warning tool set. The existing early flood warning system will expand by two additional stream gages upstream, which in turn will improve response strategies and planning through advanced modeling and mapping. Parts of the Midwest have successfully implemented this tool set, and Bandera County will be an example to the rest of Texas.

The 2013 Light Detection and Ranging (LiDAR) data acquisition will enhance the modeling and mapping capabilities for this flood warning tool set. The LiDAR data for Bandera County was the result of a partnership between BCRAGD, Texas Water Development Board, Edwards Aquifer Authority, San Antonio River Authority, Bandera County, and Bandera City EDC. This data improves the accuracy of FEMA's risk map, flood risk and emergency planning, watershed protection, water resource and invasive species monitoring.



Rainfall Monitoring Program

BCRAGD is partnered with Bandera County and the Bandera Electric Coop in sponsorship of a USGS discharge and rain gage at Patterson Road in Medina. This gage displays all parameters real time via a telemetry unit, and is accessible to the public through the USGS website. The Flood Protection Grant will allow significant expansion in USGS gages along with a more comprehensive flood warning tool set for Bandera County.

District maintains an official Weather Station utilizing HOBOLink courtesy of the EAA's gage at BCRAGD's District office. Conditions can be accessed from the District's website. www.bcragd.org. BCRAGD records rainfall data, and contrasts rainfall data with monitor wells results. Results are available to USDA and the County Extension office.

Employee Trainings

- Texas Watershed Protection Short Course
- UT Texas Water Law Institute Conference
- Ethics and Data Integrity Training with SARA
- Texas Chapter of American Fisheries Society Conference
- Drone Training
- Taking the Reins in Natural Resource Management
- TAMU AgriLife Brush Management workshop
- TAMU AgriLife Bandera County Land Management Workshop
- Restoration Agriculture Workshop with Cibolo Nature Center
- Texas Floodplain Management Spring Summit
- NCIT/CLEAR Investigator Training
- Texas Environmental Law
- Enforcement Agency Conference
- Quickbooks Class
- Texas Water Conservation Association Conference
- Basic Water Operations Course
- Texas Mollusk Symposium
- Pictometry Training
- Texas Alliance of Groundwater Districts Summit
- Hill Country Alliance Water Symp.
- State Resiliency Initiatives Webinar for Certified Floodplain Managers

Training of Our Future Scientists Program



The District participates in the Schreiner University Community Internship Program (CIP). Every year a qualified student is given the opportunity to work and to learn at the District. The work includes both laboratory and field work.

Dyllan Stratton, a student at Schreiner University, interned with BCRAGD from May 2016 to July of 2016. He participated in the Clean Rivers Program, BCRAGD's In-house Surface Water Quality Monitoring Study, the well water laboratory analysis program, Arundo donax management efforts (pictured to the left), as well as outreach events.

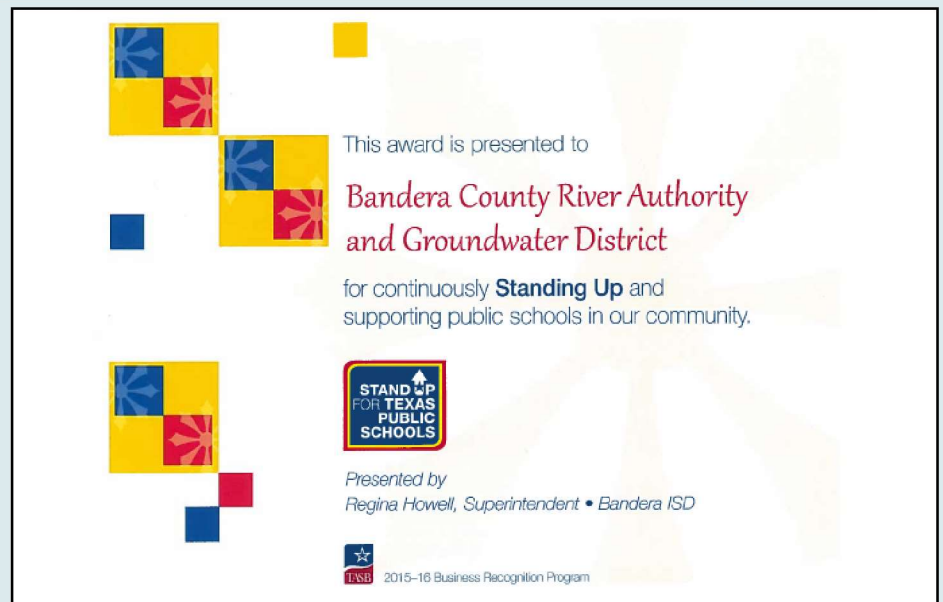
Public Education and Community Outreach

The District prioritizes the education of students and the public regarding surface water and groundwater in Bandera County, through hand-on activities, presentations, and workshops.

Educational Recognition

The District was invited to speak on an education panel during a Texas Alliance of Groundwater District meeting on January 27, 2016.

Bandera ISD presented BCRA GD with a Stand Up for Texas Public Schools award on March 22, 2016.



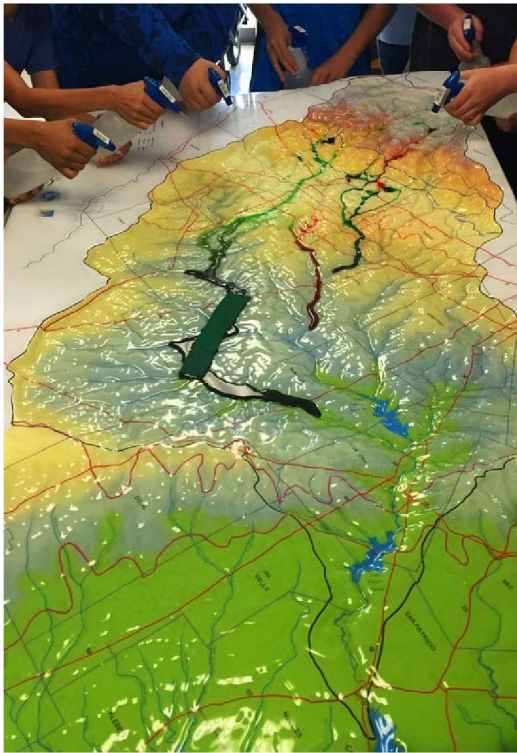
Schreiner University - Expanding Your Horizons



The Expanding Your Horizons (EYH) Network is a global platform that seeks to increase female participation in the fields of math and science (as a part of the STEM effort) by facilitating local conferences that inspire middle school and high school aged girls in hands on workshops.

Schreiner University hosts EYH annually, and BCRA GD proudly sponsors and collaborates with its implementation. BCRA GD facilitated an aquifer science/ water filter build. The students were provided various natural and man-made materials from which to construct a model of an aquifer emphasizing its filtration function.

Educational Programs in the ISDs



Since 2012, BCRA GD has sponsored and co-facilitated the Nueces River Authority Water Resource Stewardship Education Program for Bandera, Medina, and Utopia middle school students. The program features a water use and conservation presentation, the demonstration of a surface water runoff model and an aquifer model, with an emphasis on non point source pollution. Riparian and flood awareness were BCRA GD additions to the program in 2016.

The District facilitated hands on surface and groundwater educational programs. Starting in 2015, BCRA GD and Bandera Middle School (BMS) initiated a series of Science in Action programs to educate students on aquifer science, conservation, riparian systems, and flood awareness. In 2016 BCRA GD facilitated an aquifer science build and has begun the rest of the series into FY 2017. A riparian picture categorizing activity was facilitated for BMS's Environmental Fields class at the beginning of FY 2016.



BCRA GD staff gave an aquaponics/water conservation presentation to Bandera High School students. During the Spring, BCRA GD was invited to present during Bandera High School's Career Day. Additionally, BCRA GD was invited to give a water use and conservation presentation during a Girl Scout camp at Medina Lake during the summer of 2016.

The local Soil and Water Conservation Board invites the District to participate in 6th grade Ag Day at Mansfield Park in Bandera. In recent years, BCRA GD has co-facilitated with Nueces River Authority at this event. During 2016, two water quality activities (pH testing and riparian system education) were presented to the students.

The District purchased and delivered Major Rivers educational workbooks (an elementary water education curriculum) to the elementary schools in Bandera County and to Utopia ISD.



Water Conservation and Natural Resource Stewardship



The District prioritizes the conservation of Bandera County's surface and groundwater, as well as the stewardship of natural resources as a whole. This priority is reflected in the execution of District programs and initiatives, as well as being an integral part of the District's overall Education and Community Outreach Program.

Annually, BCRAGD hosts a Water Conservation Christmas Event. During FY 2016, this public event featured a watershed protection presentation by District Aquatic Biologist and District Water Conservation and Community Outreach Coordinator, along with water conservation and rainwater harvesting literature.

The Nueces River Authority Water Resource Stewardship Program in collaboration with BCRAGD heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each Spring season. Our District sponsors and co-facilitates the program every year.

District staff serve on various local groups focused on water conservation and watershed protection:

BCRAGD General Manager serves on the local Ag and Natural Resource Committee.

Multiple staff serve on the Medina River Protection Fund Board (MRPF), which meets numerous times at the District office during the Spring to organize the annual Medina River Clean up. The District makes a donation toward the clean up each year.

Two BCRAGD staff are members of Lake Medina Conservation Society (LAMCOS).

Our District's Water Conservation and Community Outreach Coordinator serves as the Madrona Garden Club's Secretary. The District was invited to give a presentation overviewing watershed protection, along with water conservation best management practices for homeowners, highlighting garden-specific techniques based on best available science.

Water Conservation and Natural Resource Stewardship

The District continues to partner with local entities to educate the community on natural resource stewardship. Bandera's Texas A&M AgriLife Extension Service (AgriLife) and Ranchers and Landowners Association of Texas (RLAT) have been essential partners in various community outreach efforts.

Growing a Garden With Less Water

This workshop was facilitated by AgriLife, RLAT, and BCRAGD at the Lakehills Library on April 9, 2016. The program detailed creative water conserving techniques, ranging from aquaponics to hugel kultur. Speakers included a local aquaponic guru (Andrea McGilvray) as well as members of the San Antonio Aquaponic and TransFarming Group (Patti Taylor and Josh Goode).



Local Water Resource Stewardship

This workshop was facilitated by AgriLife and BCRAGD on August 18, 2016. The educational focus was on protection efforts on the Sabinal and Medina Rivers, groundwater management and protection, invasive species, and the flood warning system to protect landowners during flood events. This free program was held at the Utopia Senior Citizens Center in Utopia.



Texas County Agricultural Agents Association Fall Retreat

BCRAGD was invited to speak at Texas County Agricultural Agents Association Fall Retreat at Twin Elm Guest Ranch on September 14, 2016. District staff gave presentations over watershed protection, outreach programs, flood warning system expansion, and policy updates.



Enforcement of State and District Rules

BCRAGD proactively enforces both state and District rules for well drilling. These rules are taken from TDL&R Administrative Code and BCRAGD's Adopted Chapter 36 Rules. As a result of this program, during FY 2016 the District:

- Inspected all permitted and registered wells in Bandera County to ensure compliance with both District and State rules
- Investigated nuisance complaints
- Issued Notice of Violations and ensured compliance with Notice of Violations
- Conducted investigations with TDLR

Permitted Well Program

The District maintains a permitting program for non-exempt wells. Pumping reports are collected each January and the amount of water is tabulated. Newly permitted wells are inspected to ensure compliance with District and State rules and requirements. These pumping amounts will help the District to evaluate the groundwater resources in the county for Desired Future Conditions (DFC) compliance and management.

In order to protect groundwater resources in FY 2016 BCRAGD:

- Identified Wells that needed to be permitted
- Permitted existing wells which required permits
- Prepared permit applications for Board approval
- Posted permit hearing information as required by District rules and by the Open Meetings Act
- Gave permit recommendations to the Board as needed
- Conducted contested case hearings
- Ensured compliance with annual pumping reporting requirements
- Transferred permits for changes in property ownership
- Identified permits that require permit amendments
- Tracked annual usage for DFC purposes

Permit Number	Issue Date
P- 1144	04-NOV-2015
P- 1145	20-NOV-2015

Registered Well Program

All exempt wells to be drilled are registered, approved, and inspected by the District to ensure compliance with both State and District rules and requirements. BCRA GD maintains a proactive policy of inspecting well sites before well registrations are issued. District staff inspect wells during the drilling and completion phases to ensure compliance with District and State rules. This approach has helped protect both the landowners and groundwater resources in Bandera County.

In order to protect groundwater resources in FY 2016 BCRA GD:

- Registered and issued authorization to drill domestic and livestock wells
- Registered existing exempt wells
- Ensured registered wells met exempt requirements
- Maintained files and database of registered wells
- Provided water logs to the general public when requested

Registration Number	Registration Date	Registration Number	Registration Date	Registration Number	Registration Date	Registration Number	Registration Date
R-3736	06-OCT-2015	R-3761	04-FEB-2016	R-3786	02-JUN-2016	R-3805	11-AUG-2016
R-3737	06-OCT-2015	R-3762	04-FEB-2016	R-3787	09-JUN-2016	R-3806	11-AUG-2016
R-3738	08-OCT-2015	R-3763	08-FEB-2016	R-3788	13-JUN-2016	R-3807	18-AUG-2016
R-3739	08-OCT-2015	R-3764	10-FEB-2016	R-3789	13-JUN-2016	R-3808	18-AUG-2016
R-3740	15-OCT-2015	R-3765	10-FEB-2016	R-3790	16-JUN-2016	R-3809	01-SEP-2016
R-3741	03-NOV-2015	R-3766	10-FEB-2016	R-3791	21-JUN-2016	R-3810	01-SEP-2016
R-3742	05-NOV-2015	R-3767	10-FEB-2016	R-3792	22-JUN-2016	R-3811	01-SEP-2016
R-3743	19-NOV-2015	R-3768	11-FEB-2016	R-3793	27-JUN-2016	R-3812	06-SEP-2016
R-3744	19-NOV-2015	R-3769	12-FEB-2016	R-3794	30-JUN-2016	R-3814	06-SEP-2016
R-3745	30-NOV-2015	R-3770	17-FEB-2017	R-3795	06-JUL-2016	R-3815	07-SEP-2016
R-3746	01-DEC-2015	R-3771	23-FEB-2016	R-3796	11-JUL-2016	R-3816	07-SEP-2016
R-3747	01-DEC-2015	R-3772	02-MAR-2016	R-3797	14-JUL-2016	R-3817	08-SEP-2016
R-3748	03-DEC-2015	R-3773	02-MAR-2016	R-3798	25-JUL-2016	R-3818	08-SEP-2016
R-3749	10-DEC-2015	R-3774	15-MAR-2016	R-3799	25-JUL-2016	R-3819	19-SEP-2016
R-3750	10-DEC-2015	R-3775	16-MAR-2016	R-3800	25-JUL-2016	R-3820	26-SEP-2016
R-3751	15-DEC-2015	R-3776	30-MAR-2016	R-3801	29-JUL-2016	R-3821	28-SEP-2016
R-3752	30-DEC-2015	R-3777	08-APR-2016	R-3802	03-AUG-2016	R-3822	29-SEP-2016
R-3753	11-JAN-2016	R-3778	08-APR-2016	R-3804	10-AUG-2016	R-3823	30-SEP-2016
R-3754	11-JAN-2016	R-3779	08-APR-2016				
R-3755	12-JAN-2016	R-3780	19-APR-2016				
R-3756	14-JAN-2016	R-3781	02-MAY-2016				
R-3757	15-JAN-2016	R-3782	03-MAY-2016				
R-3758	18-JAN-2016	R-3783	04-MAY-2016				
R-3759	26-JAN-2016	R-3784	09-MAY-2016				
R-3760	01-FEB-2016	R-3785	10-MAY-2016				

Monitor Well Program

The District maintains and operates a monitor well program to track and assess aquifer conditions in Bandera County. This is done through periodic water level measurements and quarterly water quality sample collection from designated monitor wells. As a result of this program, during FY 2016 the District:

- Conducted surveillance of aquifer conditions
- Tracked aquifer recharge
- Managed for Desired Future Conditions (DFC)
- Reported data to the Texas Water Development Board for DFC purposes
- Kept the public informed via the District's website and quarterly meetings
- Submitted to the local newspapers level aquifer information when available



Groundwater Management Plan

All Texas Groundwater Conservation Districts are required to develop and implement a TWDB approved management plan to effectively manage their groundwater resources. BCRA GD revised and approved its management plan on May 28th 2013. During FY 2016, BCRA GD:

Upheld management plan as required by TCEQ, TWDB, and the DFC process.
Ensured management goals are met and documented to compliance.

Groundwater Sampling & Water Analysis Program

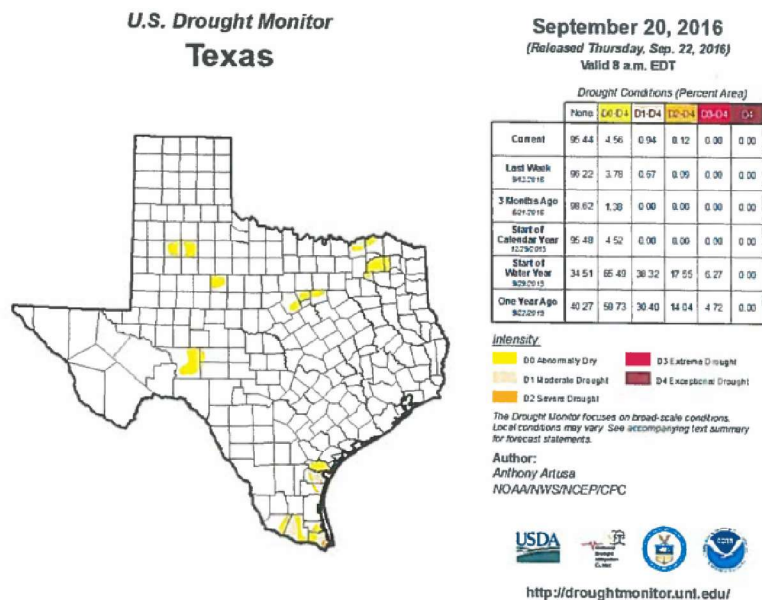
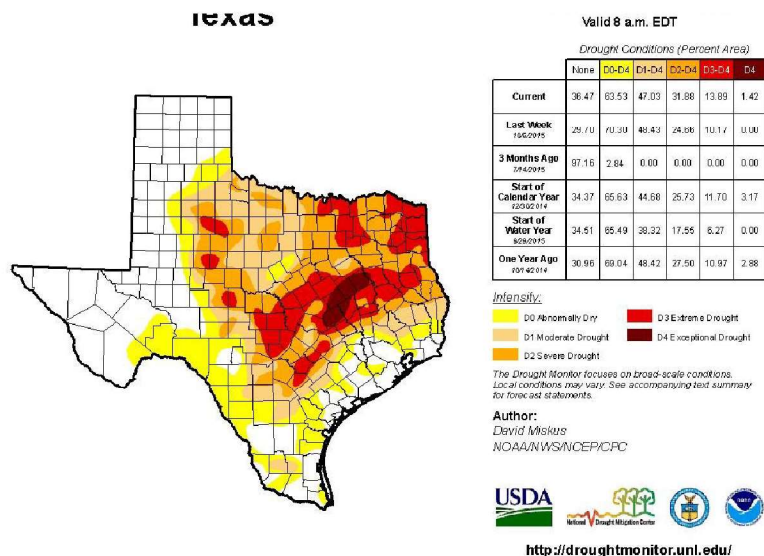
BCRA GD operates a non-certified laboratory that tests for the presence/absence of total fecal coliforms and E. coli, pertinent mineral content, along with hardness, pH, TDS and EC of water samples. BCRA GD tests groundwater samples collected from newly inspected wells at no cost to the owner, and offers groundwater testing services to the public for an at cost fee. Below is a breakdown of BCRA GD's efforts during FY 2016:

- Conducted chemical and bacterial analysis of monitor well samples
- Sampled and analyzed samples from newly drilled wells when possible
- Tested groundwater samples brought in by the public
- Provided the public information on avoiding sources of contamination and disinfecting identified contaminated wells
- Investigated complaints relating to contaminants and waste
- Educated and counseled citizens about sources of possible contamination
- Advised citizens about corrective and preventive measures for contamination

Drought Management Plan

All Texas Groundwater Conservation Districts are required to develop and implement a TWDB approved drought management plan. During FY 2016, BCRA GD:

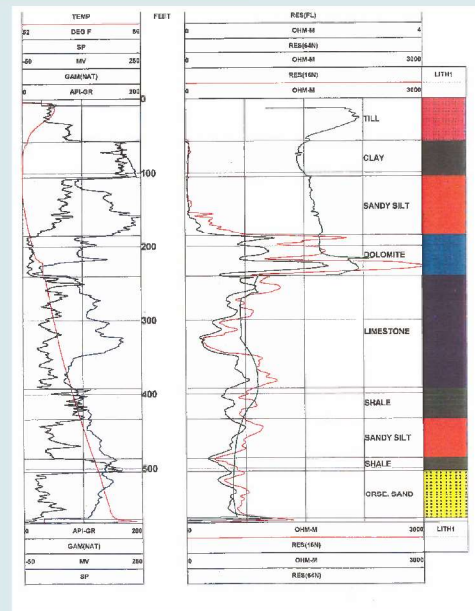
- Implemented drought stages
- Notified permit holders of drought stages and restrictions
- Investigated allegations of waste and issued NOV's as warranted
- Reported drought conditions at quarterly meetings
- Posted drought conditions weekly at the District office and on the District's website
- Reviewed Drought Management Plan



BCRAGD's WellVu Camera is a recorded media used to assess collapsed and/or damaged wells. It can also be used as a tool to investigate compliance with district well construction rules. The District provides a camera well inspection service in order to identify problems and assess damaged wells to determine if the well could be rehabilitated or plugged.

Geophysical Logging Program

BCRAGD is partnered with Blanco Pedernales Groundwater Conservation District, Hill Country Underground Water Conservation District, and Central Texas Groundwater Conservation District in shared ownership of a geophysical logging trailer, in which the geophysical properties of our aquifers are regularly recorded and monitored. Data recorded further informs aquifer science and groundwater management in the region.



Abandoned Well Plugging Program

There is a high environmental risk associated with abandoned/deteriorated wells, as they are a direct conduit from the surface to our groundwater resources. In response to the existence and threat of abandoned wells to the health of Bandera County's groundwater, BCRA GD offers the public a well plugging program.

- The District plugged 2 wells for the general public during the Fiscal Year 2016. Those were reported to TDL&R.
- BCRAGD also issued violations to well owners to plug or repair abandoned wells.
- The District contributed abandoned well information to presentation and aquifer model components of the Nueces River Authority Water Resource Stewardship Program as well as to other outreach efforts.

Please contact us at (830) 796-7260 with questions regarding any abandoned well in Bandera County.

Texas Alliance of Groundwater Districts Member

Founded in 1988, the Texas Alliance of Groundwater Districts (TAGD) “works to promote and support sound management of groundwater based on local conditions and good science. TAGD provides educational and technical assistance to member districts and the public, serves as a resource on groundwater issues with state officials, assists members in keeping current with state law, and is a central point of contact for information on groundwater issues and practices.” (excerpt from TAGD’s website, <http://www.texasgroundwater.org/>). During FY 2016, BCRAGD remained an active member:

- BCRAGD General Manager served on Legislative Committee
- The District was invited to speak on an education panel during a Texas Alliance of Groundwater District meeting on January 27, 2016.
- BCRAGD staff represented the District at all TAGD quarterly meetings as well as TAGD’s Annual Summit

Groundwater Management Area 9 (GMA-9) Member

Groundwater Management Areas were created “in order to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objectives of Section 59, Article XVI, Texas Constitution, groundwater management areas may be created...” (Texas Water Code §35.001) Added by Acts 1995, 74th Leg., ch. 933, §2, eff. Sept. 1, 1995.

BCRAGD has been a member of GMA-9, a regional water management group, since 2005. More information on the group, including data and reports can be found at http://www.twdb.texas.gov/groundwater/management_areas/gma9.asp

Our District’s involvement is summarized below:

- Supplied groundwater data to TWDB for determination of aquifer conditions and Desired Future Conditions (DFCs)
- Maintained program to require measurement of permitted well usage as required by the state to determine water usage for the county
- Represented the District at the GMA 9 public meetings for the purposes of DFC compliance
- Attended adjacent GMA meetings for DFC’s compliant strategies

Texas Clean Rivers Program

The District partnered with San Antonio River Authority (SARA) to participate in the Clean Rivers Program in the San Antonio River Basin in 2012. BCRAGD staff are responsible for sampling 6 sites, which are in Bandera County and summarized on page 50. FY 2016 CRP sample dates were October 14-15, 2015, December 29-30, 2015, March 1-2, 2016, and July 26-27, 2016. The District was audited by the SARA for the TCEQ Clean Rivers Program on June 14, 2016.

At the end of FY 2016, the District partnered with SARA, adding five CRP sites on Medina Lake along with two CRP sites on Diversion Lake. The sample dates for Medina Lake were September 28-29, 2016.

BCRAGD partnered with Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff are responsible for 2 sites shown on page 50. The first FY 2016 sample dates for the Nueces River Basin was August 3, 2016.

During FY 2016 District staff also:

- Assisted SARA with Biological sampling and TCEQ with Aquatic Life Monitoring
- Attended and participated in the annual CRP Coordinated Monitoring Meeting
- Attended and participated in the San Antonio River Basin Steering Committee meeting in Karnes City.
- Attended and participated Nueces River Basin Steering Committee meeting in Corpus Christi.



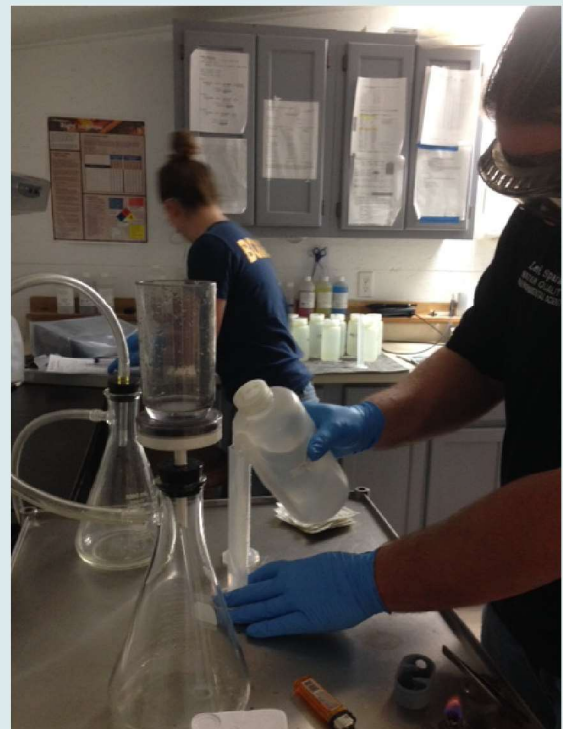
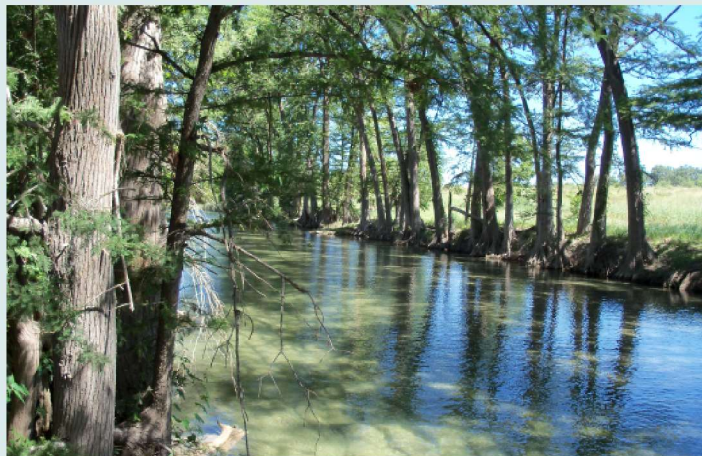
District In-House Surface Water Programs

In order to preserve and protect the headwaters of the Medina and Sabinal rivers, BCRAGD conducts multiple In-House programs to monitor water quality and inform the public of any potential concerns.

Surface Water Quality Monitoring Program

This surface water sampling program was initiated in order to monitor water quality throughout Bandera County. It has been modified to better serve the community by increasing the number of sites for a more representative data collection, reporting E. coli counts via local newspapers to the citizens of Bandera County for safety. This program allows District staff to detect bacteria spikes in the Medina or Sabinal River and follow up with an immediate investigation.

From October 2015 to September 2016 there were zero instances with E. coli counts over the TCEQ standard of 399 cfu (colony forming units) per 100 mL of sample water. Should the count ever be over the limit, the District recommends no swimming for that area. That sample site area is then investigated, beginning with a re-sample effort and further investigation if the count remains above the standard.



Nonpoint Source Pollution Initiative on Medina Lake

Medina Lake is utilized as a source of drinking water for San Antonio and riparian residents. In the last few years, there has been an increase in population in the surrounding areas, and water recreation has grown in popularity. In July of 2016 BCRAGD began the Nonpoint Source Initiative as a survey of Medina Lake's waters to identify any potential nonpoint source pollution, and/or potential health risks to the public.

Nine Medina Lake coves will be sampled for the presence of fecal coliforms and *E. coli* in conjunction with other water quality monitoring that is currently taking place on Medina Lake, including the In-House water quality study and the Clean Rivers Program. Results will be published in a report at the conclusion of the project. See pages 51 and 52 for a combined summary of our In-house sampling & NPS sampling events.



Environmental Investigations

Illegal Dumping Litter Abatement Program

BCRAGD operates an illegal dumping litter abatement program to proactively protect and manage surface water and groundwater resources. The District adopted rules out of Chapter 51 of the Texas Water Code, dealing specifically with illegal dumping that affects water quality. The rules are in both the civil and penal code.

Public Safety / Pollution

BCRAGD serves as a first responder in cases of possible surface water or groundwater pollution or contamination. They investigate and identify the potential problem and refer to outside regulatory agencies when warranted.

The District's in-house surface water quality programs allow staff to detect bacteria spikes and follow up with immediate investigation and re-sampling.

Invasive Species Management and Education

BCRAGD staff monitor and educate the general public on invasive species activity in Bandera County as well as the importance of native species. Of particular interest is the invasive and noxious species, *Arundo donax* (Giant Reed), which is classified as a noxious plant species under the Texas Administrative Code, Title 4, Part 1, Chapter 19, Subchapter T. This classification means that *Arundo* has "serious potential to cause economic or ecological harm to the state". The Nueces River Authority has been actively and successfully managing this species along a portion of the Sabinal River in Bandera County for the last eight years. BCRAGD has provided funding for the Nueces River Authority to continue treating the *Arundo donax* along this portion. The District is currently in preliminary stages of beginning *Arundo donax* management on the headwaters of the Medina River.



Medina River Clean Up

The Medina River Cleanup is an annual event that supports a healthy ecosystem through the organization of volunteers to remove trash and debris from the Medina River. BCRA GD supports and participates annually through donation and advertising in local papers, the District's website, the District's office, and email chain.

For the 2016 river clean up, District staff volunteered along with BCRA GD Directors Don Sloan and Bob Williams. There were 212 registrants total, and 2.5 tons of debris were removed from the Medina River.



Environmental Flows - GSA BBASC

BCRAGD is a member of the Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (GSA BBASC). It was “created by the 80th Texas Legislature in recognition of the importance that the ecological soundness of our riverine, bay, and estuary systems and riparian lands have on the economy, health, and well-being of our state”.

The above excerpt and more information can be found at the following website: https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/eflows/guadalupe-sanantonio-bbasc

District General Manager, Dave Mauk, serves as a BBASC Member, representing the Regional Water Planning Groups Interest Group.

Region J - Plateau Water Planning Group

BCRAGD is a representative Groundwater Conservation District on the Region J Plateau Regional Planning Group, and represents Bandera County in the design of viable water management strategies in the region. BCRAGD attends planning group meetings, and proactively participates with Region J’s consultants in the creation of the Region J Water Plan.

Chapter 36 Administrative Requirements

During FY 2016, the District maintained and reviewed policies mandated by Chapter 36 of the Texas Water Code including the Public Funds Investment Policy, Ethics Policy, Financial Management Policy, and Travel Policy. Additionally, the District reviewed and adjusted rules and District activities.

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ARTICLES/PUBLICATIONS/PRESS RELEASES

<u>Article Title</u>	<u>Date</u>	<u>*Newspaper Published</u>
BCRAGD suit against BMA begins in district court	10/01/15	BCC
District judge denies first plea	10/08/15	BCC
GMA 9 joint planning meeting	10/08/15	BCC
BCRAGD sends Flying L case to state	10/15/15	BCC
Public Hearing on the Proposed DFC	10/28/15	BB
Public Hearing on the Proposed DFC	10/29/15	BCC
New hires at county river authority	11/12/15	BCC
Old Timer up & running after gas spill	12/03/15	BCC
Newspapers never get it right, claims BMA attorney	12/24/15	BCC
Judge grants BCRAGD's motion against BMA	01/14/16	BCC
BCRAGD quarterly meeting today	01/14/16	BCC
BCRAGD: 2015 rains raise aquifer	01/12/16	BCC
River Authority updating spill response plan	01/20/16	BB
Bacteria Counts in Bandera's Surface Water	01/28/16	BCC
Public Hearing on Proposed DFC	02/11/16	BCC
BISD school board mtg highlighted by students, vols	04/07/16	BCC
BCRAGD to purchase w/c for quality monitoring, invest.	04/21/16	BCC
Flying L gets hearing date	05/11/16	BB
River Clean-up 2016	05/19/16	BCC
River cleanup - just in time	06/02/16	BCC
If it's Memorial weekend, there's sure to be flooding	06/02/16	BCC
County encounters dam problems	06/09/16	BCC
BCRAGD - first in state to apply for flood protection grant	06/16/16	BCC
Secret of disappearing water revealed by BCRAWD	07/21/16	BCC
Bacteria Counts in Bandera's Surface Water	08/04/16	BCC
Water stewardship workshop set in Utopia	08/17/16	BB
BCRAGD takes on government, increases budget	08/18/16	BCC
Tax hike envisioned in river authority spending plan	08/24/16	BB
Public Hearing on Proposed Property Tax Rate	09/01/16	BCC
BCRAGD receives flood warning grant	09/01/16	BCC
Groundwater district, Flying L take pumping rights claims...	09/07/16	BB
Rainwater harvesting conserves groundwater	09/08/16	BCC
SOAH - now pumped water under the bridge	09/08/16	BCC
River authority approves slight tax increase	09/14/16	BB

**Note: BCC= Bandera County Courier; BB= Bandera Bulletin*

FEATURED ARTICLES

2015-10-08

District judge denies first plea

By Carolyn B. Edwards BCC Staff Writer

The Honorable M. Rex Emerson, 198th District judge, issued an order denying Bexar Medina Atascosa (BMA) WCID's second amended plea to the jurisdiction on Oct. 6.

The order addressed information covered in a district court hearing held Friday, Sept. 25, in Bandera. It references Cause No. CV13-361, Bandera County River Authority & Groundwater District (BCRAGD) v BMA.

BCRAGD General Manager Dave Mauk said the denial was good news for the water district, but more hearings are to come. Mauk said the district was surprised that Judge Emerson issued his decision on this first step in the water district's lawsuit against BMA so quickly. "We were expecting it to take 90 days," Mauk said.

By bringing the suit, BCRAGD hopes to clarify just which WCID - BMA or BCRAGD - has the ultimate authority in setting and enforcing certain water rules and regulations in Bandera County.

The local district contends that two WCIDs can't have overlapping authority, based on Texas water law. BMA counters that, as the entity that governs the irrigation company that owns Medina Lake, it has final authority on property in Bandera County that BMA purports to own.

2015-10-15

BCRAGD sends Flying L case to state

By Carolyn B. Edwards BCC Staff Writer

After more than a year of discussions and hearings regarding a protest from the Flying L Guest Ranch Ltd., members of the Bandera County River Authority and Groundwater District (BCRAGD) Board of Directors voted last week to send the issue to the State Office of Administrative Hearings (SOAH).

The ranch has requested a variance from a permit issued by BCRAGD's General Manager David Mauk stipulating the allowance of 240 acre feet of pumped water per year. They claim their existing permit was arbitrarily changed by Mauk; that they own more acreage than the new permit is based on; and that their previous permit entitles them to 2,096 acre feet annually. As a point of reference, the City of Bandera pumps around 200 acre feet per year.

The ranch also wants their permit to allow them to use all that water for agricultural, industrial, recreational and municipal use. They are currently permitted for commercial, domestic and irrigation usage only. Mauk had issued the new permit in February of this year to be in accordance with changes in the district's rules and regulations adopted in 2014.

While little to no progress has been made toward an agreement between the two parties in the course of the variance hearings, a number of challenging legal issues have come to light.

During a hearing held at the water district in June, Greg Ellis, attorney for the general manager, urged care in dealing with water rights that may belong to property owners in the separate Flying L Ranch Subdivision. The Guest Ranch is claiming to have kept the water rights when those lots were sold, but no deeds have been offered in evidence.

Ellis suggested the BCRAGD board turn the hearings procedure over to the SOAH. "A contested hearing is like a trial and the board sits as judge and jury." SOAH provides an administrative judge to hear the case and make sure it follows the law. After the evidence has been properly presented, the judge makes a recommendation to the BCRAGD board. "The board has the final say," Ellis said.

After the board voted to turn the job over to the state agency, Ellis warned them about ex parte communications. "Board members cannot talk to, email, write to or in any way communicate with anyone about any part of this matter," Ellis explained. "If they do, they can't vote!" Constituents are hereby advised not to call their representatives on the BCRAGD board to chat about this issue. Any questions should be directed to the general manager.

Flying L Guest Ranch Ltd. has agreed to split the SOAH costs. However, BCRAGD will be solely responsible for the expenses of its attorneys, expert witnesses and other costs.

The SOAH hearings will be held in Bandera.

At the beginning of last Thursday's (Oct. 8) BCRAGD quarterly meeting, a number of people took advantage of the public comments section of the agenda, mostly to voice their opposition to the granting of the request for a variance.

John Hegemeier, mayor of Bandera, said the variance would "negatively affect the City of Bandera and anyone [in the county] who uses the Trinity Aquifer." Hegemeier added that while it is "difficult to spend taxpayer dollars on attorneys," it seems to be necessary in this case.

Several speakers thanked the BCRAGD board for "seeing to it that water is used...fairly," including Rachel Mulherin from the Medina Lake area and Ed Barnes, facilities director of the Bandera Independent School District, which operates two water systems.

Mike Crandall and Henry Bussey, landowners, agreed that the river and the lake are vital resources for the county and that aquifers affect the river and lake. Bussey said, "Flying L is asking for a 9-fold increase without an explanation...I think the impact will be greater than we anticipate."

Clifford Herbst, longtime resident and rancher, asked the board to refuse the request, saying that the increased pumping would affect "all of us."

Former BCRAGD board member Ernie de Winne, who serves on the board of the water system at Bandera River Ranch, presented data contrasting the amount of water his system pumps versus what Flying L is requesting. "I've played golf there when there was over pumping and swampy areas," he said. "You don't issue permits for the maximum amount you can pump."

Veterinarian Conrad Nightingale, who owns a business and lives next door to the ranch said both of his wells have gone dry since the ranch installed a water park. "I've also heard people complaining about water running across Bottle Springs Road [on the eastern side of the property]" he said. "All I'm asking is that Flying L reconsider its request and be neighborly."

The only person who spoke on behalf of the ranch was their attorney, Renee Ruiz, who insisted that whatever Flying L pumps from the aquifer has no effect on Medina Lake or the Medina River.

(Writer's note: "Ah, Renee. The leg bone's connected to the knee bone, the knee bone's connected to the thigh bone....")

2015-11-12

New hires at county river authority

By Carolyn B. Edwards BCC Staff Writer

Photo by Carolyn B. Edwards

Drusilla Meier and Levi Sparks have joined the staff of the Bandera County River Authority and Groundwater Conservation District.

Two new scientists have joined the staff at the Bandera County River Authority and Groundwater Conservation District (BCRAGD) General Manager Dave Mauk announced last week. Drusilla Meier comes on board as an aquatic biologist and Levi Sparks will oversee water quality and environmental issues.

"In the past, the district has been criticized for not making science-based decisions," said Mauk. "Our very qualified staff helps us make sure our decisions are based on scientific data."

Sparks, a native of Rotan, will receive his master's degree in December from West Texas A&M. His under-grad studies included majoring in wildlife biology and mass communication. His master's is in biology with a specialization in fisheries.

The former football player said he became interested in BCRAGD when he met Sharon Sloan, wife of the district's board president Don Sloan, at a Cajun Fest a few years ago.

"She was manning the 'Save Medina Lake' booth and asked me if I would sign their petition," said Sparks. Sloan soon filled Sparks in on various water issues facing Bandera County and he wanted to learn more.

"I grew up on a farm and ranch and thought I wanted to be a vet, but I realized dogs and cats were boring for me," he admits. When he went on a fishing trip with some friends in high school and they asked him to identify a fish, he began to realize his interest in wildlife, especially wildlife with fins.

Meier graduated from Schreiner University with a degree in biology. She plans to go to veterinary school hoping to deal with large animals. This stint with BCRAGD will give her valuable work experience with somewhat smaller animals and plants.

Meier, a native of Clive, has had a lifelong interest in creatures, having informed her mother at the wise old age of five that she wanted to "grow up to be an entomologist."

We're hoping Meier will get involved with the Bandera Gun Club's shooting team, since she won the women's world skeet championship with the 12 gauge in 2012.

Meier will be the face of the district since she will be manning the front desk to help patrons who come into the office.

Sparks and Meier fill staff slots formerly filled by Sarah Schlessinger and Roy Chancy.

Other scientists who remain on the staff include biologist Michael Redman who handles well permitting and nuisance reports; hydrogeologist David Jeffery, in charge of well-logging; and Morgen Ayers, biologist, who handles water conservation and community outreach. Former staffer Kayla Rohrbuch has been on leave to complete her master's degree at Texas A&M. She will be back in the office shortly as the watershed protection coordinator. Jeff Jilson serves as the district's operations manager, backed by 26 years in the Special Forces.

"We have more mandated rules and regulations now," said Mauk. "Our county population continues to grow. That means more demands for water. Our scientists will help us deal with those changes and those demands."

The public is always welcome to stop by the BCRAGD offices at 440 FM 3240 with any questions they might have about water quality testing, well plugging or well drilling rules and regulations. Report possible violations of rules or incidents of pollution to the district at 830-796-7260.



Judge grants BCRAGD's motion against BMA

By Carolyn B. Edwards BCC Staff Writer

Bandera County River Authority and Groundwater Conservation District (BCRAGD) received a belated Christmas gift from Judge Rex Emerson of the 198th District Court this week. Emerson granted the district's motion for summary judgment in Cause No. CV-13-351 on Jan. 7.

BCRAGD filed the suit against Bexar Medina Atascosa Counties Water Control and Improvement District No. 1 to clarify jurisdictional issues of the two districts in Bandera County. BCRAGD contended that state law prevented two water control districts from having overlapping jurisdictions. BMA, an irrigation company with rights to water in Medina Lake, contended that it owned properties in Bandera County and therefore had jurisdiction over those properties.

In Emerson's order, he stated that "on said property [BMA] has all the rights, duties and responsibilities of an individual property owner [emphasis ours]."

He went on, "Both the BCRAGD and the BMA are legislatively created water districts with defined boundaries that do not overlap [emphasis ours]."

Emerson concluded his order with three declarations: "That Defendant Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1 has no jurisdiction in Bandera County to: a) Enforce any jurisdiction or rules over groundwater or surface water; b) Promulgate any rules relating to groundwater; or c) Exercise any regulatory enforcement rights as a water control and improvement district."

Don Sloan, president of the board of directors for BCRAGD, said he welcomed the clarification offered by the legal decision. "We're very pleased with this outcome. This will be to the great benefit of the people of Bandera County by keeping local control of water issues," Sloan said.

BCRAGD's board of directors voted way back on Oct. 22, 2013, to file the suit against BMA to clarify the jurisdictional questions. The board became concerned about a possible attempt by BMA to impose its authority over water issues in Bandera County while working through the State Legislature to change BCRAGD's directors' election date from May to November.

At that time BMA tried to add an amendment to BCRAGD's proposed legislation that said "To the extent of a conflict between the rules adopted by the district and the rules adopted by the [BMA] within territory subject to the rules of both the district and the [BMA], the rules of the [BMA] shall prevail."

This week's judgment by Emerson finally makes it clear that there is no territory subject to the rules of both entities. In June 30, 2013, issue of the Courier, this writer cited an interview with BMA business manager Ed Berger. Berger asserted that BMA has historically had legal control of lakefront property below the 1084 line (the top of Medina Dam). He cited as an example an agreement between BMA and its Waterfront Property Owners Association reached in 2007, in which the WPOA members acquired a perpetual easement to their lakefront property. WPOA members pay BMA one dollar per linear foot of lakefront per year for that easement, Berger said at a Sept. 25, 2015 hearing.

Berger said over 440 people have signed that agreement. According to testimony Berger gave at a previous district court hearing, that represents about 180 properties in Bandera County.

However, not everyone agrees that BMA has a clear title to all the property below the 1084 line. The Lake Medina Conservation Society (LAMCOS) is an organization founded at least in part to support lakefront property owners who disagree with BMA's position of entitlement.

BMA continues to make its claims to the land below the 1084 line in Bandera County despite the fact that the Texas Court of Civil Appeals ruled in 1981 that BMA has no jurisdiction in Bandera County.

In Case No. 16520, BMA v Wallace, the court also ruled that the warranty deed upon which BMA asserts its ownership, executed in 1917 from Joseph F. Spettle et al to The Medina Valley Irrigation Company, had an insufficient description of the disputed tract of land to be enforceable.

BCRAGD: 2015 rains raise aquifers

By Carolyn B. Edwards BCC Staff Writer

It's sort of good news. After a record wet year in 2015, the aquifers underlying Bandera County are showing a rise in levels. That was the good news delivered by David Mauk, general manager of the Bandera County River Authority and Groundwater District at its quarterly board meeting. The board met Thursday morning, Jan. 14. The district's monitor wells show rises of water levels in the Middle and Lower Trinity Aquifers from which most of us get our water. The Edwards Aquifer that sits beneath the northwest corner of the county has also risen. The bad news is that none of the aquifers have yet recovered to levels held in years prior to the five-year drought preceding 2015, Mauk said. That prolonged water shortage severely affected every local aquifer, with many wells going dry.

Forecasters are already predicting the turning of a favorable El Niño in the Pacific, often a harbinger of rain for Texas, to a dryer La Niña in 2016-17. That could mean that our aquifers will remain below historical levels for some time.

In other words, residents need to continue to conserve water and treat it as the precious resource it is. As a new item in the river authority's educational arsenal, the district is now offering water conservation information and tips on handy jump drives that taxpayers can check out from the district's offices at 440 FM 3240.

In the general manager's report to the board, he announced that 19 wells have been registered for the first quarter (October, November, December) of fiscal year 2016. Two wells were permitted and one variance request was granted.

The district received five nuisance requests that were investigated. No notices of violation were issued. One of the nuisances was a dam built to block stream flow by a TxDOT contractor working near Wallace Creek north of Medina. "We worked with TCEQ to mitigate any damaging effects," Mauk said.

The district continues to work on cleaning up a 30-year-old dumpsite on Simmons Road in Lakehills. "It's going to take awhile," Mauk said. "We found an old car buried five feet deep." Water seeping through the dump makes its way into Medina Lake.

When board member Karen Ripley asked why the county, which now owns the lot, is not helping with the clean up, Mauk said, "I'm in the lead, follow or get out of the way mode on this situation."

The district continued its well logging program during the quarter. It shares the logging equipment with other districts to help keep expenses as low as possible.

No abandoned wells were plugged during the first quarter. According to Texas law, "the landowner is responsible for plugging abandoned water wells and is liable for any water contamination or injury that results from an unplugged well," AgriLife Extension Service reports. BCRAGD staff can assist landowners with the process of plugging a well.

Abandoned wells can be treated in three ways: 1) by returning the well to an operable state, 2) by capping the well according to state law standards, or 3) by plugging it from the bottom to the top with bentonite, bentonite grout or cement. There are required forms and reports that need to be completed and filed.

Mauk also reported on the multitude of educational programs his staff participated in, training sessions completed and meetings, seminars and conferences attended.

With the news from 198th District Court last week that Judge Rex Emerson had ruled that BMA WCID #1 has no jurisdiction over surface or groundwater rules and regulations in Bandera County (See Bandera County Courier Jan. 14 issue), Mauk said BCRAGD will expand its efforts to assure the water quality of Medina Lake.

The lake is currently at 63 percent of capacity. The district will continue water quality monitoring and pollution surveillance. It plans to look at the possibility of beneficial aquatic plant reintroduction and the insertion of selective brush piles. Monthly fishing updates and tips will be posted on the district's website. "We want to try to get the lake back to the 1940s," said Mauk.

BCRAGD to purchase watercraft for quality monitoring, investigations

By Sandy Jennings BCC Staff Writer



BCRAGD Board of Directors Bob Williams, Jerry Sides, Don Kruckemeyer, Sid Gibson and Don Sloan. Neil Boultinghouse, Sherry McLeod, Karen Ripley and Gene Wehmeyer were not pictured.



**Sandy Jennings photos
BCRAGD staff Levi Sparks, Morgan Ayers, Drucilla Meier, David Mauk and Jeff Jilson**

The Bandera County River Authority and Groundwater District (BCRAGD) Board of Directors, under the general management of David Mauk, presented a well-organized, in-depth report and called for action on six items during their quarterly meeting on Thursday, April 16, at their headquarters at 440 FM 3240.

The meeting was called to order by President Don Sloan, who repeatedly thanked Mauk and his staff for the incredibly informative and transparent presentation of the quarterly and annual reports, including two published booklets, a PowerPoint presentation and a “take-home” jump drive filled with daily schedules, financial reports and information on water conservation.

In fact, so much information was offered at the meeting that the Courier will publish more articles regarding the reports. “You make us look good,” Sloan said in reference to the board members, who didn’t hesitate to ask questions and initiate discussions on each agenda item.

After approving the minutes from last meeting and the quarterly budget report, the board discussed at length and approved the purchase of a watercraft to be used for water quality, natural resource monitoring and environmental investigations.

“We need to get to the center of the lake,” Mauk said. “We have only been able to test surface water.” Mauk noted that Medina Lake is no longer being tested by the TCEQ (Texas Commission of Environmental Quality) and stated that it is the ongoing “responsibility of the BCRAGD to safeguard these aquatic resources for Bandera County and everyone in the surrounding areas.”

The board approved approximately \$15,000 to purchase the boat that will prominently display the BCRAGD emblem and be used, according to Mauk, a minimum of four times biweekly.

The board also approved moving \$75,000 from the checking account to a CD at Texas Hill Country Bank and initiating the Purchase Order system, which provides another checks and balance system to an already stable and transparent fiscal account.

The BCRAGD staff presented a PowerPoint presentation that included information and pictures of daily operations and activities performed around the county.

Morgan Ayers, Water Conservation and Outreach, presented the board with the recognition plaque she received from Bandera Independent School District for her work in the community classrooms.

Before adjourning, Sloan reminded everyone of the upcoming Medina River Cleanup, slated for 9 am to noon, Saturday, May 7, which will include food, music and free T-shirts for volunteers.

BCRAGD – first in state to apply for flood protection grant

By Sandy Jennings BCC Staff Writer

At their quarterly board meeting on Thursday, June 9, directors of the Bandera County River Authority and Groundwater District (BCRAGD) authorized General Manager David Mauk to apply for a Texas Water Development Board (TWDB) Flood Protection Grant for Bandera County.

If the BCRAGD receives the \$575,000 grant, Bandera will be the first county in the state to implement the new program presented to the board by Doug Schnoebelen, PhD, and Sam Rendon of the United States Geological Survey (USGS).

“The plan is an incredible, powerful tool for the city, allowing them to know when and where to evacuate people,” Rendon said. “It is a pilot program for the United States.”

The program’s four key factors include monitoring the rate and amount of rainfall, risk assessment, communication and response capability.

Bandera would add two additional gauges – at the North and West forks of the Medina River – to existing monitor gauges located at Medina and Bandera. The two new gauges would monitor how much rainfall and at what rate the rain is falling, to allow fact gathering from all tributaries and the entire basin.

Risk assessment would also include using Flood Inundation Maps (FIM) to show different depths of the river, a flood atlas and “what if” scenarios to enhance predictions, response and recovery.

In addition, communication increases through the FIM web application, which would allow the public to view in their computer or phone. “Getting that information to the right people – the Decision Support System – is the most important factor,” Rendon said.

He also added that “after action” reports can be added to monitor and learn from the patterns of flooding, response and action taken.

“This program integrates all of these systems into one application, allowing you to see everything at once,” Rendon said. “This is an extremely powerful tool to help the community deal with flooding.”

Mauk told the board that he and BCRAGD staff would work with the city, county and school districts to implement this program when it comes to fruition. He also added that, should the total amount needed not be met by the grant, it would take financial support from all of these entities to fund the program.

“There are a lot of ways to make this happen,” Schnoebelen said. “We have worked to design the correct decision-making tool. It is a science. It is where we need to go to have the correct tool to make and communicate those decisions. Communication is the key.”

Secret of disappearing water revealed by BCRAWD

By Sandy Jennings BCC Staff Writer



Courtesy photos

BCRAWD Board President Don Sloan presents award of appreciation to Judy and Paul Newman of the Mayan Dude Ranch

Dr. Ron Green, a groundwater hydrologist from Southwest Research Institute for the past 20 years, presented results from a three-year effort. The study concerned the revised conceptualization of the contribution of water from the Medina River to the Edwards Aquifer, to the Bandera County River Authority and Groundwater District (BCRAGD). Green spoke at the BCRAGD quarterly meeting held Thursday, July 14.

With regard to the role Medina Lake plays in recharging the

Edwards Aquifer, Green stated, "Groundwater going out of the Lake is about 78,000 acre feet per year. I don't have a problem with that."

He went on to explain how they continue to measure sub-surfaces within Medina River and other feeders to get a better understanding of the loss of water experienced by the lake.

"What we found are significant gravels in Medina River," Green said. "Those gravels that are highly prolific in conveying water around here include the Leona gravels. The only two places – only two rivers – that we've seen this in this area with that (Leona) gravel are the Leona River South of Uvalde and the Medina River. In both cases, they convey an awful amount of water."

Green explained all the apparatus and equations used to monitor the yearly flow.

"When all is said and done, 88,000 acre feet of water in an average year is flowing through those gravels," he said.

Basically, what Green and his crew discovered looking back at the equations, was a theory of the disappearance of the groundwater of Medina Lake.

"Loss of water of Medina Lake isn't water that infiltrates down to the Edwards (aquifer). It's water that goes out those gravels."

Summing up his research, Green stated, "This work provided the basis for a redefinition of the relationship between Medina Lake and Diversion Lake's system and the Edwards Aquifer."

Following Green's presentation, BCRAGD General Manager David Mauk presented the Mayan Dude Ranch with the Watershed Partner Award, reading a heartfelt prepared statement.

"Your (Mayan Dude Ranch) hospitality and collaboration with our district in allowing access to surface water sites has promoted the water quality protection efforts for our local community," Mauk said. "This cooperation has enabled our district to assist scientists from the Texas Commission Environmental Quality, as well as, the San Antonio River Authority.

He continued, "We'd also like to applaud your efforts in hosting the Texas Watershed Protection Short Course over the years that a number of our staff has attended. You've also hosted the Texas Environmental Law Enforcement workshop that our staff has also attended. We just want to say thank you."

Judy and Paul Neuman accepted the award on behalf of the Mayan and in return, thanked the BCRAGD for "all of their work taking care of the river and waters of Bandera County."

Mauk presented the FY2016, Second Quarter report covering nine different reports that can be reviewed on their website.

2016-08-18

BCRAGD takes on government, increases budget

By Sandy Jennings BCC Staff Writer

Courtesy photo

BCRAGD's increased budget for fiscal year 2016-2017 includes an increase in water testing and supplies.

In another bold move by the Bandera County River Authority and Groundwater District (BCRAGD), the board of directors authorized General Manager David Mauk to work with Groundwater Management attorney Greg Ellis to develop potential legislation regarding abandoned wells.

"If you have an abandoned, deteriorated well, that's considered a public nuisance," Mauk said during the Thursday, August 11, meeting. "In the code, it allows landowners to plug their own wells, as long as they plug them to the standards of TDLR (Texas Department of Licensing and Regulation).

He continued, "We'd like to at least look at the opportunity to develop a policy where the landowner would be the one on site and we would be the one assisting them in plugging the well."

Board director Jerry Sides took it a step farther. "I think we need to do it where we don't have to have the landowner's consent," he said. "The reason for this is we're going to get into a well that eventually needs to be plugged that the landowner doesn't want to plug and we're going to have to enforce the matter and then we're back to square one and you're going to have to hire someone else."

Sides explained that for 10 years they've been asking TDLR to allow water districts, specifically Bandera, to plug abandoned water wells. Even though TDLR agrees it's a good idea for individual district staff to plug abandoned wells, they will not give permission to do so.

According to TDLR, the landowner is responsible for plugging an abandoned and-or deteriorated water well and only a licensed well driller and-or licensed pump installer or the landowners themselves can plug an existing water well.

"We're plugging wells now, but David Jeffers is the licensed driller," Mauk said. Jeffers is not on the BCRAGD staff. "It's problematic for us to go ahead and get a driller license for a staff member because they have to apprentice for two years under a driller that's already regulated."

Gaining consent for staff members of the BCRAGD to be allowed to plug abandoned wells without landowner's consent would mean changing the legislation as it now stands.

"I don't care if we're the only district with this legislation. I would love to see it across the State. I want to pass it as a local bill for this district," Sides said. "This is part of our management plan, plugging wells. It's approved by the state that we plug, I believe, five wells a year. We've been doing it for years."

Sides spoke of the equipment already purchased for the sole purpose of plugging wells – an estimated \$15,000 – and the board addressed the fact that the BCRAGD covers most of the cost for plugging wells.



The motion authorizing Mauk to work with Ellis and develop legislation to allow BCRAGD to plug abandoned and deteriorated wells without the landowners' permission passed unanimously.

With projected legal fees and travel to legislators in session, along with aquifer protection, watershed protection, educational and community outreach and regional cooperative and policy planning, the BCRAGD voted for an 11 percent increase to their budget, adding \$81,000 to their overall budget of \$805,000.

Mauk reminded directors that they were forced to set aside \$75,000 for legal fees in pending litigation. He also noted a \$4,700 tax increase in BCRAGD property and the fact that they increased the amount of tests on Bandera County's water supply.

"The fact that we have increased the amount of testing and the increased areas of water being tested is definitely an outreach to this community that I hope does not go unnoticed," Mauk said.

The BCRAGD, with the Ag Extension office, will host a Water Resource Stewardship workshop in Utopia, from 8:30 am to 11:30, Thursday, August 18. The workshop covers four topics – Protecting the Sabinal and Medina Rivers, Groundwater Overview, Flood Warning System and Invasive Species.

2016-09-01

BCRAGD receives flood warning grant



By Judith Pannebaker BCC Editor

Courtesy photo

This image shows the area of Bandera City Park by the dam near Highway 173 South during 2012 flood event.

The Bandera County River Authority and Groundwater District has received a grant of \$265,150 to develop an early warning flood system, according to General Manager David Mauk.

In an interview, on Friday, August 29, Mauk said that the local grant was one of 17 approved by the Texas Water Development Board. "I believe the grants totaled \$3.5 million in all," he said. The

funds from the Disaster Contingency Fund will be used to finance flood early warning systems, flood response strategies and protection planning, Mauk added. "This innovative project will protect not only the lives of local residents and visitors, but also communities downstream through a flood warning tool set," he noted. "It will expand the existing early flood warning systems to include two additional stream gages upstream. This, in turn, will improve response strategies and flood protection planning through its advanced modeling and mapping capabilities."

The flood warning tool will be developed by the BCRAGD, in partnership with the United States Geological Survey (USGS). As reported earlier in the Courier, the project will take place from the community of Medina to upstream of Medina Lake – a span of 25 miles.

"USGS would like to use Bandera County as a pilot program for the entire State of Texas," Mauk said.

USGS will install two additional stage-only streamflow gauging stations to help assist with early flood warning. The gauge height will be measured and recorded every 15 minutes and transmitted hourly by satellite to the USGS National Water Information System database.

To assess the vulnerabilities associated with flooding in Bandera County, the project will include the development of a HEC-RAS (Hydrologic Engineering Center River Analysis System) hydraulic model. This model will simulate flow routing and potential inundation area for the Medina River from Medina and downstream to Medina Lake. Using collected data, potential flood inundation maps will be compiled to create a flood atlas for the hydraulically modeled area of the county. This flood atlas will be included on the USGS Flood Inundation Mapping Program website, which will be available to the public.

Additionally, the grant will fund development of a Decision Support System (DSS), a common operating decision-based system for emergency managers in Bandera County. Incorporated data includes information from after action reports. These reports, often developed from observed data by emergency managers, will help assess areas most sensitive to flood hazards.

The flood warning tool set will provide BCRAAGD with an ability to forecast and respond to floods in their area by having two additional gauges upstream for warning; flood inundation maps depicting areas of possible flooding, and a decision Support System to integrate incoming data streams.

Announcing the grants, Texas Water Development Board Chairman Bech Bruun said, "The severity of flood damage and resulting loss of life across Texas in recent years has demonstrated that communities need more financial resources to help them prepare for and respond to floods." Bandera is no exception.

Twice this summer, prolonged, heavy rains required the evacuation of RV parks located along the Medina River within the City of Bandera. The most serious incident occurred over Memorial Day weekend. At that time, due to delayed evacuation orders, floodwaters destroyed mobile homes and vehicles; however, no lives were lost.

An administrator from USGS noted, "Risk of future flooding events in the Bandera County area highlights a critical need for a flood warning system. As part of this system, a tool set is needed to enhance the communication of flood risk and provide emergency managers additional information necessary to mitigate more effectively the impacts of flooding."

The project will take three years before being fully implemented and requires matching funds within that three-year period.

"Parts of the Midwest have successfully implemented this flood warning tool, and Bandera County will be an example to the rest of Texas," Mauk said. "Moving forward, we are looking to partner with the City of Bandera and Bandera County as collaborators."

City Administrator Michael "Mike" Garr said, "The city will benefit from the proposed project and we intend to contribute to the cause." He anticipated that the municipality would work in conjunction with the Economic Development Corporation to allocate necessary funds. "We'll likely earmark a certain amount of funds for the three-year period," Garr said.

Lauding Mauk for doing the "legwork" necessary to secure the impressive grant, Garr added, "Dave is certainly an excellent representative for the river authority and I commend him for this achievement."

A call to Bandera County Emergency Management Coordinator Carey Reed regarding the grant was not returned.

Among others, the following entities and municipalities also received TWDB grants for early warning systems and flood protection planning and response:

- City of Austin, \$96,633
- City of Beaumont, \$287,000
- City of Buda, \$292,890
- City of Fort Worth, \$247,378
- City of Leon Valley, \$11,309.86
- Guadalupe Blanco River Authority-Caldwell County, \$70,688
- Guadalupe Blanco River Authority-Hays County, \$37,406

2016-09-08

Rainwater harvesting conserves groundwater

Special to the Courier

Bandera County residents rely heavily on groundwater from aquifers for the survival of their household and ranching operations. However, the aquifers under Bandera County that supply the groundwater recharge very slowly after rains. Ultimately, this means that the resource is being used faster than the aquifer is recharging naturally.

The situation then becomes one of non-sustainability for a resource that's already non-renewable. During droughts, more groundwater is pumped from wells for livestock, gardens and wildlife, further stressing the aquifers.

Fortunately, options are available that allow access to water without pumping it from the aquifers. One successful method is rainwater harvesting.

The process is simple. Rainwater falls onto a roof, runs off into its gutters and eventually down into tanks or cisterns, allowing the captured water to be utilized rather than groundwater. This process is especially beneficial during periods of little or no rain.

Rainfall events are obviously a limiting factor. Increasing roof area to capture the rainfall and increasing storage capacity for the captured rainfall can lessen the limitation. This way the system can capture and store a larger amount of the rain, resulting in the "most bang for the buck."

The Bandera County River Authority and Groundwater District, 440 FM 3240, has rainwater harvesting manuals and resource-heavy literature about the process available to the general public. For electronic copies of these resources, email dmauk@bcragd.org or mayers@bcragd.org. BCragd telephone is 830-796-7260.

"Every Bandera County landowner is urged to explore the possibility of utilizing rainwater harvesting to augment water usage and conserve groundwater resources," said Jeff Jilson, BCragd operations manager.

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PERFORMANCE AND MANAGEMENT GOALS

THE NECESSITY FOR SETTING AND ACHIEVING GOALS

THE 75TH TEXAS LEGISLATURE IN 1997 ENACTED SENATE BILL 1 (“SB1”) TO ESTABLISH A COMPREHENSIVE STATEWIDE WATER PLANNING PROCESS. IN PARTICULAR, SB1 CONTAINED PROVISIONS THAT REQUIRED GROUNDWATER CONSERVATION DISTRICTS TO PREPARE MANAGEMENT PLANS TO IDENTIFY THE WATER SUPPLY RESOURCES AND WATER DEMANDS THAT WILL SHAPE THE DECISIONS OF EACH DISTRICT. SB1 DESIGNED THE MANAGEMENT PLANS TO INCLUDE MANAGEMENT GOALS FOR EACH DISTRICT TO MANAGE AND CONSERVE THE GROUNDWATER RESOURCES WITHIN THEIR BOUNDARIES.

EACH YEAR THE BANDERA COUNTY RIVER AUTHORITY AND GROUNDWATER DISTRICT’S STAFF PREPARES AN ANNUAL REPORT FOR THE BOARD OF DIRECTORS. THIS REPORT OUTLINES DISTRICT ACTIVITIES AND DOCUMENTS PROGRESS WITH FULFILLING THESE MANAGEMENT GOALS. COPIES OF THIS REPORT ARE AVAILABLE FOR THE PUBLIC AT THE DISTRICT’S OFFICE.

Management Goal 1

1.0.0 MANAGE GROUNDWATER IN ORDER TO PROVIDE THE MOST EFFICIENT USE OF GROUNDWATER RESOURCES.

1.1.1 Management Objective

Implement a program to develop data on the aquifers for better modeling of the aquifers.

1.1.2 Performance Standard

a. Collect pump test data from subdivision test wells after water availability studies are conducted.

- zero of pump tests were conducted for subdivision test wells in fiscal year 2016.

b. Collect water level data from a minimum of 10 wells on a semi-annual basis.

- See CD LABELED “FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2”

1.2.1 Management Objective

Maintain a program of issuance of well permits for non-exempt wells and registrations for exempt wells.

1.2.2 Performance Standard

Maintain an ongoing program of issuance of well permits each year. Provide the number of permits issued each year and the number of registrations issued each year in an annual report to the Board of Directors.

- 2 Permits Issued
- 87 Registrations Issued

Management Goal 2

2.0.0 CONTROL AND PREVENT THE WASTE OF GROUNDWATER.

2.1.1 Management Objective

Provide literature to the public on the efficient use of water and water saving devices in the home.

2.1.2 Performance Standard

a. Provide handouts with well permits and registrations to educate the public on water saving devices. The District will report the number of handouts with well permits and registrations in an annual report to the Board of Directors.

Handouts (electronic or hard copy) are provided with all well permits and registrations to educate the public on water saving devices and overall conservation practices. During FY 2016:

•2 permits were issued and 87 Wells were registered, totaling at least 89 handouts being provided, including but not limited to the following literature handouts:

- TWDB Conserving Water Indoors
- TWDB Water Conserving Tips
- TWDB Conserving Water Outdoors
- TWDB Water Conserving for Businesses

Additionally, the following number of handouts (electronic or hard copy) were provided to the general community on water saving during FY 2016:

- TWDB Conserving Water Indoors-209 copies
- TWDB The Texas Manual on Rainwater Harvesting- 102 copies
- TWDB Water Conserving Tips- 157 copies
- TWDB Conserving Water Outdoors-219 copies
- TWDB Water Conserving for Businesses- 105 copies
- TWDB Water for Texas- 51 copies
- Water Wheels- 53 copies
- TAMU Agrilife Extension Well Owner's Guide to Water Supply-24 copies
- TAMU Agrilife Extension Plugging Abandoned Water Wells-60 copies
- Water Saving Spray Nozzles- 3 copies
- BCRAGD engraved Reusable Bags- 81 copies
- Agriculture Producer drought- 113 copies

Management Goal 2 continued

b. Coordinate a minimum of one public presentation per year. Provide the number of shows, demonstrations, events, or educational talks at which literature or information is provided to the public, in an annual report to the Board of Directors.

Water conservation literature is provided at all District public meetings.

(12 meetings): 10/8/2015, 11/5/2015, 12/23/2015, 1/9/2016, 2/26/2016, 4/14/2016, 6/9/2016, 7/14/2016, 7/14/2016, 8/11/2016, 9/8/2016 (3).

- On October 28, 2015 BCRA GD delivered water conservation literature to the local Arthur Nagel Clinic.
- On November 6, 2015 L. Sparks and M. Ayers gave an aquaponics/water conservation presentation to Bandera High School students.
- On November 21, 2015 D. Meier and M. Ayers presented and facilitated a lab over water quality and water conservation at Schreiner University's annual Expanding Your Horizons event, at which conservation literature was given to each student.
- On December 23, 2015 BCRA GD staff hosted a Water Conservation Christmas Event, at which a watershed protection presentation was given and water conservation and rainwater harvesting literature were provided.
- On February 3, 2016 BCRA GD hosted & participated in the Medina River Protection Fund's meeting where conservation and rainwater harvesting literature was provided.
- On February 24th, 29th, and March 1, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Utopia ISD and Bandera ISD respectively.
- On March 11, 2016 M. Ayers gave a water conservation and watershed protection presentation during Bandera High School's Career Day.

Management Goal 2 continued

- On April 9, 2016 D. Mauk and M. Ayers facilitated a water conservation workshop, titled, Growing a Garden with Less Water, alongside TAMU AgriLife and Ranchers and Landowners Association, at which water conservation and rainwater harvesting literature was provided.
- On April 15, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Medina ISD.
- On June 21, 2016 BCRA GD presented over water use and conservation to a Girl Scout camp at Medina Lake.
- On August 9, 2016 BCRA GD manned a booth at Bandera ISD's annual Back to School Bash during which conservation literature was provided.
- On August 18, 2016 BCRA GD facilitated a water conservation and land stewardship workshop, titled, Local Water Resource Stewardship, alongside TAMU AgriLife, at which water conservation and rainwater harvesting literature was provided.
- On September 14, 2016 BCRA GD presented over watershed protection at the Texas County Agricultural Agents Association's Fall Retreat, during which water conservation literature was provided.
- On September 15, 2016 BCRA GD presented over conservation and watershed protection at the Madrona Garden Club monthly meeting, at which water conservation literature was provided.
- On September 20, 2016 BCRA GD hosted a Board of Realtors Meeting at the BCRA GD Office, where water conservation literature and rainwater harvesting information was provided.
- On September 21, 2016 BCRA GD facilitated a Science in Action educational build of aquifer models, at which water conservation literature was provided.

2.2.1 Management Objective

Promote public awareness about preventing the waste of water resources.

2.2.2 Performance Standard

Record the number of speaking appearances and/or shows, demonstrations or events at which literature or information is provided to the public on preventing the waste of water resources. The District will report the number of aforementioned events in the annual report to the Board of Directors.

-See 2.1.2 B

Management Goal 3

3.0.0 CONTROL AND PREVENT SUBSIDENCE.

The control and prevention of subsidence is not a concern of this District as the formations are carbonates and do not contain the water saturated clays which can cause subsidence if dewatered; therefore, this management goal is not applicable to the District

Management Goal 4

ADDRESS CONJUNCTIVE SURFACE WATER MANAGEMENT ISSUES.

4.1.1 Management Objective

Make at least one annual evaluation of the groundwater resources and surface water quality in Bandera County and include the results of the evaluation in the annual report to the Board of Directors.

4.1.2 Performance Standard

a. Record the number of reports and evaluations provided to the Board of Directors on the groundwater resources and the surface water quality in the annual report.

The General Manager gives a District Report of groundwater resources and the surface water quality to the Board at every Quarterly Meeting. (4 meetings total- 10/8/2015, 01/09/2016, 04/14/2016, 07/14/2016.)

- For quarterly reports see CD LABELED “FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2”
- An annual evaluation of the groundwater resources and surface water quality in Bandera County is on the following 12 pages. Additional groundwater resource documents can be found in Section 13.1.2

b. Maintain at the District Office an annual report of District activities available to the public.

The annual report, annual financial audit, and the budget are readily available at the District for the public and displayed on our website, www.bcragd.org.

FY 2016 Annual Evaluation of the Surface Water Quality in Bandera County

Medina Lake Evaluation

Data below is per Texas Water Development Board's Water Data for Texas website:

FY 2016 Quarter	Date	Capacity (% full)
1st	October 1, 2015 December 30, 2015	66.3 % 63.7%
2nd	January 5, 2016 March 31, 2016	63.9% 62.4%
3rd	April 7, 2016 June 7, 2016	62.2% 100.0%
4th	July 7, 2016 September 7, 2016	100.0% 98.4%

The Texas Clean Rivers Program

BCRAGD partnered with San Antonio River Authority (SARA) to participate in the Clean Rivers Program in the San Antonio River Basin in 2012. BCRAGD staff are responsible for sampling 6 sites, which are in Bandera County and summarized in a table on the following page. FY 2016 CRP sampling events took place on October 14-15, 2015, December 29-30, 2015, March 1-2, 2016, and July 26-27, 2016.

At the end of FY 2016, BCRAGD expanded its partnership with SARA by adding five CRP sites on Medina Lake along with two CRP sites on Diversion Lake. The FY 2016 sampling events for the Medina Lake sites took place on September 28-29, 2016.

BCRAGD partnered with Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff are responsible for 2 sites shown in a table on the following page. The first FY 2016 sampling events for the Nueces River Basin took place on August 3, 2016.

•CRP water quality data can be viewed at <http://www80.tceq.texas.gov/SwqmisWeb/public/crpm.html>

Management Goal 4 continued

BCRAGD Clean Rivers Program Sites

Medina River Sites

Site Name	Station ID	Waterbody ID
Old English Crossing	12830	1905_01
Medina River at SH 173	13638	1905_01
Medina River at FM 470	12832	1905_01
Medina River at Moffett Park	21125	1905_01
North Prong Medina River (AKA Wallace Ck)	18447	1905_01
North Prong Medina River at FM 2107	21126	1905_01

Medina Lake Sites

Site Name	Station ID	Waterbody ID
Medina Lake Mid Lake near Headwater	12829	1904_02
Medina Lake between Cypress & Spettel Coves	12828	1904_03
Medina Lake at Mormon Bluff	12827	1904_03
Medina Lake near Red Cove	12826	1904_01
Medina Lake at Medina Lake Dam West of San Antonio	12825	1904_01
Medina River Downstream Medina Reservoir in Mico TX at Low Water Crossing	14205	1909_01
Medina Diversion Lake near West Bank 40m Upstream of Dam and approx 1mi Upstream of Medina River Crossing at Medina CR 2615	18407	1909_01

Sabinal River Sites

Site Name	Station ID	Waterbody ID
Sabinal River at FM 187 (5.7mi S of Vanderpool)	13017	2111
Seco Creek at SH 470 (10mi W of Tarpley)	14939	2115

Management Goal 4 continued

Surface Water Quality Monitoring

This surface water sampling program was initiated in order to monitor water quality throughout Bandera County. It has been modified to better serve the community by increasing the number of sites for a more representative data collection, reporting E. coli counts via local newspapers to the citizens of Bandera County for safety. BCRAGD's In-house Surface Water Sampling program allows District staff to detect bacteria spikes in the Medina Sabinal River and follow up with an immediate investigation.

MR-2.05	Medina R. Bandera City Park @1 st St.	MR-3.05	Medina R. @ Ranger Crossing HWY 16
MR-2.04	Medina R Bandera City Park Midpoint	MR-3.01	Medina R. @ RR 377
MR-2.03	Medina R City Park—Hwy 173	MR-2.02	Below Sewage Treatment Plant Effluent
MR-1.01	Medina R. @ English Crossing	MR-2.025	Above Sewage Treatment Plant Effluent
LM-4.01	Sabinal R. @ Lost Maples 1 st Bridge	WVC-2.01	Hill Country State Natural Area @ FM 1077
MP-3.01	Medina R. @ Moffett Park	ML-1.04	Medina Lake @ County Park NE of ramp
MRN- 3.01	Medina R.-FM 2107 @ Rocky	ML-1.05	Medina Lake @ County Park SE of ramp
MR-3.04	Medina R. @ Tarpley Crossing	CC- 4.01	Sabinal R @ Cornelius Crossing
WC-3.01	North Prong. @ Wallace Creek	WC-4.01	Sabinal R @ Williams Creek Crossing
MRN-3.03	Medina R @ Brewington Crossing FM 2107	SC-4.01	Seco Creek @ RR 470 Crossing
MRW-3/01	W. Prong Medina R @ Coal kiln Rd FM 337		

•From October 2015 to September 2016 there were zero instances with E. coli counts over the TCEQ standard of 399 cfu (colony forming units) per 100 mL of sample water.

•For in-house water quality data results see CD LABELED “FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2”

•CRP water quality data can be viewed at <http://www80.tceq.texas.gov/SwqmisWeb/public/crpm.html>

Bandera County River Authority and Groundwater District


Bacteria Counts in Bandera's Surface Water (March 16th and 17th 2016)

Although the levels of *E. coli* meet TCEQ standards, this does not mean there is no risk involved. ALWAYS SWIM AT YOUR OWN RISK. There is always a possibility of infection. If you have any questions or concerns, you can contact our office at: 830-796-7260.

Field technicians from Bandera County River Authority and Groundwater District took samples from the sites listed below on **March 16th and 17th 2016** to assess the level of *E. coli*. As some may know, *E. coli* is a bacteria known to possibly be pathogenic and can be dangerous to human beings. The Texas Commission on Environmental Quality (TCEQ) has set the standard for *E. coli* levels at 399 colony forming units (cfu) per 100mL of water (30 TAC §307.7). If the count is over that, **no primary contact recreation*** should take place in that area of the river. Bandera County has some of the most pristine water in the state, however, it is important to know there is always a possibility of *E. coli* infection when swimming and participating in any water recreations in rivers, streams, and lakes even if sample results are low. Never drink or ingest river water without proper disinfection, and always swim at your own risk.

The results listed below were analyzed at the BCRAGD lab

*Primary Contact Recreation—any activity that includes total submersion of the head under water.



<p><u>Medina Lake- County Park (SE of Ramp)</u> E. coli—<10 cfu</p> <p><u>Medina Lake- County Park (NE of Ramp)</u> E. coli—10 cfu</p> <p><u>Medina Lake-Poo's Place</u> E. coli—30 cfu</p> <p><u>Medina River- English Crossing</u> E. coli— 150 cfu</p> <p><u>Medina River- Bandera City Park (Hwy 173 Bridge)</u> E. coli —70 cfu</p> <p><u>Medina River- Bandera City Park (Midpoint)</u> E. coli —<10 cfu</p> <p><u>Medina River- Bandera City Park (1st Street Bridge)</u> E. coli —10 cfu</p>	<p><u>Medina River-Tarpley Crossing</u> E. coli— 110 cfu</p> <p><u>Medina River- Ranger Crossing</u> E. coli—70 cfu</p> <p><u>North Prong Medina River-Wallace Creek</u> E. coli— 20 cfu</p> <p><u>North Prong Medina River- Rocky Creek</u> E. coli— 50 cfu</p> <p><u>North Prong Medina River- Brewington Crossing</u> E. coli— 20 cfu</p> <p><u>Medina River- FM 337</u> E. coli— 80 cfu</p> <p><u>West Prong Medina River-Coalkiln Road</u> E. coli— 80 cfu</p> <p><u>Medina River-Moffett Park</u> E. coli— 80 cfu</p>	<p><u>Medina River-Above Sewage Treatment Plant Effluent</u> E. coli— 110 cfu</p> <p><u>Medina River-Below Sewage Treatment Plant Effluent</u> E. coli— 140 cfu</p> <p><u>Sabinal River-Cornelius Road</u> E. coli— 110 cfu</p> <p><u>Sabinal River- Williams Creek</u> E. coli— 50 cfu</p> <p><u>Sabinal River-Seco Creek</u> E. coli— 100 cfu</p> <p><u>Lost Maples (Sabinal)-1st Bridge</u> E. coli— 20 cfu</p> <p><u>Hill Country State Nat. Area (Sabinal)</u> E. coli— 30 cfu</p>
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**** This number is over the TCEQ standard**

Although not a certified laboratory, BCRAGD is able to test water samples, providing a valuable service to the citizens of Bandera County. Results are for informational purposes only.

Management Goal 4 continued

Nonpoint Source Pollution (NPS) Initiative on Medina Lake

Medina Lake is utilized as a source of drinking water for San Antonio and riparian residents. In the last few years, there has been an increase in population in the surrounding areas, and water recreation has grown in popularity. In July of 2016 BCRAGD began the Nonpoint Source Initiative as a survey of Medina Lake's waters to identify any potential nonpoint source pollution, and/or potential health risks to the public.

Nine Medina Lake coves will be sampled for the presence of fecal coliforms and E. coli in conjunction with other water quality monitoring that is currently taking place on Medina Lake, including the In-House water quality study and the Clean Rivers Program. Results will be published in a report at the conclusion of the project.

ML-1.06	Medina Lake-Pop's Place	ML-2.04	Medina Lake- Hamilton Cove
ML-2.01	Medina Lake- River Mouth	ML-2.05	Medina Lake- Elm Cove
ML-2.02	Medina Lake- Cypress Cove	ML-2.06	Medina Lake-Haybes Cove
ML-2.03	Medina Lake- Church Cove	ML-2.07	Medina Lake- Red Cove
ML-1.04	Medina Lake @ Co. Park- NE of ramp		

Below is a combined summary of our In-house sampling & NPS sampling event dates:

1st Quarter: Oct 2015-Dec 2015

Oct 14-15, 2015-- CRP; 6 Medina R.
 Nov 23, 2015 (4 Medina R., 2 Medina Lake sites)
 Nov 24, 2015 (3 Sabinal R., 6 Medina R. sites)
 Dec 29-30, 2015-- CRP; 6 sites Medina R.

2nd Quarter: Jan 2016 to March 2016

January 12, 2016 (2 Sabinal R., 12 Medina R., 3 Medina Lake sites)
 March 1-2, 2016-- CRP; 6 sites Medina R.
 March 16, 2016 (1 Sabinal R., 4 Medina R. sites)
 March 17, 2016 (4 Sabinal R., 10 Medina River sites)

3rd Quarter: April 2016 to June 2016

June 8, 2016 (4 Sabinal R. sites, 8 Medina R. sites)

4th Quarter: July 2016 to September 2016

July 13, 2016 (4 Medina R. sites, 2 Medina Lake)
 July 14, 2016 (6 Medina Lake sites)
 July 21, 2016 (1 M. Lake, 14 Medina R., 5 Sabinal R.)
 July 26-27, 2016-- CRP; 6 Medina R.
 July 28, 2016 (9 Medina Lake sites, 4 Medina R. sites)
 August 4, 2016 (1 M. Lake, 14 Medina R., 5 Sabinal R.)
 August 3, 2016-- CRP; 2 Sabinal River sites
 August 18, 2016 (1 Medina Lake site, 11 Medina R. sites, 5 Sabinal R. sites)
 August 25, 2016 (4 Medina R. sites)
 September 1, 2016 (1 M. Lake, 13 Medina R., 5 Sabinal)
 September 7, 2016 (9 Medina Lake sites)
 September 28-29, 2016-- CRP; 5 Medina Lake sites

FY 2016 Annual Evaluation of the Groundwater Resources in Bandera County

In Bandera County, the permitted (non-exempt) production in the Trinity Group for 2015 was 1017.71 acre-feet and for 2016 was 1051.32 acre-feet. The District does not have any permitted wells in the Edwards-Trinity Plateau. TWDB supplied exempt-use pumping estimates total 2061 acre-feet (1870 Trinity, 10 other, 181 Edwards-Trinity Plateau) for both 2015 and 2016. That gives us a total production in the Trinity of 2897.71 acre-feet of groundwater production for 2015 and 2931.32 acre-feet of groundwater production for 2016.

TWDB produced a Modeled Available Groundwater(MAG) for the Desired Future Condition (DFC) adopted by GMA-9. The MAG produced by TWDB indicated 7,284 acre-feet of available groundwater production for the Trinity Group and 2,009 acre-feet for the Edwards Group of the Edwards-Trinity(Plateau) in Bandera County.

Taking into account the production amounts and exempt usage estimates the District still has about 4350 acre-feet that can be produced out of the Trinity Group and about 1800 that can be produced out of the Edwards-Trinity Plateau. So, the District still has permittable water available under our current MAG.

The LBG Guyton Technical Memorandum Evaluation of 2016 Water levels in Bandera County, indicates a county-wide water level decline of 21.6 feet between 2008 and 2016 in the Lower Trinity in Bandera County, or an average rate of about 2.5 feet per year. The water level decline between 2015 and 2016 was 3.9 feet in the Lower Trinity. Between 2008 and 2016, the Middle Trinity water level in Bandera County rebounded by about 5.0 feet and by almost 31 feet between 2015 and 2016. Groundwater elevations in the Middle Trinity in Bandera County have increased significantly.

For DFC purposes, the Middle and Lower Trinity are treated as one unit, combined, and levels averaged. Because the Middle and Lower Trinity levels are averaged, the Trinity aquifer has declined -3.8 feet since 2008. The DFC set by GMA 9 calls for a drawdown of up to 30 feet in the Trinity aquifer. So, the drawdown of 3.8 feet in the Trinity is consistent with maintaining or achieving our DFC.

According to District staff, the Edwards-Trinity Plateau aquifer from October 2010 until December 2016 has increased 7 feet. The elevation has changed from 2031.7 in October 2010 to 2038.7 in December 2016. The DFC for the Edwards-Trinity Plateau in Bandera County is set at 0 foot drawdown. So, the increase in groundwater levels in the Edwards-Trinity Group in Bandera County is consistent with maintaining or achieving our DFC.



LBG-GUYTON ASSOCIATES

TECHNICAL MEMORANDUM

TO: Dave Mauk, Michael Redman, Bandera County RAGD
FROM: James Beach, P.G., Kristie Laughlin, P.G., Hunter King
SUBJECT: Evaluation of 2016 Water Levels in Bandera County
DATE: February 28, 2017

INTRODUCTION

LBG-Guyton Associates evaluated water level measurements to compare 2016 water levels in the Trinity Aquifer to the 50-year desired future condition (DFC) of a maximum of 30 feet of drawdown.

Water level data was assimilated during Fiscal Year (FY) 2016, which began on October 1, 2015 for the Lower Trinity and Middle Trinity wells in Bandera County. For the purposes of this memo, the water level measurements collected in FY 2016 will be referred to as the 2016 data. 2016 water level data was compared to data from 2008 and 2015.

During 2016, 40 Trinity wells in Bandera County were monitored for DFC purposes. Thirty-three (33) of these wells are completed in the Middle Trinity Aquifer and seven are completed in the Lower Trinity formations. Figure 1 shows the well locations where water level measurements were collected during 2008 and 2016, and which of the wells are screened in the Lower Trinity formations.

METHODOLOGY

There were 29 wells in Bandera County with water levels measured in 2008. Twenty-two of these wells are screened in the Middle Trinity and seven wells were screened in the Lower Trinity. The following steps were taken to estimate water level changes across the county.

1. Wells were grouped into Middle Trinity and Lower Trinity.
2. For wells with more than one water level measurements in a year, depth to water (DTW) measurements were averaged for the year.
3. Change in water level was calculated for each well for each period (2008-2016) and (2015-2016) by subtracting the more recent water level data from the previous data. Therefore, negative numbers indicate a decrease in water level in the aquifer and positive numbers indicate a water level increase in the aquifer during the period.

Table 1 summarizes the available well locations, water level measurements, and calculated water level changes in the Lower Trinity aquifer between 2008 and 2016 in Bandera County.



Table 2 shows the available well locations, water level measurements, and calculated water level changes in the Middle Trinity aquifer between 2008 and 2016 in Bandera County.

Table 3 shows the available well locations, water level measurements, and calculated water level changes in the Lower Trinity aquifer between 2015 and 2016 in Bandera County. Table 4 shows the available well locations, water level measurements, and calculated water level changes in the Middle Trinity aquifer between 2015 and 2016 in Bandera County. Table 4 indicates that all but two Middle Trinity wells had an increase in water level elevation between 2015 and 2016.

The DFC in Bandera County was calculated as an average water level decline over the entire county based on the water level decline at each gridblock in the TWDB Trinity Hill Country Groundwater Availability Model (GAM). Each gridblock (or model cell) covers one square mile and the thus the nodes of the model are separated by 1 mile in the north-south direction and the east-west direction. To develop a comparable estimate from water level measurements, the water level changes from individual wells in Tables 1 through 4 were used to interpolate data onto a regularly spaced grid using an inverse distance weighted method. Then the average water level change for the entire county was calculated from the grid. This approach helps avoid spatial bias that can occur in areas containing a higher concentration of wells.

RESULTS OF ASSESSMENT

Table 5 summarizes the water level change in the Middle and Lower Trinity aquifers in Bandera County based on the data in Tables 1 through 4 and the methodology described above. The bottom row in Table 5 shows one estimate of the county-wide water level change in the Middle and Lower Trinity aquifers. These estimates are an average of the values for the Lower and Middle Trinity from the rows above.

Table 5 indicates a county-wide water level decline of 21.6 feet between 2008 and 2016 in the Lower Trinity in Bandera County, or an average rate of about 2.5 feet per year. The water level decline between 2015 and 2016 was 3.9 feet in the Lower Trinity.

Between 2008 and 2016, the Middle Trinity water level in Bandera County rebounded by about 5.0 feet and by almost 31 feet between 2015 and 2016. Groundwater elevations in the Middle Trinity in Bandera County have increased significantly.

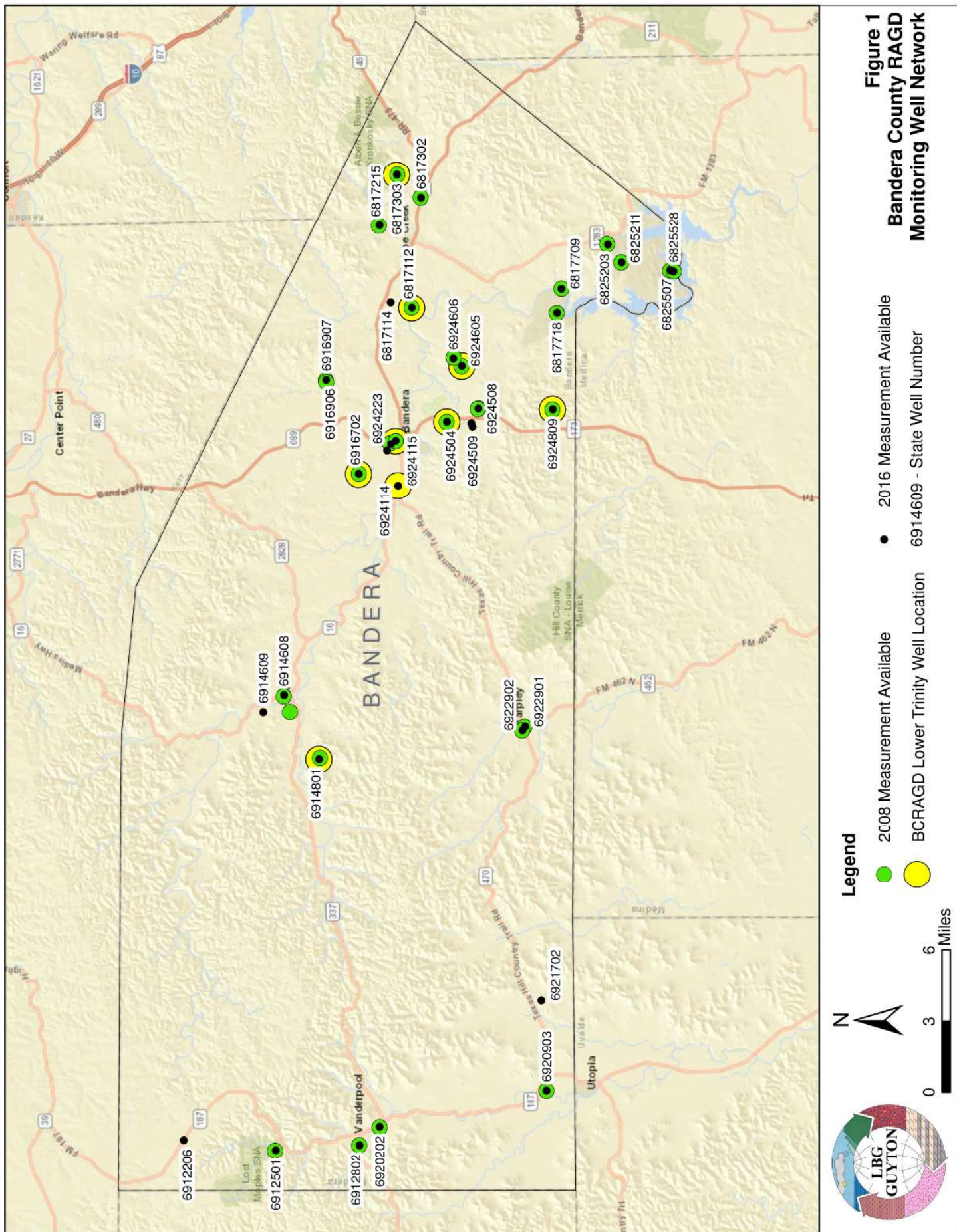


Table 1
Bandera RAGCD Lower Trinity Water Level Calculations Between 2008 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2008 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2008-2016 Water Level Difference (feet) ¹
Cielo Rio Ranch, LTD	6817112	29.724106	-98.980872	1,233	1,233.8	760	-233.7	-296.5	-62.8
Latigo Ranch	6817303	29.732594	-98.887050	1,535	1,537.2	1,080	-403.8	-421.0	-17.2
TxDOT	6916702	29.757644	-99.097656	1,337	1,338.3	798	-345.9	-369.6	-23.8
Bandera Co.	6924225	29.734675	-99.074664	1,270	1,272.4	800	-434.4	-438.4	-4.0
Alkek Elementary School	6924504	29.703239	-99.061333	1,319	1,319.8	930	-375.6	-395.4	-19.8
Bridlegate (Southernland Comm.)	6924605	29.693781	-99.022122	1,308	1,309.1	940	-342.1	-362.7	-20.6
Flying A	6924809	29.638231	-99.053247	1,391	1,392.4		-272.4	-267.9	4.5

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 2
Bandera RAGCD Middle Trinity Water Level Calculations Between 2008 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2008 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2008-2016 Water Level Difference (feet) ¹
Bowie (Edwards)	6817215	29.743569	-98.922564	1,365	1,366.6	485	-204.1	-210.0	-5.8
Evans Water System	6817302	29.717889	-98.903478	1,362	1,363.9	500	-204.0	-201.9	2.1
Lakeshore VFD	6817709	29.632264	-98.968639	1,089	1,090.0	140	-41.7	-41.1	0.7
Tecon	6817718	29.635100	-98.985603	1,099	1,100.7	540	-83.2	-82.4	0.7
Basinger	6825203	29.603467	-98.937806	1,204	1,205.1	460	-295.3	-286.2	9.1
Lakehills Co. Yard	6825211	29.595275	-98.950322	1,154	1,155.8	403	-295.3	-93.7	201.5
Bandera Co. Park	6825507	29.565314	-98.956278	1,099	1,100.3	575	-87.7	-86.7	1.0
Sidney Shores	6825528	29.563250	-98.956861	1,147	1,148.1	585	-126.1	-108.8	17.4
Lost Maples SNA	6912501	29.811203	-99.574389	1,797	1,797.8	770	-351.3	-385.4	-34.1
Bug Scuffle	6912802	29.759706	-99.571089	1,722	1,722.8	650	-299.5	-273.3	26.2
Orchard Park	6914608	29.804597	-99.253350	1,452	1,454.7	311	-36.6	-35.3	1.3
Medina Springs	6914609	29.817344	-99.265253	1,515	1,518.1	465	-122.0	-134.7	-12.7
Chancy	6914801	29.783236	-99.298506	1,558	1,558.8	500	-183.5	-197.3	-13.8
Mason Creek Shallow	6916906	29.777181	-99.031000	1,380	1,382.6		-168.6	-170.4	-1.8
Mason Creek Deep	6916907	29.777181	-99.031000	1,380	1,382.6	480	-168.6	-185.3	-16.7
Vanderpool VFD	6920202	29.747169	-99.558383	1,585	1,586.3	580	-156.5	-49.3	107.2
Williams	6920903	29.644689	-99.533106	1,407	1,408.7	420	-25.9	-137.5	-111.6
Erfurt	6922901	29.656719	-99.276719	1,300	1,301.0	330	-21.7	-17.3	4.5
Tarpley VFD	6922902	29.658356	-99.279414	1,322	1,323.3	460	-42.5	-54.5	-12.0
Boyle	6924223	29.737742	-99.076803	1,300	1,301.2	296	-128.1	-94.1	33.9
Jeffery (Shallow)	6924508	29.683889	-99.052222	1,318	1,319.6	135	-35.2	-28.9	6.3
Jeffery (yellow house)	6924509	29.687550	-99.064933	1,316	1,317.7	500	-177.2	-98.0	79.2
Bridlegate MT	6924606	29.698989	-99.016933	1,360	1,361.9	607	-234.7	-222.6	12.1

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 3
Bandera RAGCD Lower Trinity Water Level Calculations Between 2015 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2015 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2015-2016 Water Level Difference (feet) ¹
Alkek Elementary	6924504	29.703239	-99.061333	1,319	1,319.8	930	-395.6	-395.4	0.2
Bandera City	6924225	29.734675	-99.074664	1,270	1,272.4	800	-443.9	-438.4	5.5
Bandera Sports Complex LT	6924114	29.733458	-99.106233	1,264	1,264.9	870	-367.3	-367.9	-0.5
Bridlegate LT	6924605	29.693781	-99.022122	1,308	1,310.1	940	-374.2	-362.7	11.6
Cielo Rio Ranch, Ltd.	6817112	29.724106	-98.980872	1,233	1,233.8	760	-272.9	-296.5	-23.5
Flying A	6924809	29.638231	-99.053247	1,391	1,392.4		-255.4	-267.9	-12.6
Latigo Ranch	6817303	29.732594	-98.887050	1,535	1,537.2	1,080	-413.5	-421.0	-7.5
TxDot	6916702	29.757644	-99.097656	1,337	1,338.3	798	-370.2	-369.6	0.5

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 4
Bandera RAGCD Middle Trinity Water Level Calculations Between 2015 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2015 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2015-2016 Water Level Difference (feet) ¹
Bandera Co. Park	6825507	29.565314	-98.956278	1,099	1,100.3	575	-132.91	-86.65	46.26
Bandera Sports Complex MT	6924115	29.733458	-99.106233	1,264	1,266.3	500	-93.35	-67.86	25.49
Basinger	6825203	29.603467	-98.937806	1,204	1,205.1	460	-329.75	-286.16	43.59
BCRAGD CC	6924230	29.740194	-99.081481	1,254	1,255.2	490	-160.08	-133.70	26.38
BCRAGD LGR	6924229	29.740194	-99.081481	1,254	1,255.0	340	-156.51	-103.40	53.11
Boultinghouse	6921702	29.647544	-99.469864	1,580	1,580.9	628	-339.62	-322.20	17.42
Bowie	6817215	29.743569	-98.922564	1,365	1,366.6	485	-211.58	-209.95	1.63
Boyle	6924223	29.737742	-99.076803	1,300	1,301.2	296	-161.04	-94.14	66.90
Bridlegate MT	6924606	29.698989	-99.016933	1,360	1,361.9	607	-239.14	-222.61	16.53
Bug Scuffle	6912802	29.759706	-99.571089	1,722	1,722.8	650	-325.90	-273.32	52.58
Chancy	6914801	29.783236	-99.298506	1,558	1,558.8	500	-207.25	-197.30	9.95
Cielo Rio Ranch, Ltd	6817114	29.737222	-98.976944	1,331	1,332.1	440	-191.45	-179.49	11.96
Erfurt	6922901	29.656719	-99.276719	1,300	1,301.0	330	-24.12	-17.27	6.85
Evans Water System	6817302	29.717889	-98.903478	1,362	1,363.9	500	-203.33	-201.93	1.41
Jeffery (Barn)	6924512	29.688200	-99.062478	1,313	1,314.5	500	-177.90	-157.32	20.58
Jeffery (Shallow)	6924508	29.683889	-99.052222	1,318	1,319.6	135	-31.03	-28.91	2.12
Jeffery (yellow house)	6924509	29.687550	-99.064933	1,316	1,317.7	500	-166.02	-98.03	67.99
Lakehills Co. Yard	6825211	29.595275	-98.950322	1,154	1,155.8	403	-131.91	-93.71	38.19
Lakeshore VFD	6817709	29.632264	-98.968639	1,089	1,090.0	140	-65.69	-41.05	24.64
Lost Maples SNA	6912501	29.811203	-99.574389	1,797	1,797.8	770	-373.78	-385.40	-11.63
Mason Creek Deep	6916907	29.777181	-99.031000	1,380	1,382.6	480	-208.29	-185.34	22.95
Mason Creek Shallow	6916906	29.777181	-99.031000	1,380	1,382.6		-186.15	-170.44	15.71
Medina Springs	6914609	29.817344	-99.265253	1,515	1,518.1	465	-150.40	-134.71	15.69
Orchard Park	6914608	29.804597	-99.253350	1,452	1,454.7	311	-35.94	-35.29	0.65
Sidney Shores	6825528	29.563250	-98.956861	1,147	1,148.1	585	-152.37	-108.75	43.62
Tarpley VFD	6922902	29.658356	-99.279414	1,322	1,323.3	460	-24.12	-54.54	-30.42
Tecon	6817718	29.635100	-98.985603	1,099	1,100.7	540	-104.97	-82.44	22.53
Vanderpool VFD	6920202	29.747169	-99.558383	1,585	1,586.3	580	-338.31	-49.27	289.04
Williams	6920903	29.644689	-99.533106	1,407	1,408.7	420	-152.93	-137.52	15.41

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 5. Summary of Water Level Change for Middle and Lower Trinity Aquifers

Aquifer	Water Level Change (feet) 2008-2016	Water Level Change (feet) 2015-2016
Lower Trinity	-21.6	-3.9
Middle Trinity	5.0	30.9
Middle and Lower Trinity	-8.3	13.5



GEOSCIENTIST'S SEAL

This report documents the work of the following licensed professional geoscientists with LBG-Guyton Associates, a licensed professional geoscientist firm in the State of Texas (License No. 50111).



A handwritten signature in blue ink that reads "James Beach".

James Beach, P.G.
Senior Vice President

The seal appearing on this document was authorized
by James A. Beach, P.G. on February 28, 2017



A handwritten signature in black ink that reads "Kristie Laughlin".

Kristie L. Laughlin, P.G.
Senior Hydrogeologist

The seal appearing on this document was authorized
by Kristie L. Laughlin, P.G. on February 28, 2017.

Management Goal 4 continued

4.2.1 Management Objective

Each year the District will participate in the regional planning process by attending Region J Regional Planning Group meetings.

4.2.2 Performance Standard

The attendance of a district representative at any Region J Regional Planning Group will be noted in the annual report to the Board of Directors.

- On October 29, 2015 D. Mauk, D. Jeffery, M. Ayers, and L. Sparks attended a Region J Meeting in Kerrville, TX at UGRA's office.
- On April 14, 2016 D. Jeffery and M. Redman attended the Region J Meeting in Leakey, Texas.

Management Goal 5

5.0.0 ADDRESS NATURAL RESOURCE ISSUES.

5.1.1 Management Objective

The District is an active participant in the TCEQ Clean Rivers Program. This program is the gold standard in Texas for monitoring the water quality in the State. The District also tests groundwater from newly drilled wells and existing wells. The District will investigate, or refer to the proper agency, any citizen's or District initiated complaint related to surface water, groundwater, or any natural resource within the District. These investigations are a valuable tool to help the District protect the natural resources in the County.

5.1.2 Performance Standard

The General Manager will report the number of nuisance complaints, Notice of Violations issued, natural resources investigations, surface water tests, and groundwater tests to the Board of Directors in an annual report.

- Nuisance Complaints: 7 total
(7 environmental/natural resource investigations N1526, N1527, N1528, N1529, N1530, 160701c, 160801c ; 0 water well)
- Notice of Violations: 0 total
- Total Surface Water Test samples taken (including CRP): 203; see 4.1.2B
- Total number of Groundwater Tests: 460
- Both (Bacteria & Mineral)-142
- Bacteria Only-156
- Mineral Only-20

Management Goal 6

6.0.0 ADDRESS DROUGHT CONDITIONS.

6.1.1 Management Objective

Record the Drought Severity Index once at the first of each month and when drought conditions exist, implement the Drought Management Plan.

6.1.2 Performance Standard

In conjunction with the drought index, the General Manager may utilize flow rates from the Sabinal and Medina Rivers to determine appropriate drought stages. The General Manager shall announce and record the Drought index at the first of each month and implement the appropriate stage of the Drought Management Plan when necessary.

The appropriate drought stage is implemented when warranted by the Drought Management Plan. The Drought Stage is posted weekly on the District's website, bulletin board, and on the sign at the road in front of the District office. The appropriate drought stage is continuously posted at the Bandera County Courthouse. The drought stage is sent to the local newspapers weekly.

6.2.1 Management Objective

Evaluate groundwater availability each year by monitoring water levels of the aquifer from at least 6 monitor wells with continuous recorders within Bandera County.

6.2.2 Performance Standard

Record number of wells recording daily water levels and number of wells analyzed each year in the annual report to the Board of Directors.

- 15 electronically monitored wells with daily water levels recorded
- 27 non-electronically monitored wells measured without daily water levels recorded

Management Goal 7

7.0.0 Address conservation.

7.1.1 Management Objective

Promote public awareness of the need for water conservation.

7.1.2 Performance Standard

A minimum of one public water conservation show, demonstration, event, or educational talk will be held each year. The number of events, shows, or talks should be reported in the annual report to the Board of Directors.

- On November 6 L. Sparks and M. Ayers gave an aquaponics/water conservation presentation to Bandera High School students.
- On November 21, 2015 D. Meier and M. Ayers presented and facilitated a lab over water quality and water conservation at Schreiner University's annual Expanding Your Horizons event, at which conservation literature was given to each student.
- On December 23, 2015 D. Mauk, M. Redman, J. Jilson, M. Redman, M. Ayers, D. Meier, and L. Sparks, hosted a BCRAGD Water Conservation Christmas Event, at which a watershed protection presentation was given and water conservation and rainwater harvesting literature were provided.
- On February 24, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Utopia ISD.
- On February 29th and March 1st 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Bandera ISD.
- On April 9, 2016 D. Mauk and M. Ayers facilitated a water conservation workshop, titled, Growing a Garden with Less Water, alongside TAMU AgriLife and Ranchers and Landowners Association, at which water conservation and rainwater harvesting literature was provided.
- On April 15, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Medina ISD.
- On June 21, 2016 BCRAGD presented over water use and conservation to a Girl Scout camp at Medina Lake.
- On August 18, 2016 BCRAGD facilitated a water conservation and land stewardship workshop, titled, Local Water Resource Stewardship, alongside TAMU AgriLife, at which water conservation and rainwater harvesting literature was provided.
- On September 15, 2016 BCRAGD presented over conservation and watershed protection at the Madrona Garden Club monthly meeting, at which water conservation literature was provided.
- On September 21, 2016 BCRAGD facilitated a Science in Action educational build of aquifer models, at which water conservation literature was provided.

Management Goal 7 continued

7.2.1 Management Objective

The District will contract with Nueces River Authority (NRA) or similar organizations to provide information on efficient use of groundwater to students in Bandera County.

7.2.2 Performance Standard

The General Manager will report the instances that educational conservation information was given to students in Bandera County in the annual report to the Board.

- On November 6, 2015 L. Sparks and M. Ayers gave an aquaponics/water conservation presentation to Bandera High School students.
- On November 21, 2015 D. Meier and M. Ayers presented and facilitated a lab over water quality and water conservation at Schreiner University's annual Expanding Your Horizons event, at which conservation literature was given to each student.
- On February 24, 2016 M. Ayers sponsored and co-presented The Nueces River Authority's Water Resource Stewardship program (over water conservation, water quality, pollution, aquifer science, riparian systems) at Utopia ISD.
- On February 29th and March 1st 2016 M. Ayers sponsored and co-presented The Nueces River Authority's Water Resource Stewardship program (over water conservation, water quality, pollution, aquifer science, riparian systems) at Bandera ISD.
- On March 11, 2016 M. Ayers gave a water conservation and watershed protection presentation during Bandera High School's Career Day.
- On April 15, 2016 BCRA GD sponsored and co-presented The Nueces River Authority's Water Resource Stewardship program (over water conservation, water quality, pollution, aquifer science, riparian systems) at Medina ISD.
- On June 21, 2016 BCRA GD presented over water use and conservation to a Girl Scout camp at Medina Lake.
- On August 9, 2016 BCRA GD manned a booth at Bandera ISD's annual Back to School Bash during which conservation literature was provided.
- On September 21, 2016 BCRA GD facilitated an Aquifer build activity and presentation as part one of the Science and Action series for Bandera Middle School students and provided conservation literature.
- The District provided an elementary education curriculum (Major Rivers) to the elementary schools in Bandera County, Medina ISD, and Utopia. Major Rivers is a series of seven lessons designed to teach 4th and 5th graders about the water cycle and water in Texas.
- The District gave educational water related talks to local groups when requested.

Management Goal 8

8.0.0 ADDRESS RAINWATER HARVESTING

8.1.1 Management Objective

Provide literature on designing and operating a rainwater harvesting system to the public.

8.1.2 Performance Standard

Provide Rainwater Harvesting material to the public in handouts. Publish a minimum of one newspaper article annually on the benefits of Rainwater Harvesting. Report annually to the Board of Directors the number of publications provided and other educational talks by the District.

Total # of Rainwater Harvesting Literature handed out FY 2016:

- Electronic reference sheet of The Texas Manual on Rainwater Harvesting- 102
- Water Conserving Tips- 106 hard copies; 51 electronic copies
- Conserving Water Outdoors- 168 hard copies; 51 electronic copies

Rainwater Harvesting material is provided at all District public meetings. (12 meetings): 10/8/2015, 11/5/2015, 12/23/2015, 1/9/2016, 2/26/2016, 4/14/2016, 6/9/2016, 7/14/2016, 7/14/2016, 8/11/2016, 9/8/2016 (3)

•On September 8 2016, The Bandera County Courier ran an article titled, “Rainwater Harvesting conserves rainwater”, written by D. Mauk and M. Ayers.

•On December 23, 2015 D. Mauk, M. Redman, J. Jilson, M. Redman, M. Ayers, D. Meier, and L. Sparks, hosted a BCRA GD Water Conservation Christmas Event, at which a watershed protection presentation was given and water conservation and rainwater harvesting literature were provided.

•On February 3, 2016 BCRA GD hosted & participated in the Medina River Protection Fund’s meeting where conservation and rainwater harvesting literature was provided.

•On April 9, 2016 D. Mauk and M. Ayers facilitated a water conservation workshop, titled, Growing a Garden with Less Water, alongside TAMU AgriLife and Ranchers and Landowners Association, at which water conservation and rainwater harvesting literature was provided.

•On August 18, 2016 BCRA GD facilitated a water conservation and land stewardship workshop, titled, Local Water Resource Stewardship, alongside TAMU AgriLife, at which water conservation and rainwater harvesting literature was provided.

•On September 20, 2016 BCRA GD hosted a Board of Realtors Meeting at the BCRA GD Office, where water conservation literature and rainwater harvesting information was provided.

Management Goal 9

9.0.0 ADDRESS RECHARGE ENHANCEMENT

The District does not currently have the financial resources to buy property and construct recharge structures; therefore, this goal is not applicable to the District at this time.

Management Goal 10

10.0.0 ADDRESS PRECIPITATION ENHANCEMENT

Precipitation enhancement over Bandera County is financed by the Edward Aquifer Authority and operates from Pleasanton, Texas; therefore, this goal is not applicable to the District at this time.

Management Goal 11

11.0.0 ADDRESS BRUSH CONTROL

11.1.1 Management Objective

Provide to the public available information or published reports on the benefits of brush and control to 100 percent of written public requests.

11.1.2 Performance Standard

Report the number of requests received for brush control information, and the number of times brush control information was provided, in an annual report to the Board of Directors.

- Brush control information is available at the office for the public. There were no written requests for brush control information from the public for fiscal year 2016.
- On February 24, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Utopia ISD. Riparian and upland brush control topics were included.
- On February 29th and March 1st 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Bandera ISD. Riparian and upland brush control topics were included.
- On April 15, 2016 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the Water Resource Stewardship Program at Medina ISD. Riparian and upland brush control topics were included.
- On August 18, 2016 BCRAGD facilitated a water conservation and land stewardship workshop, titled, Local Water Resource Stewardship, alongside TAMU AgriLife, which included brush control information within the land management portion of the presentation.

Management Goal 12

12.0.0 ADDRESSING WATER QUALITY.

12.1.1 Management Objective

Continue the existing program to monitor groundwater quality in the District.

12.1.2 Performance Standard

Continue to monitor water quality from 10 wells in the monitoring system on a semi-annual basis, and from newly drilled wells when samples can be obtained. Report the number of samples obtained to the Board of Directors in an annual report.

- Monitor Well Water Samples taken: 40 total
- Water Analysis Performed on New Wells: 53 total

12.2.1 Management Objective

Continue the existing program to monitor surface water quality in the District.

12.2.2 Performance Standard

Continue to monitor water quality from a minimum of 6 locations in the county from the Sabinal and Medina River basins on a quarterly basis. Report the number of samples obtained to the Board of Directors in an annual report.

BCRAGD continued partnership with SARA to participate in the Clean Rivers Program in the Bandera County portion of San Antonio River Basin. BCRAGD is responsible for sampling 6 sites along the Medina River. During the last quarter of FY 2016, BCRAGD partnered with Nueces River Authority to participate in the CRP in the Bandera County portion of the Nueces River Basin; BCRAGD is responsible for 2 sites along the Sabinal River in Bandera County. The District continued its in-house surface water quality monitoring programs along the Medina and Sabinal rivers for the protection of the citizens of Bandera County. 208 total samples were taken between all surface water quality monitoring programs and are summarized below. For in-house water quality data results see CD LABELED "FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2". CRP water quality data can be viewed at <http://www80.tceq.texas.gov/SwqmisWeb/public/crpm.html>

1st Quarter: Oct 2015-Dec 2015

Oct 14-15, 2015-- CRP; 6 Medina R.
Nov 23, 2015 (4 Medina R., 2 Medina Lake sites)
Nov 24, 2015 (3 Sabinal R., 6 Medina R. sites)
Dec 29-30, 2015-- CRP; 6 sites Medina R.

2nd Quarter: Jan 2016 to March 2016

January 12, 2016 (2 Sabinal R., 12 Medina R., 3 Medina Lake sites)
March 1-2, 2016-- CRP; 6 sites Medina R.
March 16, 2016 (1 Sabinal R. , 4 Medina R. sites)
March 17, 2016 (4 Sabinal R., 10 Medina River sites)

3rd Quarter: April 2016 to June 2016

June 8, 2016 (4 Sabinal R. sites, 8 Medina R. sites)

4th Quarter: July 2016 to September 2016

July 13, 2016 (4 Medina R. sites, 2 Medina Lake)
July 14, 2016 (6 Medina Lake sites)
July 21, 2016 (1 M. Lake, 14 Medina R., 5 Sabinal R.)
July 26-27, 2016-- CRP; 6 Medina R.
July 28, 2016 (9 Medina Lake sites, 4 Medina R. sites)
August 4, 2016 (1 M. Lake, 14 Medina R., 5 Sabinal)
August 3, 2016-- CRP; 2 Sabinal River sites
August 18, 2016 (1 Medina Lake site, 11 Medina R. sites, 5 Sabinal R. sites)
August 25, 2016 (4 Medina R. sites)
September 1, 2016 (1 M. Lake, 13 Medina R., 5 Sabinal)
September 7, 2016 (9 Medina Lake sites)
September 28-29, 2016-- CRP; 5 Medina Lake sites

Management Goal 13

13.0.0 ADDRESSING IN A QUANTITATIVE MANNER THE DESIRED FUTURE CONDITIONS.

13.1.1 Management Objective

To achieve the Desired Future Condition adopted by GMA 9 For the Edwards Group of the Edwards Trinity (Plateau) and the Hill Country Trinity Aquifer.

13.1.2 Performance Standard

Groundwater Management Area 9 has adopted a Desired Future Condition (DFC) for the Edwards Trinity Plateau and the Hill Country Trinity aquifer.

District rules do not allow permitted wells in the Edwards Trinity Plateau Aquifer. The District has established a monitor well in the Edwards Aquifer and is monitoring the water level and rainfall on a real-time basis. A comparison of the annual water level measurements and the cumulative water level trend to the adopted Desired Future Condition will be made annually. The water levels will be included in the District database and a discussion of the water level trend-Desired Future Condition comparison will be reported to the Board of Directors on an annual basis and documented in the annual report. The District will notate the Hill Country Trinity Aquifer water level trends from the District's Monitor Wells in order to track the District's progress in complying with the average drawdown as stated in GAM Task 10-005 Scenario 6 for Bandera County. The General Manager will report annually to the District Board of Directors and GMA 9 committee the progress of achieving the Desired Future Condition.

The General Manager will complete an annual groundwater report that details groundwater production from non-exempt wells combined with exempt well pumping estimates supplied by the Texas Water Development Board. This report will be included in the annual report provided to the District's Board of Directors.

In Bandera County, the permitted (non-exempt) production in the Trinity Group for 2015 was 1017.71 acre-feet and for 2016 was 1051.32 acre-feet. The District does not have any permitted wells in the Edwards-Trinity Plateau. TWDB supplied exempt-use pumping estimates total 2061 acre-feet (1870 Trinity, 10 other, 181 Edwards-Trinity Plateau) for both 2015 and 2016. That gives us a total production in the Trinity of 2897.71 acre-feet of groundwater production for 2015 and 2931.32 acre-feet of groundwater production for 2016.

TWDB produced a Modeled Available Groundwater(MAG) for the Desired Future Condition (DFC) adopted by GMA-9. The MAG produced by TWDB indicated 7,284 acre-feet of available groundwater production for the Trinity Group and 2,009 acre-feet for the Edwards Group of the Edwards-Trinity(Plateau) in Bandera County.

Taking into account the production amounts and exempt usage estimates the District still has about 4350 acre-feet that can be produced out of the Trinity Group and about 1800 that can be produced out of the Edwards-Trinity Plateau. So, the District still has permittable water available under our current MAG.

The LBG Guyton Technical Memorandum Evaluation of 2016 Water levels in Bandera County, indicates a county-wide water level decline of 21.6 feet between 2008 and 2016 in the Lower Trinity in Bandera County, or an average rate of about 2.5 feet per year. The water level decline between 2015 and 2016 was 3.9 feet in the Lower Trinity. Between 2008 and 2016, the Middle Trinity water level in Bandera County rebounded by about 5.0 feet and by almost 31 feet between 2015 and 2016. Groundwater elevations in the Middle Trinity in Bandera County have increased significantly.

For DFC purposes, the Middle and Lower Trinity are treated as one unit, combined, and levels averaged. Because the Middle and Lower Trinity levels are averaged, the Trinity aquifer has declined -3.8 feet since 2008. The DFC set by GMA 9 calls for a drawdown of up to 30 feet in the Trinity aquifer. So, the drawdown of 3.8 feet in the Trinity is consistent with maintaining or achieving our DFC.

According to District staff, the Edwards-Trinity Plateau aquifer from October 2010 until December 2016 has increased 7 feet. The elevation has changed from 2031.7 in October 2010 to 2038.7 in December 2016. The DFC for the Edwards-Trinity Plateau in Bandera County is set at 0 foot drawdown. So, the increase in groundwater levels in the Edwards-Trinity Group in Bandera County is consistent with maintaining or achieving our DFC.

- See the enclosed Technical Memorandum, Evaluation of 2016 Water Levels in Bandera County, prepared by LBG-Guyton Associates, beginning on the following page. Full report is also included on - CD LABELED “FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2”
- Also see the enclosed table detailing groundwater production from non-exempt wells combined with exempt well pumping estimates supplied by the TWDB, which begins on the page following the full report of the LBG-Guyton Associates memorandum. This table is also included on - CD LABELED “FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.1.2a, 13.1.2”



LBG-GUYTON ASSOCIATES

TECHNICAL MEMORANDUM

TO: Dave Mauk, Michael Redman, Bandera County RAGD
FROM: James Beach, P.G., Kristie Laughlin, P.G., Hunter King
SUBJECT: Evaluation of 2016 Water Levels in Bandera County
DATE: February 28, 2017

INTRODUCTION

LBG-Guyton Associates evaluated water level measurements to compare 2016 water levels in the Trinity Aquifer to the 50-year desired future condition (DFC) of a maximum of 30 feet of drawdown.

Water level data was assimilated during Fiscal Year (FY) 2016, which began on October 1, 2015 for the Lower Trinity and Middle Trinity wells in Bandera County. For the purposes of this memo, the water level measurements collected in FY 2016 will be referred to as the 2016 data. 2016 water level data was compared to data from 2008 and 2015.

During 2016, 40 Trinity wells in Bandera County were monitored for DFC purposes. Thirty-three (33) of these wells are completed in the Middle Trinity Aquifer and seven are completed in the Lower Trinity formations. Figure 1 shows the well locations where water level measurements were collected during 2008 and 2016, and which of the wells are screened in the Lower Trinity formations.

METHODOLOGY

There were 29 wells in Bandera County with water levels measured in 2008. Twenty-two of these wells are screened in the Middle Trinity and seven wells were screened in the Lower Trinity. The following steps were taken to estimate water level changes across the county.

1. Wells were grouped into Middle Trinity and Lower Trinity.
2. For wells with more than one water level measurements in a year, depth to water (DTW) measurements were averaged for the year.
3. Change in water level was calculated for each well for each period (2008-2016) and (2015-2016) by subtracting the more recent water level data from the previous data. Therefore, negative numbers indicate a decrease in water level in the aquifer and positive numbers indicate a water level increase in the aquifer during the period.

Table 1 summarizes the available well locations, water level measurements, and calculated water level changes in the Lower Trinity aquifer between 2008 and 2016 in Bandera County.



Table 2 shows the available well locations, water level measurements, and calculated water level changes in the Middle Trinity aquifer between 2008 and 2016 in Bandera County.

Table 3 shows the available well locations, water level measurements, and calculated water level changes in the Lower Trinity aquifer between 2015 and 2016 in Bandera County. Table 4 shows the available well locations, water level measurements, and calculated water level changes in the Middle Trinity aquifer between 2015 and 2016 in Bandera County. Table 4 indicates that all but two Middle Trinity wells had an increase in water level elevation between 2015 and 2016.

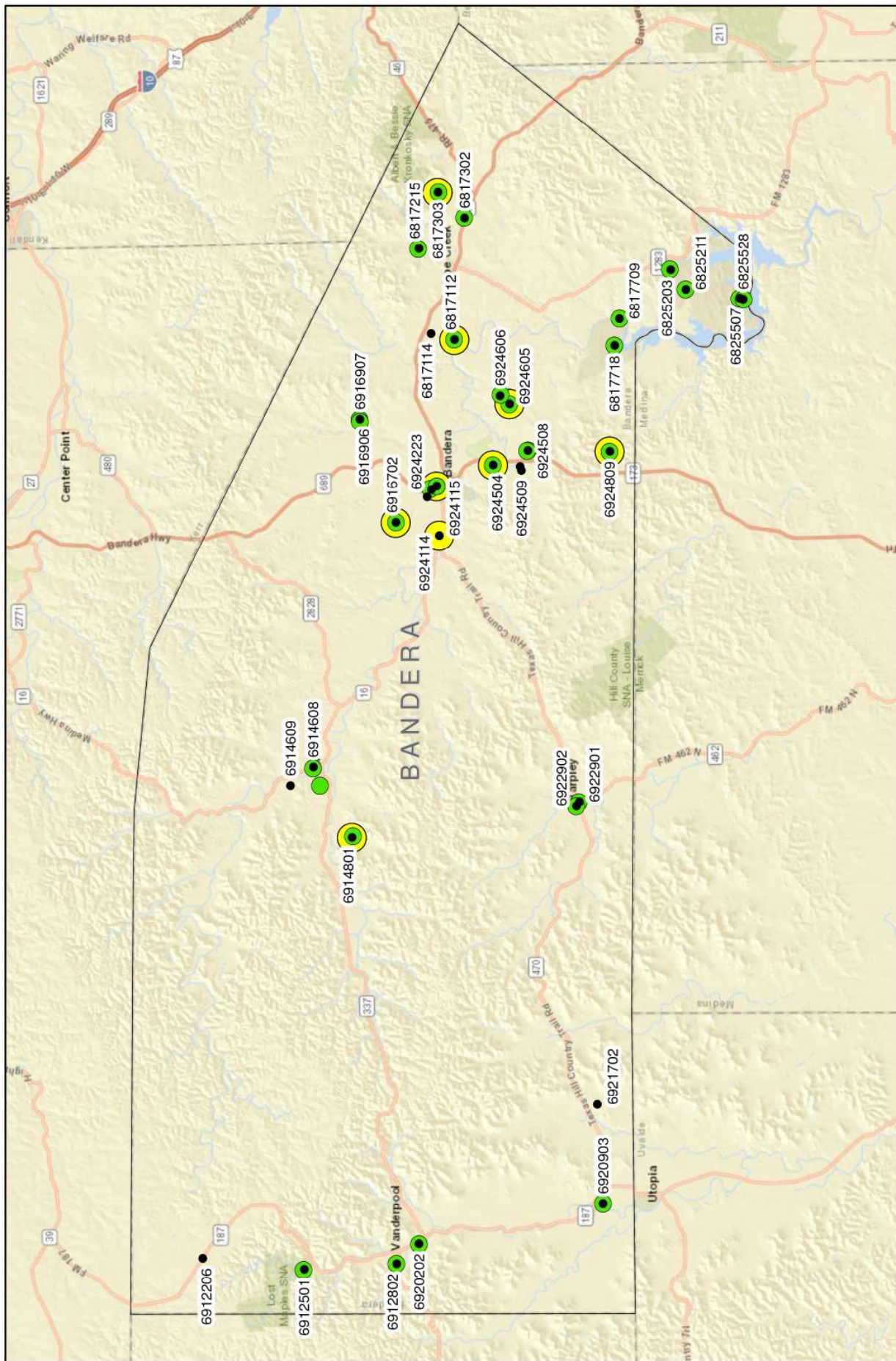
The DFC in Bandera County was calculated as an average water level decline over the entire county based on the water level decline at each gridblock in the TWDB Trinity Hill Country Groundwater Availability Model (GAM). Each gridblock (or model cell) covers one square mile and the thus the nodes of the model are separated by 1 mile in the north-south direction and the east-west direction. To develop a comparable estimate from water level measurements, the water level changes from individual wells in Tables 1 through 4 were used to interpolate data onto a regularly spaced grid using an inverse distance weighted method. Then the average water level change for the entire county was calculated from the grid. This approach helps avoid spatial bias that can occur in areas containing a higher concentration of wells.

RESULTS OF ASSESSMENT

Table 5 summarizes the water level change in the Middle and Lower Trinity aquifers in Bandera County based on the data in Tables 1 through 4 and the methodology described above. The bottom row in Table 5 shows one estimate of the county-wide water level change in the Middle and Lower Trinity aquifers. These estimates are an average of the values for the Lower and Middle Trinity from the rows above.

Table 5 indicates a county-wide water level decline of 21.6 feet between 2008 and 2016 in the Lower Trinity in Bandera County, or an average rate of about 2.5 feet per year. The water level decline between 2015 and 2016 was 3.9 feet in the Lower Trinity.

Between 2008 and 2016, the Middle Trinity water level in Bandera County rebounded by about 5.0 feet and by almost 31 feet between 2015 and 2016. Groundwater elevations in the Middle Trinity in Bandera County have increased significantly.



Legend

- 2008 Measurement Available
- 2016 Measurement Available
- BCRAGD Lower Trinity Well Location

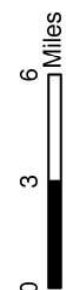


Figure 1
Bandera County RAGD
Monitoring Well Network

Table 1
Bandera RAGCD Lower Trinity Water Level Calculations Between 2008 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2008 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2008-2016 Water Level Difference (feet) ¹
Cielo Rio Ranch, LTD	6817112	29.724106	-98.980872	1,233	1,233.8	760	-233.7	-296.5	-62.8
Latigo Ranch	6817303	29.732594	-98.887050	1,535	1,537.2	1,080	-403.8	-421.0	-17.2
TxDOT	6916702	29.757644	-99.097656	1,337	1,338.3	798	-345.9	-369.6	-23.8
Bandera Co.	6924225	29.734675	-99.074664	1,270	1,272.4	800	-434.4	-438.4	-4.0
Alkek Elementary School	6924504	29.703239	-99.061333	1,319	1,319.8	930	-375.6	-395.4	-19.8
Bridlegate (Southernland Comm.)	6924605	29.693781	-99.022122	1,308	1,309.1	940	-342.1	-362.7	-20.6
Flying A	6924809	29.638231	-99.053247	1,391	1,392.4		-272.4	-267.9	4.5

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 2
Bandera RAGCD Middle Trinity Water Level Calculations Between 2008 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2008 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2008-2016 Water Level Difference (feet) ¹
Bowie (Edwards)	6817215	29.743569	-98.922564	1,365	1,366.6	485	-204.1	-210.0	-5.8
Evans Water System	6817302	29.717889	-98.903478	1,362	1,363.9	500	-204.0	-201.9	2.1
Lakeshore VFD	6817709	29.632264	-98.968639	1,089	1,090.0	140	-41.7	-41.1	0.7
Tecon	6817718	29.635100	-98.985603	1,099	1,100.7	540	-83.2	-82.4	0.7
Basinger	6825203	29.603467	-98.937806	1,204	1,205.1	460	-295.3	-286.2	9.1
Lakehills Co. Yard	6825211	29.595275	-98.950322	1,154	1,155.8	403	-295.3	-93.7	201.5
Bandera Co. Park	6825507	29.565314	-98.956278	1,099	1,100.3	575	-87.7	-86.7	1.0
Sidney Shores	6825528	29.563250	-98.956861	1,147	1,148.1	585	-126.1	-108.8	17.4
Lost Maples SNA	6912501	29.811203	-99.574389	1,797	1,797.8	770	-351.3	-385.4	-34.1
Bug Scuffle	6912802	29.759706	-99.571089	1,722	1,722.8	650	-299.5	-273.3	26.2
Orchard Park	6914608	29.804597	-99.253350	1,452	1,454.7	311	-36.6	-35.3	1.3
Medina Springs	6914609	29.817344	-99.265253	1,515	1,518.1	465	-122.0	-134.7	-12.7
Chancy	6914801	29.783236	-99.298506	1,558	1,558.8	500	-183.5	-197.3	-13.8
Mason Creek Shallow	6916906	29.777181	-99.031000	1,380	1,382.6		-168.6	-170.4	-1.8
Mason Creek Deep	6916907	29.777181	-99.031000	1,380	1,382.6	480	-168.6	-185.3	-16.7
Vanderpool VFD	6920202	29.747169	-99.558383	1,585	1,586.3	580	-156.5	-49.3	107.2
Williams	6920903	29.644689	-99.533106	1,407	1,408.7	420	-25.9	-137.5	-111.6
Erfurt	6922901	29.656719	-99.276719	1,300	1,301.0	330	-21.7	-17.3	4.5
Tarpley VFD	6922902	29.658356	-99.279414	1,322	1,323.3	460	-42.5	-54.5	-12.0
Boyle	6924223	29.737742	-99.076803	1,300	1,301.2	296	-128.1	-94.1	33.9
Jeffery (Shallow)	6924508	29.683889	-99.052222	1,318	1,319.6	135	-35.2	-28.9	6.3
Jeffery (yellow house)	6924509	29.687550	-99.064933	1,316	1,317.7	500	-177.2	-98.0	79.2
Bridlegate MT	6924606	29.698989	-99.016933	1,360	1,361.9	607	-234.7	-222.6	12.1

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 3
Bandera RAGCD Lower Trinity Water Level Calculations Between 2015 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2015 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2015-2016 Water Level Difference (feet) ¹
Alkek Elementary	6924504	29.703239	-99.061333	1,319	1,319.8	930	-395.6	-395.4	0.2
Bandera City	6924225	29.734675	-99.074664	1,270	1,272.4	800	-443.9	-438.4	5.5
Bandera Sports Complex LT	6924114	29.733458	-99.106233	1,264	1,264.9	870	-367.3	-367.9	-0.5
Bridlegate LT	6924605	29.693781	-99.022122	1,308	1,310.1	940	-374.2	-362.7	11.6
Cielo Rio Ranch, Ltd.	6817112	29.724106	-98.980872	1,233	1,233.8	760	-272.9	-296.5	-23.5
Flying A	6924809	29.638231	-99.053247	1,391	1,392.4		-255.4	-267.9	-12.6
Latigo Ranch	6817303	29.732594	-98.887050	1,535	1,537.2	1,080	-413.5	-421.0	-7.5
TxDot	6916702	29.757644	-99.097656	1,337	1,338.3	798	-370.2	-369.6	0.5

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

Table 4
Bandera RAGCD Middle Trinity Water Level Calculations Between 2015 and 2016

Owner	State Well Number	Latitude	Longitude	Land Surface Elevation (feet amsl)	Top of Casing Elevation (feet amsl)	Total Depth (feet below land surface)	2015 Average Depth to Water (feet below top of casing)	2016 Average Depth to Water (feet below top of casing)	Average 2015-2016 Water Level Difference (feet) ¹
Bandera Co. Park	6825507	29.565314	-98.956278	1,099	1,100.3	575	-132.91	-86.65	46.26
Bandera Sports Complex MT	6924115	29.733458	-99.106233	1,264	1,266.3	500	-93.35	-67.86	25.49
Basinger	6825203	29.603467	-98.937806	1,204	1,205.1	460	-329.75	-286.16	43.59
BCRAGD CC	6924230	29.740194	-99.081481	1,254	1,255.2	490	-160.08	-133.70	26.38
BCRAGD LGR	6924229	29.740194	-99.081481	1,254	1,255.0	340	-156.51	-103.40	53.11
Boultinghouse	6921702	29.647544	-99.469864	1,580	1,580.9	628	-339.62	-322.20	17.42
Bowie	6817215	29.743569	-98.922564	1,365	1,366.6	485	-211.58	-209.95	1.63
Boyle	6924223	29.737742	-99.076803	1,300	1,301.2	296	-161.04	-94.14	66.90
Bridlegate MT	6924606	29.698989	-99.016933	1,360	1,361.9	607	-239.14	-222.61	16.53
Bug Scuffle	6912802	29.759706	-99.571089	1,722	1,722.8	650	-325.90	-273.32	52.58
Chancy	6914801	29.783236	-99.298506	1,558	1,558.8	500	-207.25	-197.30	9.95
Cielo Rio Ranch, Ltd	6817114	29.737222	-98.976944	1,331	1,332.1	440	-191.45	-179.49	11.96
Erfurt	6922901	29.656719	-99.276719	1,300	1,301.0	330	-24.12	-17.27	6.85
Evans Water System	6817302	29.717889	-98.903478	1,362	1,363.9	500	-203.33	-201.93	1.41
Jeffery (Barn)	6924512	29.688200	-99.062478	1,313	1,314.5	500	-177.90	-157.32	20.58
Jeffery (Shallow)	6924508	29.683889	-99.052222	1,318	1,319.6	135	-31.03	-28.91	2.12
Jeffery (yellow house)	6924509	29.687550	-99.064933	1,316	1,317.7	500	-166.02	-98.03	67.99
Lakehills Co. Yard	6825211	29.595275	-98.950322	1,154	1,155.8	403	-131.91	-93.71	38.19
Lakeshore VFD	6817709	29.632264	-98.968639	1,089	1,090.0	140	-65.69	-41.05	24.64
Lost Maples SNA	6912501	29.811203	-99.574389	1,797	1,797.8	770	-373.78	-385.40	-11.63
Mason Creek Deep	6916907	29.777181	-99.031000	1,380	1,382.6	480	-208.29	-185.34	22.95
Mason Creek Shallow	6916906	29.777181	-99.031000	1,380	1,382.6		-186.15	-170.44	15.71
Medina Springs	6914609	29.817344	-99.265253	1,515	1,518.1	465	-150.40	-134.71	15.69
Orchard Park	6914608	29.804597	-99.253350	1,452	1,454.7	311	-35.94	-35.29	0.65
Sidney Shores	6825528	29.563250	-98.956861	1,147	1,148.1	585	-152.37	-108.75	43.62
Tarpley VFD	6922902	29.658356	-99.279414	1,322	1,323.3	460	-24.12	-54.54	-30.42
Tecon	6817718	29.635100	-98.985603	1,099	1,100.7	540	-104.97	-82.44	22.53
Vanderpool VFD	6920202	29.747169	-99.558383	1,585	1,586.3	580	-338.31	-49.27	289.04
Williams	6920903	29.644689	-99.533106	1,407	1,408.7	420	-152.93	-137.52	15.41

1) A negative value indicates a decrease of groundwater elevation, a positive value indicates an increase, or rebound, of groundwater elevation.

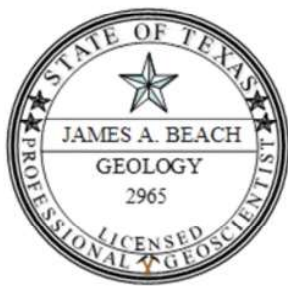
Table 5. Summary of Water Level Change for Middle and Lower Trinity Aquifers


Aquifer	Water Level Change (feet) 2008-2016	Water Level Change (feet) 2015-2016
Lower Trinity	-21.6	-3.9
Middle Trinity	5.0	30.9
Middle and Lower Trinity	-8.3	13.5



GEOSCIENTIST'S SEAL

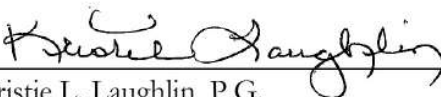
This report documents the work of the following licensed professional geoscientists with LBG-Guyton Associates, a licensed professional geoscientist firm in the State of Texas (License No. 50111).




James Beach, P.G.
Senior Vice President

The seal appearing on this document was authorized
by James A. Beach, P.G. on February 28, 2017




Kristie L. Laughlin, P.G.
Senior Hydrogeologist

The seal appearing on this document was authorized
by Kristie L. Laughlin, P.G. on February 28, 2017.

The table below (pertaining to Performance Standard 13.1.2) is an annual groundwater report that details groundwater production from non-exempt wells combined with exempt well pumping estimates supplied by the Texas Water Development Board. This table is also included on - CD LABELED "FY 2016 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2b, 4.12a, 13.1.2"

Total Exempt & Non-Exempt Use (in acre-feet)			
2015		2016	
<i>Exempt Use Edwards-Trinity</i>	181	<i>Exempt Use Edwards-Trinity</i>	181
<i>Exempt Use Other</i>	10	<i>Exempt Use Other</i>	10
<i>Exempt Use Trinity</i>	1870	<i>Exempt Use Trinity</i>	1870
Total Exempt Use	2061	Total Exempt Use	2061
Non-Exempt Use Edwards-Trinity	0	Non-Exempt Use Edwards-Trinity	0
Non-Exempt Use Trinity	1017.71	Non-Exempt Use Trinity	1051.32
Total Non-Exempt Use	1017.71	Total Non-Exempt Use	1051.32
Total Use for 2015	3078.71	Total Use for 2016	3112.32

Note: The non-exempt well numbers are obtained from District records. The exempt well pumping estimates are obtained from page 1 of Texas Water Development Board's "Projected Exempt Groundwater Use Estimates: Groundwater Management Area 9, TWDB Final Estimates, December 2015". A copy is included on the following page.

Projected Exempt Groundwater Use Estimates
Acre-feet per year

Bandera County River Authority & Ground Water District

Total Estimated Exempt Use (by aquifer)

Aquifer	2015	2020	2030	2040	2050	2060	2070
Edwards-Trinity Plateau	181	206	230	242	249	251	253
Other	10	13	15	17	18	18	18
Trinity	1,870	2,322	2,818	3,065	3,178	3,238	3,269

Estimated Domestic Exempt Use (by aquifer)

Aquifer	2015	2020	2030	2040	2050	2060	2070
Edwards-Trinity Plateau	90	115	139	151	158	160	162
Other	10	13	15	17	18	18	18
Trinity	1,772	2,224	2,720	2,967	3,080	3,140	3,171

Estimated Livestock Exempt Use (by aquifer)

Aquifer	2015	2020	2030	2040	2050	2060	2070
Edwards-Trinity Plateau	91	91	91	91	91	91	91
Other	0	0	0	0	0	0	0
Trinity	98	98	98	98	98	98	98

Estimates derived using 2010 Census Data, TWDB population projections, TWDB Water Use Survey data, TWDB water demand projections, and the TWDB water well database.

Values are rounded to the nearest acre-foot.

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Appendix A

Annual Financial Report
For the Year Ended September 30, 2016

Prepared by Ede & Company, LLC
Certified Public Accountants

Bandera County River Authority and Groundwater District

**Annual Financial Report
For the Year Ended September 30, 2016**

Ede & Company, LLC
Certified Public Accountants

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Annual Financial Report
For the Year Ended September 30, 2016**

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Annual Financial Report
For the Year Ended September 30, 2016**

	<u>Page</u>
Table of Contents	
Annual Filing Affidavit	1
Independent Auditor's Report	2 - 3
Management's Discussion and Analysis	4 - 8
Statement of Net Position and Governmental Funds Balance Sheet	10
Statement of Activities and Governmental Funds Revenues, Expenditures and Changes in Fund Balances	11-12
Notes to the Financial Statements	13-16
Required Supplementary Information	
Budgetary Comparison Statement - General Fund	19-20
Analysis of Taxes Receivable	21

ANNUAL FILING AFFIDAVIT

THE STATE OF TEXAS X
 X
COUNTY OF BANDERA X

I, DONALD G. SLOAN of the BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT hereby swear, or affirm, that the district named above has reviewed and approved at a meeting of the Board of Directors of the District on the 12th day of January, 2017, its annual audit report for the year ended September 30, 2016 and that copies of the annual report have been filed in the district office located, at BANDERA, TX.

This annual filing affidavit and the attached copy of the annual audit report are being submitted to the Texas Commission on Environmental Quality in satisfaction of all annual filing requirements within Section 49.194 of the Texas Water Code.

Dated 2/7/2017, 2017

By: Donald G. Sloan
(Signature of District Representative)

PRESIDENT
(Type Name & Title of above District Representative)

Sworn to and Subscribed to before me this 7 day of FEBRUARY, 2017

Jeffrey D. Wilson
(Signature of Notary)

Commission Expires on 10-07-2018

Jeffrey D. Wilson
(Print Name of Notary)

Notary Public in and for the State of Texas.

EDE & COMPANY, LLC

Certified Public Accountants

Eric Ede
Donna Ede Jones

P. O. Box 219
Knippa, Texas 78870
Telephone (830) 934-2148
Fax (830) 934-2799
Email: edecpa@hotmail.com

INDEPENDENT AUDITOR'S REPORT

Board of Directors
Bandera County River Authority
and Groundwater District
P. O. Box 177
Bandera, Texas 78003

We have audited the accompanying financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the Bandera County River Authority and Groundwater District, as of and for the year ended September 30, 2016 and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, each major fund, and the aggregate remaining fund information of the Bandera County River Authority and Groundwater District, as of September 30, 2016, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

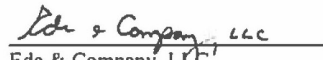
Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and budgetary comparison information as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Bandera County River Authority and Groundwater District's basic financial statements. The analysis of taxes receivable is presented for purposes of additional analysis and are not a required part of the basic financial statements.

The analysis of taxes receivable is the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the analysis of taxes receivable is fairly stated, in all material respects, in relation to the basic financial statements as a whole.


Ede & Company, LLC
Certified Public Accountants
Knippa, Texas

January 5, 2017

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section of Bandera County River Authority and Ground Water District's annual financial report presents our discussion and analysis of the District's financial performance during the period ended September 30, 2016. Please read it in conjunction with the District's financial statements, which follow this section.

FINANCIAL HIGHLIGHTS

- The District's total combined net position was \$608,586.09 at September 30, 2016.
- During the year, the District's expenses were \$32,486.18 more than the \$735,354.24 generated in taxes, service fees and other revenues for governmental activities.
- The total cost of the District's programs remained the same during the current year.
- The general fund reported a fund balance this year of \$174,780.15
- The District's net position decreased \$32,486.18 which represents a 5.22 percent decrease from 2015.

OVERVIEW OF THE FINANCIAL STATEMENTS

This annual report consists of three parts—*management's discussion and analysis* (this section), the *basic financial statements*, and *required supplementary information*. The basic financial statements include two kinds of statements that present different views of the District: The Statement of Net Position and the Statement of Activities provide information about the activities of the District as a whole and present a longer term view of the district's finances. All of the District's activities are accounted for in the General Fund.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of *required supplementary information* that further explains and supports the information in the financial statements.

Government-wide Statements

The government-wide statements report information about the District as a whole using accounting methods similar to those used by private-sector companies. The statement of net position includes all of the government's assets and liabilities. All of the current year's revenues and expenses are accounted for in the statement of activities regardless of when cash is received or paid.

The two government-wide statements report the District's net position and how they have changed. Net position, the difference between the District's assets and liabilities is one way to measure the District's financial health or *position*.

- Over time, increases or decreases in the District's net position is an indicator of whether its financial health is improving or deteriorating, respectively.
- To assess the overall health of the District, one needs to consider additional nonfinancial factors such as changes in assessed values of property within the District.

The government-wide financial statements of the District include the *Governmental activities*. All of the District's basic services are included here, such as property tax revenue, and water permits.

FINANCIAL ANALYSIS OF THE DISTRICT AS A WHOLE

The District's combined net position was \$608.6 thousand at September 30, 2016. (See Table A-1).

Table A-1
BANDERA COUNTY RIVER AUTHORITY AND
GROUND WATER DISTRICT

	Governmental Activities		Total Percentage Change 2016 - 2015
	2016	2015	
Current assets:			
Cash and cash equivalents	\$ 177.5	\$ 193.1	-8.08%
Property taxes receivable	43.7	45.3	-3.53%
Due from other governments	3.3	1.6	106.25%
Prepayments	4.3	3.5	22.86%
Total current assets	<u>228.8</u>	<u>243.5</u>	<u>-6.04%</u>
Noncurrent assets:			
Capital Assets	591.0	571.9	3.34%
Less accumulated depreciation	<u>(200.8)</u>	<u>(172.0)</u>	<u>16.74%</u>
Total noncurrent assets	<u>390.2</u>	<u>399.9</u>	<u>-2.43%</u>
Total Assets	<u>619.0</u>	<u>643.4</u>	<u>-3.79%</u>
Current liabilities:			
Accounts payable and accrued liabilities	3.0	1.3	130.77%
Legal trust fee	<u>7.4</u>	<u>-</u>	<u>100.00%</u>
Total Liabilities	<u>10.4</u>	<u>1.3</u>	<u>700.00%</u>
Net Position:			
Invested in capital assets	390.2	399.9	-2.43%
Unrestricted	<u>218.4</u>	<u>242.2</u>	<u>-9.83%</u>
Total Net Position	<u>\$ 608.6</u>	<u>\$ 642.1</u>	<u>-5.22%</u>

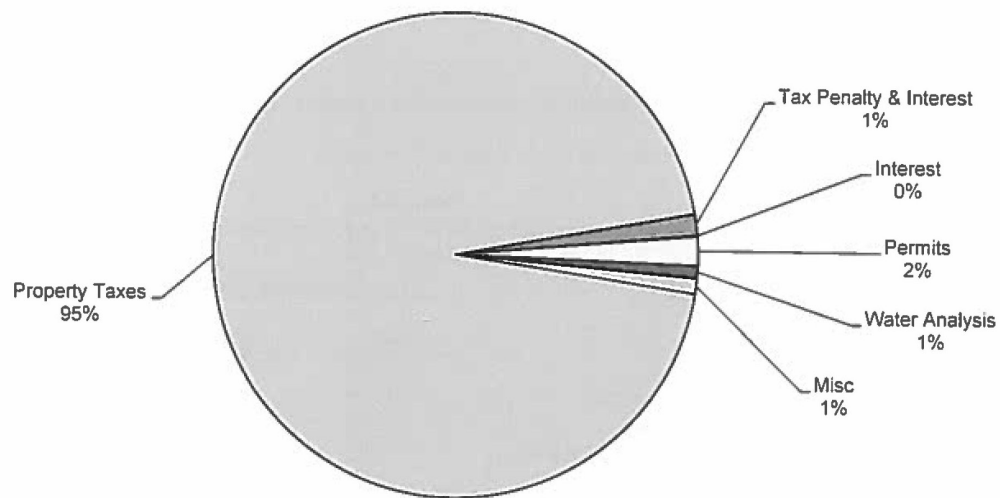
Changes in net position. The District's total revenues were \$735.4 thousand. A significant portion, 95 percent, of the District's revenue comes from property taxes. (See Figure A-3.) and 2% from permits on new wells.

The total cost of all programs and services was \$767.8 thousand; 100 percent of these costs are for General Government.

Table A-2
Changes in Bandera County River Authority and Groundwater District's Net Position
(In thousands dollars)

	Governmental Activities		Total Percentage Change
	2016	2015	2016-2015
General Revenue			
Property Taxes	696.6	579.9	20.12%
Penalty & Interest	10.2	7.6	34.21%
New Well Applications & Permits	14.0	11.2	25.00%
Other	14.6	18.5	-21.08%
Total Revenue	<u>735.4</u>	<u>617.2</u>	<u>19.15%</u>
Program Expenses			
General Government	<u>767.9</u>	<u>647.4</u>	<u>18.61%</u>
Total Expense	<u>767.9</u>	<u>647.4</u>	<u>18.61%</u>
Increase (Decrease) in Net Position	<u>\$ (32.5)</u>	<u>\$ (30.2)</u>	<u>7.62%</u>

2016 Revenue Sources



2016 Expenses

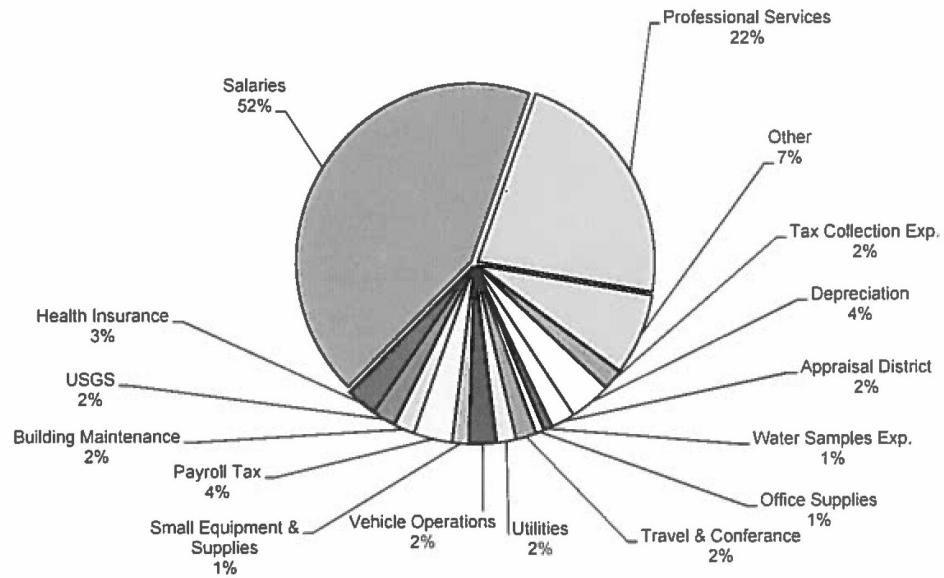


Table A-3 presents the cost of each of the District's largest functions as well as the major administrative categories.

- The cost of all *governmental* activities this year was 675.1 thousand.

Table A-3
Net Cost of Selected District Functions & Major Administrative Categories
(in thousands of dollars)

	Total Costs of Services		
	2016	2015	Percent Change
Salaries	329.4	319.3	3.16%
Professional Services	172.0	115.6	48.79%
Health Insurance	21.9	27.5	-20.36%
Small Equipment & Supplies	11.3	8.9	26.97%
Vehicle Operations	19.2	14.1	36.17%
Utilities	13.3	14.2	-6.34%
Travel & Conference	14.1	12.5	12.80%
Office Supplies	5.8	10.1	-42.57%
Water Samples Exp.	6.2	5.9	5.08%
Appraisal District	16.5	12.9	27.91%
Depreciation	28.7	27.7	3.61%
Tax Collection Exp.	14.2	11.8	20.34%

CONTACTING THE DISTRICT'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, and investors and creditors with a general overview of the District's finances and to demonstrate the District's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the District's Business Office.

Basic Financial Statements

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT**
Statement of Net Position and Governmental Funds Balance Sheet
September 30, 2016

	General Fund	Adjustments	Statement of Net Position
ASSETS			
Cash and investments	\$ 177,489.41	\$ -	\$ 177,489.41
Accounts receivable	80.00	-	80.00
Taxes receivable	43,587.54	-	43,587.54
Due from other governments	3,325.24	-	3,325.24
Prepayments	4,318.64	-	4,318.64
Capital assets (net of accumulated depreciation)			
Land		150,000.00	150,000.00
Building		141,968.63	141,968.63
Monitoring wells & equipment		63,614.12	63,614.12
Vehicles	-	34,635.65	34,635.65
Total assets	<u>\$ 228,800.83</u>	<u>390,218.40</u>	<u>619,019.23</u>
LIABILITIES			
Accounts payable	\$ 3,001.14	-	3,001.14
Legal trust fee	7,432.00	-	7,432.00
Payroll taxes payable	-	-	-
Total liabilities	<u>10,433.14</u>	<u>-</u>	<u>10,433.14</u>
DEFERRED INFLOW OF RESOURCES			
Unavailable Revenue- Property Taxes	43,587.54	(45,287.52)	-
Total Deferred Inflows of Resources	<u>43,587.54</u>	<u>(45,287.52)</u>	<u>-</u>
FUND BALANCES/NET POSITION			
Fund balances:			
Committed	51,799.00	(51,799.00)	-
Unassigned	122,981.15	(122,981.15)	-
Total Fund Balance	<u>174,780.15</u>	<u>(174,780.15)</u>	<u>-</u>
Total liabilities deferred inflows and fund balances	<u>\$ 228,800.83</u>	<u>(220,067.67)</u>	<u>10,433.14</u>
Net Position:			
Invested in capital assets, net of related debt		390,218.40	390,218.40
Unrestricted		218,367.69	218,367.69
Total net position		<u>\$ 608,586.09</u>	<u>\$ 608,586.09</u>

The accompanying notes are an integral part of this statement.

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT**
Statement of Activities and Governmental Funds
Revenues, Expenditures and Changes in Fund Balances
For the Year Ended September 30, 2016

	General Fund	Adjustments	Statement of Activities
Revenues:			
Property taxes	\$ 697,341.24	\$ (742.84)	\$ 696,598.40
Property taxes penalty & interest	10,220.01	-	10,220.01
Interest income	781.61	-	781.61
Permits and deposits	14,000.00	-	14,000.00
Non Compliance Penalties	-	-	-
USGS Gauge Station	6,800.00	-	6,800.00
Water analysis	6,159.72	-	6,159.72
Misc	794.50	-	794.50
Total revenues	<u>736,097.08</u>	<u>(742.84)</u>	<u>735,354.24</u>
Expenditures/expenses:			
Service operations:			
Appraisal District	16,453.81	-	16,453.81
Bonds & Insurance	6,205.00	-	6,205.00
Building Maintenance	14,364.29	-	14,364.29
Dues & Subscriptions	3,796.17	-	3,796.17
Education	9,683.85	-	9,683.85
Computer Software and Support	5,087.58	-	5,087.58
Small Equipment & Supplies	15,570.55	(4,275.47)	11,295.08
Furniture	496.53	-	496.53
Public Relations	3,056.89	-	3,056.89
Health Insurance	21,941.99	-	21,941.99
Website	76.62	-	76.62
Monitoring Units	300.00	-	300.00
Office Supplies	5,773.27	-	5,773.27
Office Rent	3,600.00	-	3,600.00
Payroll Tax	26,908.44	-	26,908.44
Postage	613.98	-	613.98
Professional Services	171,993.03	-	171,993.03
Salaries	329,431.27	-	329,431.27
Tax Collection Exp.	14,159.90	-	14,159.90
GMA Expense	2,198.25	-	2,198.25
Travel & Conferences	14,080.34	-	14,080.34
Employee Training	6,457.95	-	6,457.95
Utilities	13,337.60	-	13,337.60
USGS	16,580.00	-	16,580.00

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT**
Statement of Activities and Governmental Funds
Revenues, Expenditures and Changes in Fund Balances
For the Year Ended September 30, 2016

	<u>General Fund</u>	<u>Adjustments</u>	<u>Statement of Activities</u>
Expenditures/expenses: (Continued)			
Vehicle Operations	19,171.99	-	19,171.99
Water Quality Project	6,083.20	-	6,083.20
Water Samples Exp.	6,159.45	-	6,159.45
Well Plugging	-	-	-
Illegal Dumping Litter Abatement	698.78	-	698.78
Medina River Cleanup	501.99	-	501.99
Brush Control	3,500.00	-	3,500.00
Well Logging Equip	4,757.58	-	4,757.58
Capital Outlay	14,796.76	(14,796.76)	-
Miscellaneous	349.90	-	349.90
Depreciation		28,725.69	28,725.69
Total expenditures/expenses	<u>758,186.96</u>	<u>9,653.46</u>	<u>767,840.42</u>
 Excess (deficiency) of revenues over expenditures	 (22,089.88)	 (10,396.30)	 (32,486.18)
Change in net position			
 Fund balance/net position:			
Beginning of the year	196,870.03	444,202.24	641,072.27
End of the year	<u>\$ 174,780.15</u>	<u>\$ 433,805.94</u>	<u>\$ 608,586.09</u>

The accompanying notes are an integral part of this statement.

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2016**

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Reporting Entity

The Bandera County River Authority was created by Acts of the 71st Legislature of the State of Texas. The District was established as a conservation and reclamation district. The authority of the Bandera County River Authority was incorporated into the Springhills Water Management District through enabling legislation appearing as Act of June 17, 1989, Ch. 654, 1989, Tex. Gen. Laws 2155 (Vernon) The Springhills Water Management District. continued all of the programs and activities initiated by the River Authority, and implemented the programs required of a ground water conservation district. On April 10, 2003 the TCEQ authorized changing the District's name to the Bandera County River Authority and Ground Water District.

The District's Board of Directors, a nine member group, has governance responsibilities over all activities related to the District's operations within the jurisdiction of Bandera County River Authority and Ground Water District. Because members of the Board of Directors are elected by the public, they have the primary accountability for fiscal matters. The District is not included in any other governmental "reporting entity" as defined in Section 2100, Codification of Governmental Accounting and Financial reporting Standards.

The District receives no funding from local, state, or federal sources.

B. Government –wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include charges to customers who goods or services provided by a given function or segment. Other items not properly included among program revenues are reported instead as general revenues. Since the District chooses to report all of its activities in the general fund, no individual fund statements are presented.

C. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

The general fund column of the government-wide financial statements is reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within thirty-one days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

Fund Accounting

The District uses funds to maintain its financial records during the year. A fund is defined as a fiscal and accounting entity with a self-balancing set of accounts. The District only uses governmental funds.

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2016**

Governmental Funds

Governmental funds are those through which most governmental functions typically are financed. Governmental funds reporting focuses on the sources, uses and balances of current financial resources.

Expendable assets are assigned to the various governmental funds according to the purpose for which they will be paid. The difference between governmental fund assets and liabilities is reported as fund balance.

The District reports the following major governmental funds:

General Fund – The General Fund is used to account for all financial resources of the District except those required to be accounted for in another fund.

D. Capital Assets

General capital assets generally result from expenditures in the governmental funds. These assets are reported in the statement of net position column of the government-wide statement of net position but are not reported in the general fund column.

All capital assets are capitalized at cost (or estimated historical cost) and updated for additions and retirements during the year. The District maintains a capitalization threshold of \$5,000 for equipment, and all additions to infrastructure are capitalized. Improvements are capitalized; the cost of normal maintenance and repairs that do not add to the value of the asset or materially extend the asset's life are not.

E. Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

F. Reconciliation of Government-wide and General Fund Financial Statements

**Reconciliation of General Fund Balance to
Net Position of Governmental Activities
September 30, 2016**

Total General Fund Balance	\$ 174,780.15
Amounts reported in governmental activities in the statement of net position are different because:	
Capital assets used in the governmental activities are not financial resources and therefore are not reported in the funds.	418,944.09
Accumulated depreciation has not been included in the general fund financial statements.	(28,725.69)
Revenue reported as deferred revenue in the general fund was recorded as revenue in the government-wide financial statements.	43,587.54
Net Position of Governmental Activities	\$ 608,586.09

**Bandera County River Authority and
Groundwater District
Notes to the Financial Statements
September 30, 2016**

**Reconciliation of the Statement of Revenues, Expenditures and
Changes in Fund Balances of Governmental Funds to the
Statement of Activities**

Net Change in Governmental Fund Balances	\$ (22,089.88)
Amounts reported for the governmental activities in the statement of activities are different because:	
Various other reclassifications and eliminations are necessary to convert from the modified accrual basis of accounting to accrual basis	(742.84)
Governmental funds report capital outlays as expenditures. However, they are reported as increases in capital assets in the government-wide financial statements.	19,072.23
Depreciation is not recognized as an expense in governmental funds since it does not require the use of current financial resources. The effect of the current year's depreciation is to decrease net position.	<u>(28,725.69)</u>
Change in Net Position of Governmental Activities	<u>\$ (32,486.18)</u>

NOTE 2 – DEPOSITS, SECURITIES AND INVESTMENTS

District Policies and Legal and Contractual Provisions Governing Deposits

Custodial Credit Risk for Deposits State law requires governmental entities to contract with financial institutions in which funds will be deposited to secure those deposits with insurance or pledged securities with a fair value equaling or exceeding the amount on deposit at the end of each business day. The pledged securities must be in the name of the governmental entity and held by the entity or its agent. Since the District complies with this law, it has no custodial credit risk for deposits.

Foreign Currency Risk The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit by not participating in foreign currency transactions.

District Policies and Legal and Contractual Provisions Governing Investments

Compliance with the Public Funds Investment Act

The **Public Funds Investment Act** (Government Code Chapter 2256) contains specific provisions in the areas of investment practices, management reports, and establishment of appropriate policies. Among other things, it requires a governmental entity to adopt, implement, and publicize an investment policy. That policy must address the following areas: (1) safety of principal and liquidity, (2) portfolio diversification, (3) allowable investments, (4) acceptable risk levels, (5) expected rates of return, (6) maximum allowable stated maturity of portfolio investments, (7) maximum average dollar-weighted maturity allowed based on the stated maturity date for the portfolio, (8) investment staff quality and capabilities, (9) and bid solicitation preferences for certificates of deposit.

**Bandera County River Authority and
Groundwater District
Notes to the Financial Statements
September 30, 2016**

Statutes authorize the entity to invest in (1) obligations of U.S. Treasury, certain U.S. agencies, and the State of Texas. (2) certificates of deposit, (3) certain municipal securities. (4) money market savings accounts, (5) repurchase agreements, (6) bankers acceptances. (7) mutual funds, (8) investment pools, (9) guaranteed investment contracts, (10) and common trust funds. The Act also requires the entity to have independent auditors perform test procedures related to investment practices as provided by the Act. The District is in substantial compliance with the requirements of the Act and with local policies.

Additional polices and contractual provisions governing deposits and investments are specified below:

Credit Risk To limit the risk that an issuer or other counterparty to an investment will not fulfill its obligations the District limits investments to depository bank certificates of deposits and state sponsored investment pools.

Custodial Credit Risk for Investments To limit the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in possession of an outside party the District requires counterparties to register the securities in the name of the District and hand them over to the District or its designated agent. All of the securities are in the District's name and held by the District or its agent.

Concentration of Credit Risk To limit the risk of loss attributed to the magnitude of a government's investment in a single issuer, the District investments in both depository bank certificates of deposits and state sponsored investment pools.

Interest Rate Risk To limit the risk that changes in interest rates will adversely affect the fair value of investments, the District requires the investment portfolio to have maturities of less than one year on a weighted average maturity basis.

Foreign Currency Risk for investments The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment by not investing in foreign currencies.

NOTE 3 – DUE FROM OTHER GOVERNMENTS

This balance represents taxes and penalty and interest that were collected by the Tax Assessor-Collector, before September 30, 2016, but not remitted to the District.

NOTE 4 – PENSION PLAN OBLIGATIONS

The District's employees do not participate in a public retirement system, but are covered by Social Security.

**Bandera County River Authority and
Groundwater District
Notes to the Financial Statements
September 30, 2016**

NOTE 5 – CAPITAL ASSET ACTIVITY

Capital asset activity for the twelve months ended September 30, 2016, was as follows:

	Beginning Balances	Increases	Decreases	Ending Balances
<u>Governmental activities:</u>				
<i>Capital assets not being depreciated:</i>				
Land	\$ 150,000	\$ -	\$ -	\$ 150,000
Total capital assets not being depreciated	<u>150,000</u>	<u>-</u>	<u>-</u>	<u>150,000</u>
<i>Capital assets being depreciated:</i>				
Buildings and Improvements	172,083	-	-	172,083
Vehicles	99,504	14,797	-	114,301
Monitoring Wells & Equipment	150,326	4,275	-	154,602
Total capital assets being depreciated	<u>421,914</u>	<u>19,072</u>	<u>-</u>	<u>440,986</u>
Less accumulated depreciation for:				
Buildings and Improvements	25,812	4,302	-	30,115
Vehicles	71,262	8,403	-	79,665
Monitoring Wells & Equipment	74,967	16,020	-	90,988
Total accumulated depreciation	<u>172,042</u>	<u>28,726</u>	<u>-</u>	<u>200,767</u>
Total capital assets being depreciated, net	<u>249,872</u>	<u>(9,653)</u>	<u>-</u>	<u>240,218</u>
Governmental activities capital assets, net	<u>\$ 399,872</u>	<u>\$ (9,653)</u>	<u>\$ -</u>	<u>\$ 390,218</u>

Required Supplementary Information

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2016**

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Revenues:				
Property taxes	\$ 697,341.24	\$ 699,000.00	\$ 699,000.00	\$ (1,658.76)
Property taxes penalty & interest	10,220.01	-	-	10,220.01
Interest income	781.61	600.00	600.00	181.61
Permits and deposits	14,000.00	9,500.00	9,500.00	4,500.00
Non Compliance Penalties	-	-	-	-
USGS Gauge Station	6,800.00	6,800.00	6,800.00	-
Water analysis	6,159.72	3,500.00	3,500.00	2,659.72
Misc	794.50	4,000.00	4,000.00	(3,205.50)
Total revenues	<u>736,097.08</u>	<u>723,400.00</u>	<u>723,400.00</u>	<u>12,697.08</u>
Expenditures:				
Service operations:				
Appraisal District	16,453.81	14,800.00	17,300.00	846.19
Bonds & Insurance	6,205.00	6,860.00	7,090.00	885.00
Building Maintenance	14,364.29	15,000.00	15,000.00	635.71
Dues & Subscriptions	3,796.17	4,000.00	4,000.00	203.83
Education	9,683.85	10,000.00	10,000.00	316.15
Computer Software and Support	5,087.58	5,700.00	5,700.00	612.42
Small Equipment & Supplies	15,570.55	15,000.00	16,000.00	429.45
Furniture	496.53	500.00	500.00	3.47
Public Relations	3,056.89	4,000.00	4,000.00	943.11
Health Insurance	21,941.99	25,000.00	25,000.00	3,058.01
Website	76.62	600.00	600.00	523.38
Monitoring Units	300.00	500.00	500.00	200.00
Office Supplies	5,773.27	5,500.00	5,500.00	(273.27)
Office Rent	3,600.00	3,600.00	3,600.00	-
Payroll Tax	26,908.44	30,000.00	30,000.00	3,091.56
Postage	613.98	750.00	750.00	136.02
Professional Services	171,993.03	128,800.00	193,570.00	21,576.97
Salaries	329,431.27	345,410.00	345,410.00	15,978.73
Tax Collection Exp.	14,159.90	-	-	(14,159.90)
GMA Expense	2,198.25	5,000.00	5,000.00	2,801.75
Travel & Conferences	14,080.34	15,500.00	17,500.00	3,419.66
Employee Training	6,457.95	6,500.00	6,500.00	42.05
Utilities	13,337.60	14,000.00	14,000.00	662.40
USGS	16,580.00	16,580.00	16,580.00	-

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2016**

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Expenditures: (Continued)				
Vehicle Operations	19,171.99	14,000.00	20,000.00	828.01
Water Quality Project	6,083.20	6,500.00	6,500.00	416.80
Water Samples Exp.	6,159.45	6,500.00	6,500.00	340.55
Well Plugging	-	2,500.00	2,500.00	2,500.00
Illegal Dumping Litter Abatement	698.78	7,500.00	7,500.00	6,801.22
Medina River Cleanup	501.99	1,000.00	1,000.00	498.01
Brush Control	3,500.00	3,500.00	3,500.00	-
Well Logging Equip	4,757.58	1,250.00	4,250.00	(507.58)
Capital Outlay	14,796.76	-	15,000.00	203.24
Miscellaneous	349.90	1,400.00	1,400.00	1,050.10
ASR & Water Catchment Projects	-	1,250.00	1,250.00	1,250.00
Flood Awareness - Rainfall Project	-	4,400.00	4,400.00	4,400.00
	<u>758,186.96</u>	<u>723,400.00</u>	<u>817,900.00</u>	<u>59,713.04</u>
Excess (deficiency) of revenues over expenditures	(22,089.88)	-	(94,500.00)	72,410.12
Change in fund balance				
Fund balance:				
Beginning of the year	196,870.03	196,870.03	196,870.03	-
End of the year	<u>\$ 174,780.15</u>	<u>\$ 196,870.03</u>	<u>\$ 102,370.03</u>	<u>\$ 72,410.12</u>

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT**
Schedule of Delinquent Taxes Receivable
For the Year Ended September 30, 2016

LAST TEN YEARS ENDED SEPTEMBER 30,	TAX RATE	ASSESSED VALUE FOR TAX PURPOSES (in thousands)	BEGINNING BALANCE 10/1/15	CURRENT YEAR TOTAL LEVY	ENTIRE YEAR'S ADJUSTMENTS	TOTAL COLLECTIONS	BALANCE 9/30/16
2006 & Prior	Var	Var	\$ 6,095.86		\$ (38.41)	\$ 387.80	\$ 5,669.65
2007	.029307	1,192,778	1,222.16		(4.42)	101.17	1,116.57
2008	.029	1,369,933	1,349.75		(4.55)	167.30	1,177.90
2009	.026849	1,544,243	1,696.51		(4.58)	180.14	1,511.79
2010	.024000	1,683,008	2,595.20		(286.53)	704.66	1,604.01
2011	.023414	1,796,477	3,593.50		(222.72)	1,266.86	2,103.92
2012	.024474	1,842,781	5,512.61		(171.70)	2,643.11	2,697.80
2013	.026001	1,878,945	8,564.55		(222.15)	3,998.74	4,343.66
2014	.028058	1,903,192	14,657.38		(2.08)	7,022.25	7,633.05
Current	.034739	2,015,732		700,245.27	(3,646.87)	680,869.21	15,729.19
			<u>\$ 45,287.52</u>	<u>\$ 700,245.27</u>	<u>\$ (4,604.01)</u>	<u>\$ 697,341.24</u>	<u>\$ 43,587.54</u>