2016 ANNUAL REPORT

Panhandle Groundwater Conservation District

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TOP FIVE WATER-SAVING TIPS

Our Mission is to develop, promote and implement **water conservation, augmentation** and **management strategies** to protect water resources for the benefit of the **citizens**, **economy** and **environment** of the District.

1

SHOWERS USE ABOUT 2.1 GALLONS PER MINUTE.. TAKING A 5 MINUTE SHOWER, INSTEAD OF THE AVERAGE 10, YOU'LL SAVE 100 GALLONS OF WATER.

2

WATERING GARDENS & PLANTS EARLY IN THE MORNING OR AT NIGHT REDUCE THE CHANCE OF EVAPORATION.

3

WASH ONLY FULL LOADS AND USE "ECO" MODE WHEN POSSIBLE.

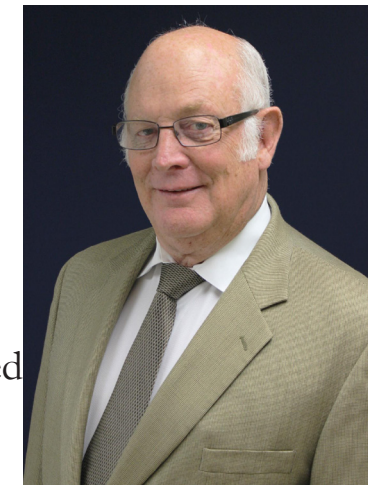
4

TURNING OFF THE FAUCET WHEN BRUSHING YOUR TEETH SAVES OVER 200 GALLONS PER MONTH!

5

LEAKING FAUCETS CAN WASTE 20 GALLONS OF WATER PER DAY - OR 7,000 GALLONS PER YEAR!

MANAGER'S ADDRESS



2016 was a rather typical year for the District. We started the year with another highly successful water conservation symposium where we heard from some 18 different speakers on a variety of topics. We had over 300 attendees and received good reviews from everyone. Another Symposium is planned for February of 2018.

With the assistance of INTERA hydrology firm we developed a meter information gathering tool called *Metermaid* that allows the field staff to collect meter location, production amount and an actual photo of the meter dial. Which in my opinion, will greatly enhance the reliability of our meter collection data. It also helps in the management and oversight of the field staff.

We are in the process of extending this technology to our winter level measurement data collection. This allows for the staff in the office and all of the field technicians in the field to see measurements collected in real time. This will improve our efficiency in the field and will allow the office staff to analyze the data alongside of the field technicians rather than a few days or weeks later.

We attended numerous meetings with our sister districts in the GMA 1 Joint planning process. Not only much of my time, but also significant time with our consultant Bill Mullican of Austin. It was decided to continue the 50/50 depletion management methodology. We held the required public hearings and received only positive comments on our approach. The finishing touches will be completed in late 2016.

The Board was presented with the annual reports on Study Areas in the summer of 2016 and no additions or deletions were made to the current delineations. Then in August, the District Staff reported on the Conservation Area process and the Staff indicated the results were not identifying the high pumping centers that was first envisioned in the rules. It was the Staff recommendation not to designate any additional Conservation Areas and have the rules Subcommittee to investigate where the problem areas need improvement.

Chairman Hardcastle appointed a new rules subcommittee to look at any additional rules that may need to be modified or changed. This committee will work through the winter to bring back before the full board in early 2017 their findings and recommendations.

With these issues and the Legislature starting in January of 2017, next year will be another interesting year for Panhandle Groundwater Conservation District.

BOARD OF DIRECTORS

Danny Hardcastle
President
Serving since 1997

Phillip Smith
Vice President
Serving since 1990

Chancy Cruse
Secretary
Serving since 2013

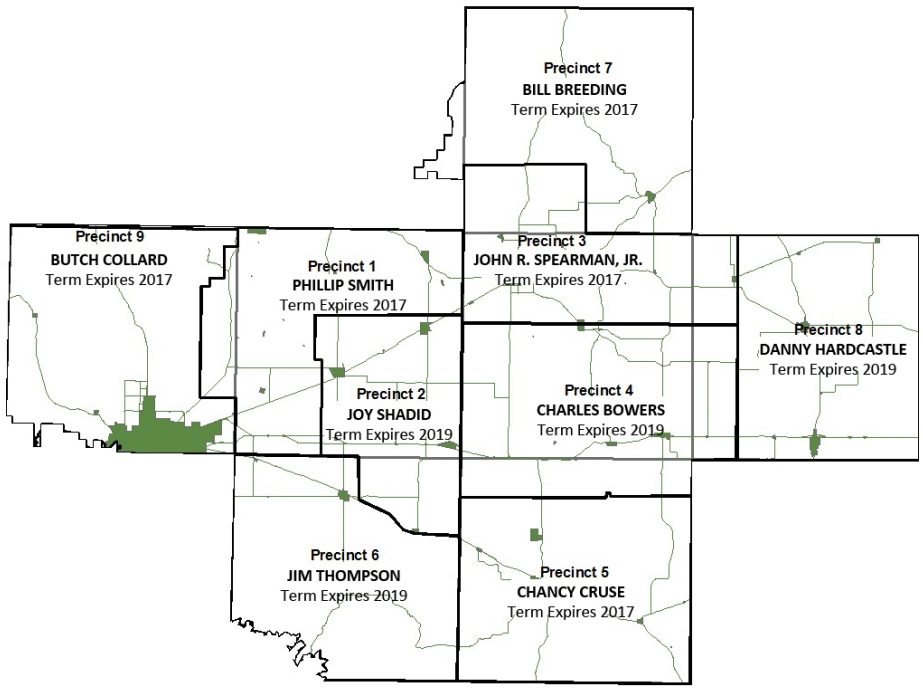
Charles Bowers
Director
Serving since 1990

Bill Breeding
Director
Serving since 2013

F. G. Collard
Director
Serving since 2010

Joy Shadid
Director
Serving since 2015

John R. Spearman
Director
Serving since 2000



Jim Thompson
Director
Serving since 1994

DESIRED FUTURE CONDITIONS

The main purpose of a management plan is to develop goals, management objectives, and performance standards that, when successfully implemented, will work together to achieve the adopted Desired Future Conditions (DFCs). Goals 2 through 13 directly and/or indirectly support Goal One. DFCs adopted for the Ogallala, Dockum, and Blaine aquifers by GMA #1 for the District are described below. A 50-year planning horizon was used in setting the DFCs. Throughout the joint planning process, the District actively worked with the other member districts and stakeholders within GMA #1 to determine the DFCs for each aquifer located within each district.

Management Objective 1.1

The cornerstone of the many programs and activities that have been developed and adopted in order to achieve the 50/50 DFC is the District's Rule 15, also referred to as the Depletion Rule, which contains the 50/50 Management Standard stating that 50 percent of the current saturated thickness will remain in 50 years. This 50/50 Management Standard is the tool by which the District will ensure that we meet or exceed the 50/50 DFC. Rule 15 states that the allowable rate of decline in the Ogallala Aquifer's saturated thickness annually is 1.25 percent. In order to ensure that the Management Objective of Rule 15 are being met, the District goes through an annual review process in order to identify and act upon areas that are exceeding the allowable decline rate of 1.25 percent of saturated thickness on an annual basis. Management Objective 1.1 is for the District to successfully undergo and complete the evaluation and review process required by Rule 15 no later than December 1 of each calendar year. The results of this process will be published in the District's Annual Report which, upon approval by the District Board of Directors, will be published on the District's website.

In order to complete Management Objective 1.1, the following Performance Standards will be met. Actions by the District Board of Directors that may result from this review include the adoption of production limits, drilling moratoriums, and installation of flow meters, as required.

Performance Standard

1.1 A	Winter Water Level Presented to Board of Directors	April 21, 2016	**Completed**
1.1 B	**Evaluate the sum of declines**	**Annual Decline** - July 14, 2016 **Cumulative Decline** - August 18, 2016	**Completed**
1.1 C	Determine non-exempt water pumping volumes annually and report to board	41,144 Acre Feet	**Completed**

Management Objective 1.2

The District will develop and maintain an integrated geodatabase system based on the District's Observation Well Network and computer mapping programs to annually track and evaluate current supplies by determining a baseline (1998) groundwater saturated thickness in the District. The baseline is utilized to track and review changes in water supplies.

Performance Standard

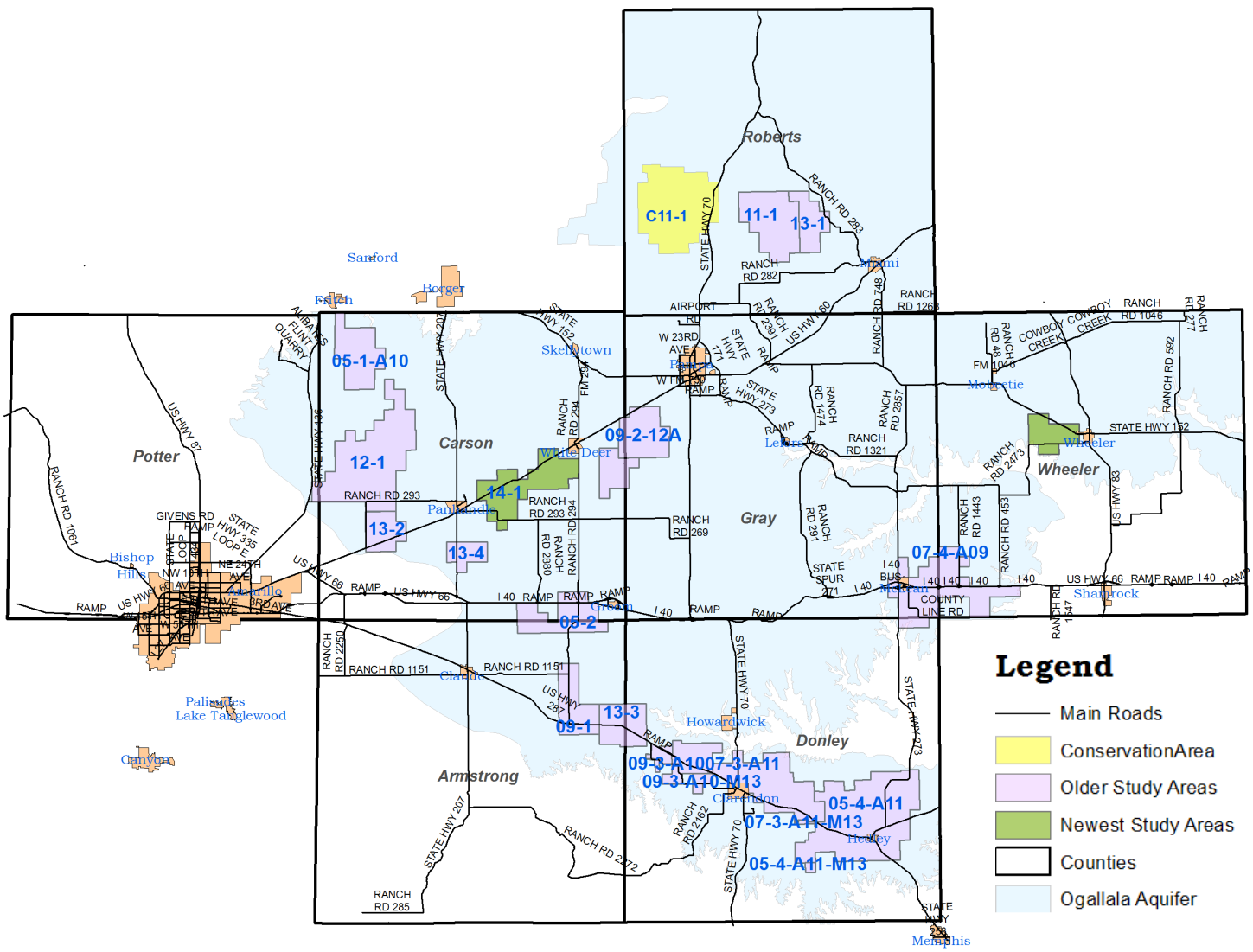
1.2 A	Annual Review of Depletion	July 2016 Newsletter	**Completed**
1.2 B	**Update saturated thickness map on District's webiste**	**http://pgcd.us/program/mapping Updated on 8/1/16**	**Completed**

Dockum and Blaine Aquifer Desired Future Conditions

Subsequent to adoption of the District's Management Plan in April of 2012, the Texas Water Development Board awarded a contract to INTERA, Inc., to execute a scope of work that will ultimately result in a major update to the Ogallala, Dockum, and Blaine aquifers in Texas. This study, referred to as the High Plains Aquifer System Groundwater Availability Model Update, or HPAS GAM Update, includes all of the Dockum and Blaine aquifers in the District. After significant discussion and consideration, the Panhandle GCD voted during a regular Board of Directors meeting on November 15, 2012, to both financially and technically participate in the HPAS GAM Update. As was discussed at the time, funding provided by the District, along with funding from the High Plains Underground Water Conservation District No. 1 and the North Plains Groundwater Conservation District, was dedicated in part so that the HPAS GAM Update could provide additional research on the Dockum Aquifer (see letter to TWDB dated September 27, 2012).

The preliminary HPAS GAM results were presented to the PGCD Board of Directors on December 9, 2015. The preliminary results were also sent to TWDB and were reviewed for final publication. TWDB approved the HPAS GAM study in the summer of 2016. The results are being used in GMA 1's planning of Desired Future Conditions and for groundwater models. Although not directly applicable to the subject of this memorandum, it is also noted that during the District's August 20, 2014, meeting, in part due to preliminary results from the HPAS GAM Update, the District Board of Directors voted unanimously to declare that for joint-planning purposes, the Blaine Aquifer be declared as non-relevant. As a result, there will no longer be an adopted desired future conditions for the Blaine Aquifer. Further, in the next District Management Plan update (scheduled for 2017), no desired future condition will be included for the Blaine Aquifer.

Study & Conservation Areas as of December 2016



MANAGEMENT OF GROUNDWATER USE

Throughout our history, the District has operated on the core principle (or goal) that groundwater should be used as efficiently as possible for beneficial purposes. In order to achieve this goal, the District maintains a qualified staff to assist water users in protecting, preserving, and conserving groundwater resources. Since our inception the Board of Directors have and continue today to base their decisions on the best data available to treat all water users as equally as possible. Once data is collected, the District utilizes a wide variety of forums to provide important information to water users throughout the District, so that sound decisions regarding the efficient use of groundwater can be made. The Observation Well Network is continuously reviewed and maintained in order to monitor changing storage conditions of groundwater supplies within the District. The District will continue to undertake and cooperate with technical investigations of the groundwater resources within the District. The following management objectives and performance standards have been developed and adopted to collect needed information, disseminate information, and provide opportunities throughout the District's Agricultural Water Conservation Equipment Loan Program to ensure the efficient use of groundwater.

Management Objective 2.1

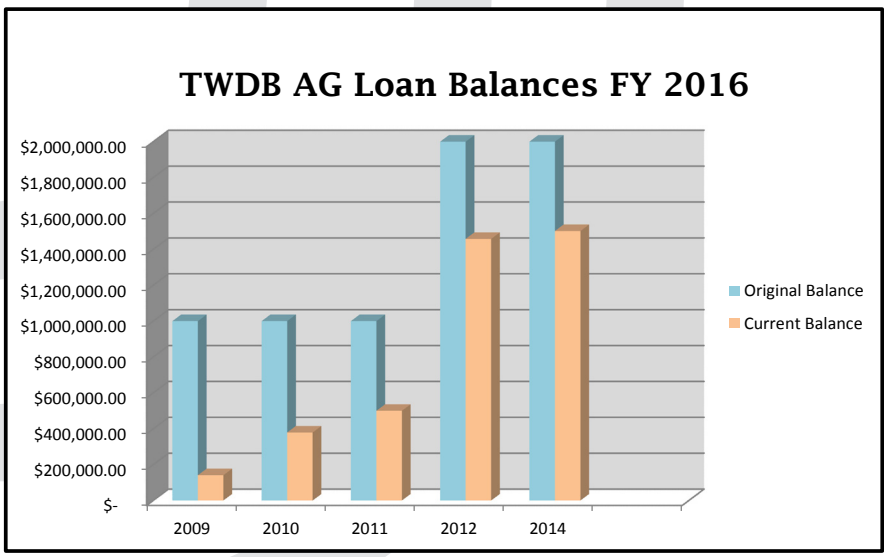
An Observation Well Network with approximately 850 water wells located throughout the District is continuously maintained and monitored. Wells in the Network produce groundwater from the Ogallala Aquifer, as well as the Dockum and Blaine Aquifers. Water levels are measured by District staff in as many wells as possible, with a goal of measuring at least 90 percent of wells in the Network each year. This data is then processed for quality assurance/quality control, entered into the District's Geodatabase, analyzed, mapped, and used to make decline calculations and update historic trend lines (hydrographs).
Water level measurements from wells in the District's Observation Well Network are used to generate annual depletion maps. The District will strive to install additional monitoring wells in locations when necessary in order to evaluate the effects of high-impact pumping operations as necessary. Furthermore, the District will install and maintain automatic data gathering equipment on wells, as needed.

Performance Standard

2.1 A	Measure Water Levels in at least 90 Percent of the Wells in the District's Network	Measured 864 of 897 or 96 Percent by April 8, 2016	Completed
2.1 B	Annual Depletion Maps	Published in the July 2016 Panhandle Water News	Completed
2.1 C	IRS Depletion Map	December 23, 2015	Completed

Management Objective 2.2

The District encourages efficient groundwater use by continued promotion of Low Energy Precision Application (LEPA), low pressure and other efficient sprinkler systems, which will decrease the utilization of less efficient row irrigation techniques. This will be accomplished by increasing the use of the District's Agricultural Water Conservation Equipment Loan Program, as long as Texas Water Development Board Agricultural Loan Program funds are available and economically competitive. The District will enhance awareness of the loan program by publicity releases in local newspapers and the PWN. The District website will have information on availability of funds and guidelines for applicants. The District will strive to provide timely responses to loan applicants.



Performance Standard

2.2 A	Ag Loan Reminder	In Panhandle Water News - October 2015 & April 2016	Completed
2.2 B	Review Ag Loan Applications within 30 Days.	Granted 7 Loans for a Total of $602,621.79	Completed

Management Objective 2.3

The District encourages the efficient use of groundwater by disseminating educational information regarding current best management practices and trends in water conservation for agricultural, municipal, and industrial applications. The District publishes a newsletter quarterly that contains resources for water users interested in water conservation. In addition, the District also attends and participates in public events throughout the District including the annual Amarillo Farm and Ranch Show as often as possible.

Performance Standard

2.3 A	Publish Panhandle Water News Quarterly	October 2015, January, April & July 2016	Completed
2.3 B	Attend Farm & Ranch Show Annually	12/1/2015-12/3/2015	Completed

Management Objective 2.4

In order to ensure that the Board of Directors and District constituents are aware of and informed on the most current information on water conservation, groundwater management, and emerging policy issues related to groundwater resources, District staff actively participate in a broad grouping of professional associations that focus on water resource issues. District staff will report at the next available regularly scheduled Board of Directors meeting in the General Manager's Report on any activities resulting from participation with the following active affiliations: Texas Alliance of Groundwater Districts (TAGD), Texas Water Conservation Association (TWCA), Groundwater Management Districts Association (GMDA), and Alliance for Water Efficiency.

Performance Standard

2.4 A	Attend & Participate in 80% of TAGD, TWCA & GMDA Meetings.	Attended & Participated in 100% of all Meetings.	Completed

MANAGEMENT OF GROUNDWATER USE CONT.

Management Objective 2.5

The District has adopted rules that require approved flow meters on all new and replacement wells. Flow meters are also required in certain instances for wells in designated study areas and for all non-exempt wells in designated conservation areas. The District believes that when a water user understands the volume of groundwater being used, they are better able to adopt best management practices that result in the efficient use of groundwater. Therefore the District is committed to continuing the program focused on requiring flow meters for certain wells, flow meter monitoring, and data collection and analysis of water use by crop and irrigation type. To achieve this objective the District will read and record flow meter data from 90 percent of the installed flow meters in the District annually. Study Area and Conservation Area meters will be read at least annually, however may be read on a monthly or quarterly basis as needed. The information from the District's metering program will be published in the District's Annual Report.

Performance Standard

2.5 A	**Flow Meter Data for at least 90% Annually**	**714 out of 726 Meters were Recorded; 98%**	**Completed**
2.5 B	**Fix Bad Flow Meters within 14 Days of Notice and Record in Spreadsheet**	**All Meters were Serviced in a Timely Manner.**	**Completed**
2.5 C	**Review and Prepare Revised Estimates to TWDB Annual Agriculture Water Estimates**	**Reported to TWDB on 03/15/16**	**Completed**

This past year, the District employed the help of Intera Geoscience and Engineering Solutions to update our meter data collections process.

Intera project engineers along with PGCD staff were able to develop a real time data collection and entry web application named MeterMaid (MM). MM can be used by PGCD Field Technicians on any smartphone, tablet or PC to access a web page that connects directly to the server at the PGCD office. The web page allows technicians to capture and submit meter readings, photographs of the meters, GPS location, current crop(s) being irrigation, current GPM, actual time and date of the reading and any other notes for each meter. MM also provides a complete, up-to-the-minute reading history of each meter to the technician right there in the field. Once all the data is submitted it is automatically saved to the server. The PGCD administrative staff can then review all data captured from individual meters. After the meter data is revised and verified to be accurate it is permanently entered into the District's database.

The new MM process allows PGCD to verify and document the accuracy of each meter reading through meter pictures, GPS, time and date recordings without having to physically back track and retrace strps in the field. Having all of this information in one program allows for more user-friendly data analysis and eliminates entering data multiple times. This saves the District time and more importantly, money.

The District began using MM in the field in June of 2016. PGCD will continue to refine the Meter Maid program with plans to expand the process into all fields of data collection and analysis in the near future.

GROUNDWATER WASTE PREVENTION

Another core principle adopted by the District since its inception in order to conserve groundwater resources of the region is by controlling and preventing the waste of groundwater. The following management objectives and performance standards have developed and adopted as an integral component of the District's umbrella goal to achieve the 50/50 Management Standard.

Management Objective 3.1

The District is continuously working to take positive and prompt action to identify and address all reported wasteful practices and instances of waste located by District staff within the District. This effort involves the following actions to be taken by the District.

- Report each complaint to the landowner and/or operator within two working days.
- Resolve the complaint and note the corrective action taken.
- Report resolution of each complaint to the landowner/operator and to the Board at the next regularly scheduled meeting during the General Manager's Report.

Performance Standard

3.1 A	All Complaints of Waste will be Recorded, Investigated and Reported to the Land Owner within 4 Business Days	One Complaint was Recorded, Investigated and Reported to the Land Owner in a Timely Manner.	Completed
3.1 B	Report Each Complaint to the Board with Staff Recommendations for Resolution	Complaint was Reported to the Board, however, it was already resolved at that time.	Completed

DROUGHT CONTINGENCY PLAN

In order to address drought conditions, the District has implemented a number of programs that are designed to positively support constituents in the District when drought conditions exist. While three of these efforts are described below in Management Objectives 4.1 - 4.3, others are documented elsewhere in the management plan. For example the District operates a state-permitted precipitation enhancement program. This program is described below in Goal 8.

Management Objective 4.1

Conduct drought contingency planning by ensuring that drought contingency plans required in all Multiple Well Permits issued by the District are included in the permit applications and that they are administratively complete. We had one Multiple Well Permit issued in 2016, however it was determined in the application review process that a drought contingency plan was counter-productive to the Multiple Well Permit in question.

Performance Standard

4.1 A	Ensure Drought Contingency Plans for Multiple Well Permits.	One Agriculture Multi Well Permit was issued for 2016. It was determined as part of the Review Process that a Drought Contingency Plan was Counter-Productive for the Permit in Question.	Completed

Management Objective 4.2

In order to provide ongoing information regarding water conditions in the District, establish and maintain links to National Oceanic and Atmospheric Administration Drought Monitor indices are on the District Website.

Performance Standard

4.2 A	Provide a link to the NOAA Drought Monitor	http://pgcd.us/links/	Completed

JOINT MANAGEMENT EFFORTS

The Canadian River Municipal Water Authority (CRMWA) supplements member city allocations of groundwater with supplies from Lake Meredith. The CRMWA system is the largest conjunctive use water provider in the State of Texas, providing a combination of groundwater and surface water to 11 member cities. All current CRMWA groundwater supplies are produced within the boundaries of the District. The Greenbelt Water Authority (GWA) is the second surface water user with supplies inside the boundaries of the District.

Management Objective 5.1

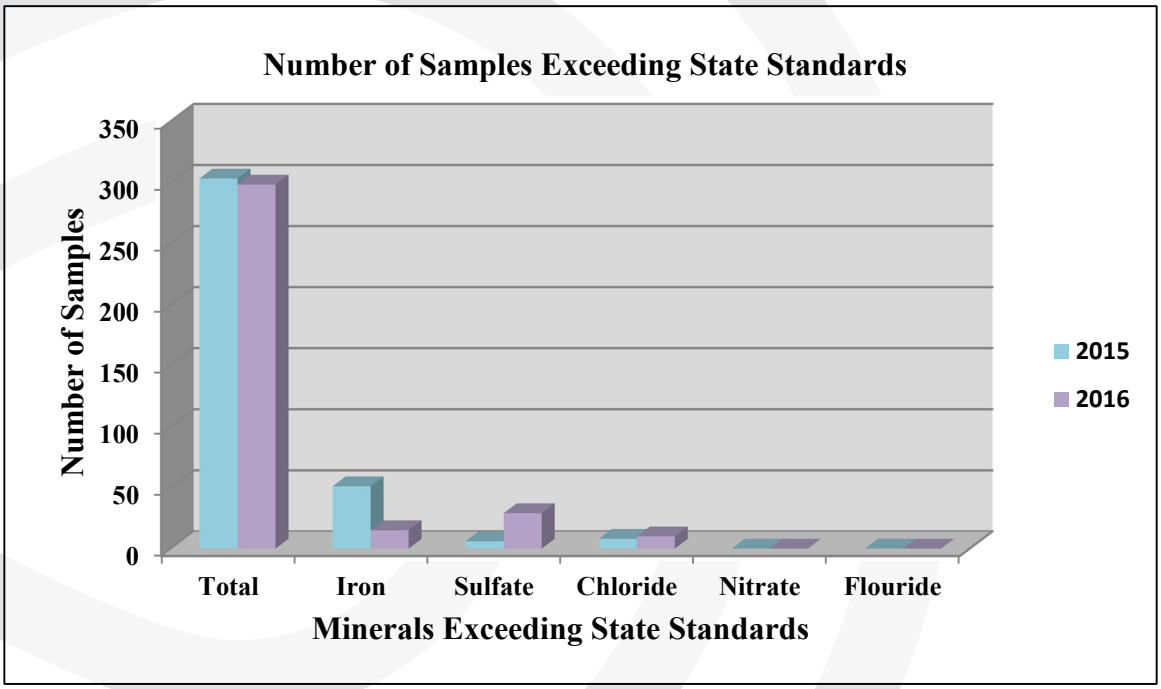
In order to continually monitor the impact of declining surface-water availability on groundwater resources within the District, the General Manager participates in the Panhandle Water Planning Group (PWPG) with the two surface-water entities currently operating within the District. This activity helps facilitate regular communication and cooperation with regards to conjunctive use issues in the District.

Performance Standard

5.1 A	The District Manager will Participate in 75% of PWPG Meetings and Activities.	Hearing attended on 5/17/16 on the Regional Water Plan	Completed

NATURAL RESOURCE ISSUES

As part of the umbrella goal of achieving the adopted DFCs, the District recognizes that the protection of water quality is equally as important as working to ensure adequate water quantity. In order to protect the District's most important natural resource, the abundant, high quality groundwater resources, the District has for many years maintained and operated a water quality sampling program sampling different areas each summer which yields a complete set of data biennially. In addition to the District's water quality program, another aspect of the District's efforts to protect natural resources is to monitor the possible impacts of groundwater pumping on White Deer Creek.



Management Objective 6.1

In order to control and prevent the contamination of groundwater, the District maintains and works to expand the groundwater quality monitoring. As part of this effort, an annual sampling program will be conducted within the District's Water Quality Network. The objective will be to sample at least 40 percent of the wells in the District's Water Quality Network by September 1st of each year. Also, upon request the District will conduct analysis of water within current District sampling capabilities, including sites near oil and gas industry injection well sites.

Performance Standard

6.1 A	Sample 40% of the Water Quality Network by September 1 Each Year	298 Total Samples were Collected by the District and Tested	Completed
6.1 B	Record Water Quality Data in Database within 30 Days of Sampling	420 Total Water Samples (298 by the District and 122 Brought in by District Individuals) were Collected and Recorded in the Database	Completed

Management Objective 6.2

The original idea behind taking measurements of White Deer Creek was to monitor any effects of groundwater depletion for municipal supplies. Analysis of the data indicates there is currently no detectable influence from the groundwater extraction. A visit was made to the sites by staff hydrogeologist Steven Shumate in November of 2015. He observed numerous seeps upstream of the Hayhook site, and also recommended a better measuring location on the stream. The measuring point previously being used was upstream of the bridge and involved considerable backwater. The new point is downstream (North) of the bridge, mitigating the effects of backwater. Frequency of measurements was discussed with the district's consulting geoscientist, Bill Mullican. It is determined that semi-annual measurements during early spring and late fall will be sufficient until the nearby municipal pumping of groundwater resumes.

Performance Standard

6.2 A	Record Stream Flow Measurements Bi-Monthly	Recorded 1 Measurement	Incomplete
6.2 B	Prepare and Include Assessment of Impacts on White Deer Creek	Included in Above Paragraph	Completed

IMPORTANCE OF CUSTOMER SERVICE

Management Objective 7.1

Customer service is of great importance to the Board and Staff of the District. As detailed in the corresponding performance standards, the District will continue to provide timely response to customer assistance requests in the following areas:

- Pump flow tests.
- Processing of well drilling permits.
- Review and revision of District Rules, as necessary, to incorporate revisions required by new legislation.
- Well camera recordings.

Customer service and operating efficiency are important to the District and is our top priority. When producers request pump flow tests, processing of well drilling permits and well camera recordings, the PGCD staff works hard to ensure all requests are completed in a timely manner. The District also stays on top of reviews and revisions of District Rules as necessary.

Performance Standard

7.1 A	Provide Requested Flow Tests within 2 Working Days & Enter into Database	All Requests Completed	Completed
7.1 B	Manager's Action on Well Drilling Permits within 10 Working Days of Approval	All Sent in a Timely Manner	Completed
7.1 C	Provide Well Camera Service within 2 Working Days & Archive DVD to Library	All Requests Completed	Completed

PRECIPITATION ENHANCEMENT

Texas Water Code §36.1071(a)(7) requires groundwater conservation districts to include in the management plan a goal addressing precipitation enhancement. The District has one of the longest continuous precipitation enhancement programs in the State of Texas.

Management Objective 8.1

The District will continue to operate its Precipitation Enhancement Program throughout the planning horizon of this management plan. The program will operate within budget. A rain gauge network will be maintained and monitored to check results. Flight records and radar data will be collected and archived. The program will abide by Texas Department of Licensing and Regulation requirements for testing, monitoring, and reporting in order to ensure compliance with permit guidelines. Results of the District's Precipitation Enhancement Program will be presented to the Board of Directors and included in the Annual Report each year.

Performance Standard

8.1 A	Annually Conduct Program from April to September 30	April 1 - September 30	Completed
8.1 B	Calculate the Baseline Costs for the Program by December 1 of Each Year	$0.04/acre	Completed
8.1 C	Collect and Record Rain Gauge Readings at Least Bi-Monthly	October 2015, January, March, April, May, June, July, August and September 2016	Completed
8.1 D	Annually Maintain all Flight Records & Archived Data on all Precipitation Enhancement Operations and Make Available for Review Upon Request		Completed
8.1 E	Provide Required Rainfall Monitoring, Water Quality Testing & Other Require Reports to Texas Department of Licensing	2015 Report Provided (01/26/2016)	Completed

Panhandle Groundwater Conservation District completed its 17th year of precipitation enhancement. This was the busiest season according to operational days since 2010 with a total of 29 seeding days. The first seeding flight occurred on April 16, 2016 and the final flight was on August 28, 2016. The season started off and continued through mid-June with a pretty average season. Then at the end of July and through August the upper level pattern changed to allow shortwaves to regularly move across the Texas Panhandle. This allowed many dynamic features including fronts and trough boundaries to help create lift for convection. In addition to these features the Panhandle was supplied with continued moisture from either southeasterly flow from the Gulf of Mexico or southwesterly flow which brought tropical moisture from storms in the Pacific Ocean. The season ended with 38 total seeding flights, 14 reconnaissance flights, 763 glaciogenic flares burned and 80 hygroscopic flares. While drought in recent years has been a concern for the Panhandle this year the majority of the Panhandle remained drought free. Rainfall throughout the months in the counties within PGCD remained at normal or above for all of the months except June when several of the counties saw below average rainfall. Rainfall totals through September show all the counties at or above average for total rainfall for the year

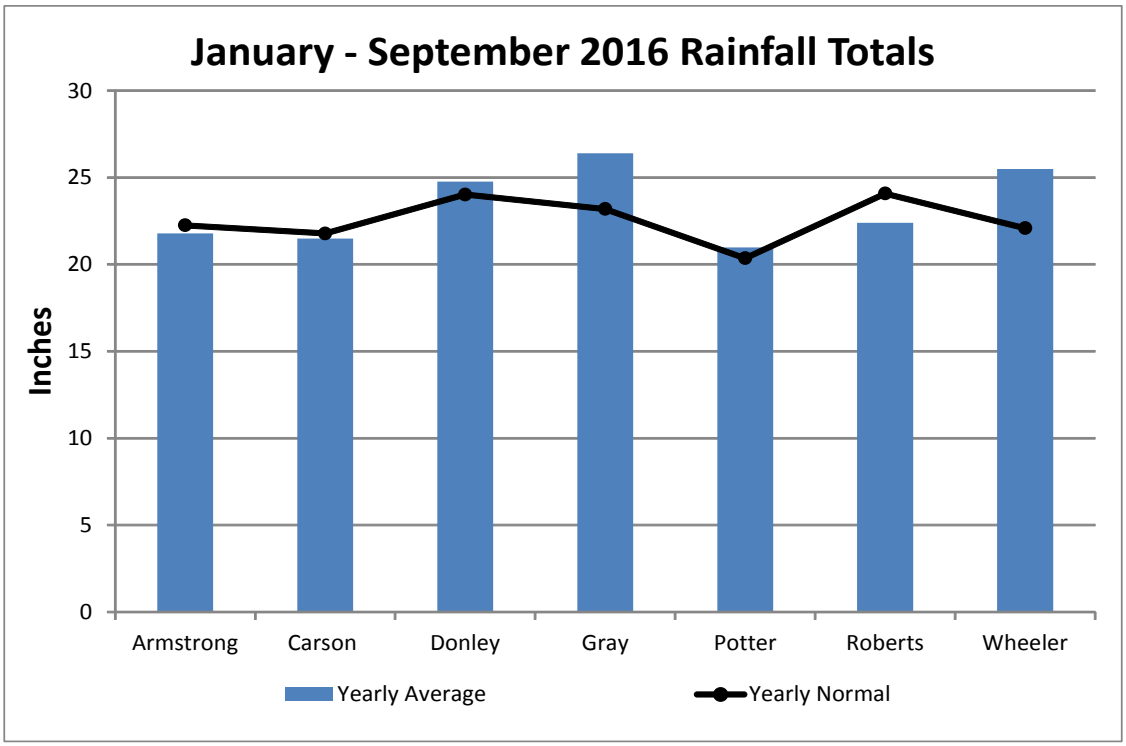
Management Objective 8.2

Educate the public with regards to the benefits of the District's Precipitation Enhancement Program through informational articles in the PWN and local newspapers, public presentations, and Program summaries in the District's Annual Report each year.

Performance Standard

8.2 A	Publish an Article about Precipitation Enhancement in at least 2 of the Quarterly Issues of PWN	October 2015, January and April 2016	Completed
8.2 B	Provide at Least 2 Articles about the Program to all Local Newspapers	Precipitation Enhancement Article (4/30/16 Pampa News), Weekly Rain Report in White Deer Newspaper	Completed
8.2 C	At Least 2 Presentations Annually to a Public or Civic Group	GMDA Annual Meeting (01/06/16), Pampa Rotary Club (4/13/16)	Completed
8.2 D	Complete the Program Summary Report and Include in District's Annual Report Each Year	See Table Below	Completed

2016 Program Summary	
Number of Seeding Days	29
Number of Seeding Missions	238
Number of Recon Flights	14
Total Flight Hours in Both Aircrafts	123
Total Flares Used	843
Total Program Cost	$184,612.54



CONSERVATION EDUCATION

Texas Water Code §36.0015 states, in part, that, "In order to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater.…Groundwater conservation districts may be created…are the state's preferred method of groundwater management through rules developed, adopted, and promulgated by a district in accordance with the provisions of this chapter." It is noteworthy that in this overview section of Texas water law addressing groundwater management that "conservation" is the first action groundwater conservation districts are to pursue. The 50/50 Management Standard can only be achieved if our groundwater resources are conserved in a manner that ensures adequate water resources will be available for future generations. While water conservation is a fundamental component of many of the District's programs, the following represent management objectives most focused on water conservation.

Management Objective 9.1

Continue and expand, when possible, the District's Groundwater Conservation Education Program. District staff will make presentations on the importance of water conservation to at least 10 civic organizations and in at least 80 percent of the schools within the District annually. Annually, the District will award at least three college scholarships to students in the District based on participation in a water conservation essay competition. The District will maintain an Internet information page and launch an aggressive conservation education initiative called "Water Warriors", as well as work with other entities to present an ongoing Panhandle area water conservation symposium. 2016 marked our 3rd Biennial Water Conservation Symposium, with plans for the 4th to take place in 2018.

Performance Standard

9.1 A	Annually make at least 10 Civic Education Presentations.	Wheeler Co. Ag Day (10/20/15), WOWW Science Collaborative (11/3/15), GMDA Annual Meeting (1/6/16), Carson Co. Ag Day (2/11/16), WATTS Conference (3/22/16), Donley Co. Health Fair (4/12/16), Pampa Rotary Club (4/13/16), Groom Library (7/29/16), H2O4Texas Town Hall Meeting (8/1/16), Panhandle Rotary (8/5/16)	Completed
9.1 B	Annually make 35 Elementary School Presentations	Presented to a total of 38 Schools within the District	Completed
9.1 C	Annually Provide at least 3 Scholarships	Winners: 1st Place - Jordan Pohnert, 2nd Place - Riley Graham, 3rd Place - Evelyn Baylon	Completed
9.1 D	Water Warrior Presentation to at least 3 Public School Settings Outside of School	Wheeler Co. Ag Day (10/20/16), Carson Co. Ag Day (2/11/16), Donley County Health Fair (4/12/16)	Completed

RAINWATER HARVESTING

Rainwater harvesting is becoming an increasingly important strategy for meeting water supply needs, especially in the more rural areas of Texas. While rainwater harvesting is one of the many topics included in the District's water conservation education programs, the following management objective and performance standards are specifically focused on rainwater harvesting. In an effort to push for more rainwater harvesting systems in our area, PGCD introduced a new Rainwater Harvesting Rebate Program that allows residents within the District to apply for up to 50 percent of the total project cost or apply for a loan with a low interest rate to be paid out over five years. Requirements regarding system details can be found on our website or by calling the District.

Management Objective 10.1

The District has established and maintains a rainwater harvesting system and provides educational tours to the public regarding the many benefits of the system. Tours of the District office rainwater harvesting system are provided upon request. A link to an informational page highlighting the rainwater harvesting system will be maintained and updated as necessary on the District's website. In addition, a link to the TWDB website on rainwater harvesting will also be maintained on the District's website.

Performance Standard

10.1 A	**Webpage Highlighting the District's Rainwater Harvesting System and Information about Tours**	**http://pgcd.us/programs/**	**Completed**
10.1 B	Provide a Link to TWDB Rainwater Harvesting Webpage	http://pgcd.us/links/	**Completed**

RECHARGE ENHANCEMENT

The District has conducted or helped facilitate several recharge projects in recent years, one of which is an ongoing TWDB effort regarding the recharge characteristics of playa lakes. The District will continue to work with the TWDB on recharge projects as long as the Legislature continues to fund their activities.

Management Objective 11.1

Surface water collected in the thousands of playa lakes on the High Plains is the primary source of recharge to the Ogallala Aquifer. During the 81st Texas Legislature, funding was provided to the Texas Water Development Board to conduct long term, scientific research on potential mechanisms to enhance recharge to the Ogallala Aquifer. The scope of the Ogallala Aquifer Recharge Study is still being developed. However, the District recognizes the importance of studies such as this with respect to enhancing the economic sustainability of this precious natural resource. Therefore, it is the objective of the District to have an active role throughout the conduct of all aspects of the Ogallala Aquifer Recharge Study and to have district representatives participate in at least 50 percent of all TWDB scheduled meetings that are held in the region. It is noted however, that funding for this research project has been severely reduced by the 82nd Texas Legislature, and thus the level of effort that will proceed at this time is still unknown. The District is committed to continuing its participation in this effort at whatever level current funding will allow.

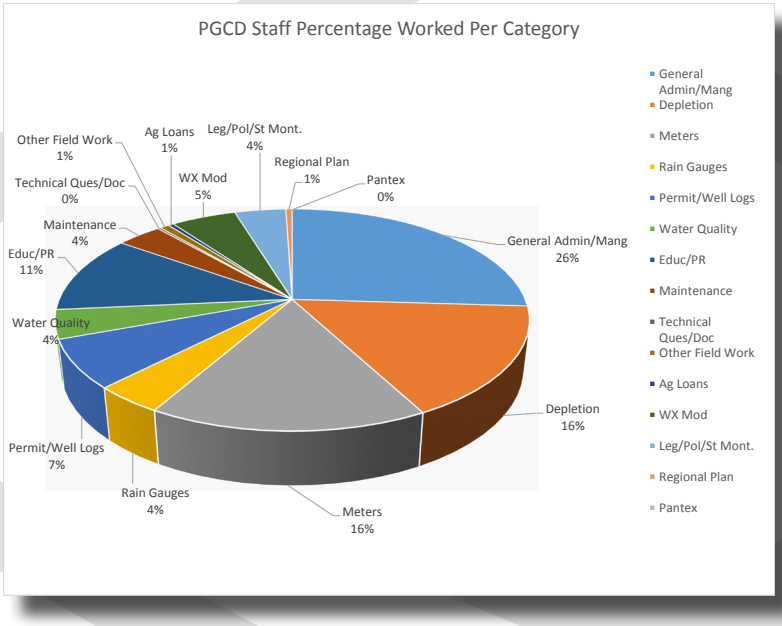
Performance Standard

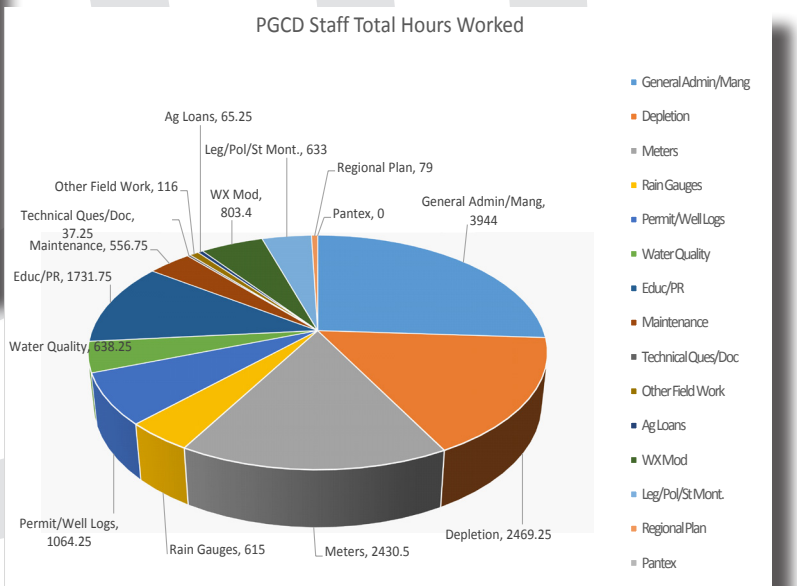
11.1 A	**Document the Number of TWDB Meetings Held in the Region & Number Attended by PGCD Staff**	**None**	**Completed**

2015-2016 EXPENDITURES

Accounting Fees	$	6,142	Payroll Expenses	$	193.74
Appraisal District Fees	$	27,277.52	Payroll Taxes	$	39,524.27
Board Expense	$	20,021.34	Postage	$	2,775.09
Capital Operating Improvements	$	43,244.33	Printing	$	9,077.61
Capitol Expense	$	6,681.23	Professional Services	$	6,391.17
Car Expense	$	23,232.29	Regional Planning	$	16,522.01
Contract Labor	$	200.00	Repairs & Maintenance	$	7,880.63
Dues	$	5,893.82	Retirement	$	28,649.75
Education/Information	$	37,944.65	Salaries	$	501,935.75
Field Equipment Assets	$	87,572.86	Scholarships	$	1,125.00
Field Supplies	$	3,683.18	Service Charges	$	252.00
Grant Fund	$	3,850.00	Tax Increment Payment	$	4,210.00
Insurance & Bonds	$	67,331.69	Special Studies	$	47,580.19
Janitorial	$	4,960.00	Travel & Training	$	30,404.47
Meters	$	24,867.88	Utilities	$	18,664.53
Miscellaneous	$	1,991.57	Water Quality	$	3,038.62
Office Supplies & Software	$	16,794.70	Weather Modification	$	184,612.54
Total				$	**1,204,526.43**

TIME TRACKING





WELL PERMITTING & REGISTRATION

It is important to remember that all water wells drilled to the water table MUST have a completed application BEFORE it is drilled. It is as simple as giving the District a call before drilling. We completed the second year in which changes were made to the permit and registration forms. Whether or not a proposed well is in a study area will determine which "permit" form is used. PGCD now has two forms for the permitted wells; Single Water Well Drilling: Application for PERMIT to be used if in a Study Area and Single Water Well Drilling: Application for PERMIT to be used if not currently in a designated study area at the time of applying for and ultimately drilling the water well. The goal of two applications is to further inform the landowner if they are currently in a study area or that the area could be designated as a study area in the future if production limits are exceeded with the possibility of going into a conservation area if production amounts continue to exceed the allowable limit which could result in reductions of the maximum annual production rate for this applied-for well.

This year also completes the second year where total contiguous acres were added to the two Single Water Well Drilling PERMIT forms. This adds the "Total Production", which multiplies the total contiguous acres by 4.5 gallons per minute production, allowed by the rules. Any other water wells already on the contiguous acres is added, then the production is subtracted from the total production allowed in order to make sure no more wells are drilled that is allowed for from the total acreage production allowable.

Having added the test-hole form as page two (2) to both the Single Water Well Drilling Permit form and the Exempt Water Well Registration form has worked out very well. These forms are now 3 page forms with the test-hole page used only if applicable. This was done to streamline the permitting process.

The following are the total water wells permitted or registered with Panhandle Groundwater District for the 2015-2016 fiscal year and the four previous years. This year well applications totaled 204. The registrations and permits are received by fax, mail or email and are often brought in by the landowner. Drillers already have the forms and many landowners print the forms off of the website.

Wells drilled on more than 10 acres and pumping less than 17.4 gallons per minute require a registration. The three most common water well registrations are for domestic, stock and rig supply wells. Rig supply wells generally produce more than 17.4 gallons per minute, but they are defined as an exempt use in Chapter 36 of the Texas Water Code. Any well that produces more than 17.4 gallons per minute must be permitted, as well as any well drilled on less than 10 acres. This requires being spaced both from property lines and other water wells. Once the proposed well location meets these requirements and is approved by our field technicians the application must be approved by the Board of Directors.

Overall, the total wells drilled, based on the permitting process, are down last year from the previous year by 24% percent and down again this year from last year by 13%. The biggest decrease this year is in registered wells, dropping from 154 in 2014-2015 to 94 registered wells this year. As the table shows for the past 5 years, water well drilling peaked in the 2011-2012 fiscal year and has continued to drop to date. The Monitoring Well registrations and the permitted wells increased from the previous fiscal year. Monitor wells increased from 1 to 13 registered this year and Permitted wells increased from 79 to 97 this year.

Well Permits Approved

	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012
Armstrong	2	2	10	4	4
Carson	18	17	29	32	27
Donley	13	11	41	28	38
Gray	10	13	24	27	29
Hutchinson	0	0	0	0	0
Potter	37	25	37	36	37
Roberts	4	2	3	0	5
Wheeler	13	9	18	26	22
Total	97	79	162	153	162

Domestic, Stock & Rig Supply Well Registrations Received

	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012
Armstrong	11	20	2	22	6
Carson	6	5	8	16	45
Donley	21	41	23	48	69
Gray	15	17	29	27	46
Hutchinson	0	1	0	0	0
Potter	9	34	23	5	10
Roberts	10	19	20	18	19
Wheeler	22	27	36	55	99
Total	94	154	141	191	294

Observation & Monitoring Well Registrations Received

	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012
Armstrong	0	0	0	0	0
Carson	4	0	0	0	0
Donley	0	0	0	0	0
Gray	0	0	2	0	9
Hutchinson	0	0	0	0	0
Potter	5	1	4	11	24
Roberts	0	0	0	0	0
Wheeler	4	0	0	3	2
Total	13	1	6	14	35

YEAR AT A GLANCE

October 2015

10.1 Hemphill County Water Festival in Canadian
10.7 TCFA Meeting with TWDB in Amarillo
10.15-16 TWCA Conference in San Antonio
10.20 Wheeler County Ag Day
10.28-30 UT Law CLE Texas Water Law Institute in Austin

November 2015

11.1-3 TCFA Meeting in San Antonio
11.3 WOWW Science Collaborative in Canyon
11.17 Region A Planning Meeting in Amarillo
11.18-19 Water, Ag, Energy Nexis Conference in Austin
11.30 GMDA Meeting in Amarillo

Representative Four Price at the Symposium

December 2015

12.1-3 Amarillo Farm & Ranch Show
12.2 Texas Agriculture Irrigation Association Meeting in Amarillo
12.2-3 TWCA Board Meeting in Austin
12.7-8 WCAC Meeting in Austin
12.10 GMA 1 Meeting in Amarillo

January 2016

1.5-8 GMDA Annual Meeting in Sacramento, California
1.27-28 TAGD Conference in Austin

February 2016

2.2 House Natural Resources Committee Meeting in Austin
2.4 High Plains Irrigation Conference in Amarillo
2.9 WCAC, Park & Wildlife Meeting in Austin
2.11 Carson County Ag Day
2.16 Latigo Petroleum Hearing in Austin
2.24 3rd Biennial Water Conservation Symposium in Amarillo
2.25 GMA 1 Meeting in Amarillo

March 2016

3.1 Multiple Well Permit Hearing at PGCD
3.2-4 TWCA Annual Conference in Austin
3.9 URS USDA Ogallala Aquifer Program Workshop in Amarillo
3.10 TAGD Legislative Committee Meeting in Austin
3.17 GMA 1 Meeting in Amarillo
3.22 High Plains WATTS Conference in Lubbock

C.E. at TAGD Groundwater Summit in San Marcos

April 2016

4.7 Water Foundation Board Meeting in Austin
4.11 TDLR Meeting in Amarillo
4.12 Donley County Health Fair
4.13 Weather Modification Presentation at Pampa Rotary
4.20 GMA 1 Meeting in Amarillo
4.25 WCAC Meeting in Austin


Attendees at the Multi-Well Hearing at PGCD

May 2016

5.9 GCD Admin & Accountability Meeting in Austin
5.17 Hearing on 2016 Regional Water Plan
5.18-19 TAGC Conference in Austin
5.18 High Plains Groundwater Safety Training Seminar in Lubbock
5.23 Senate Hearing on Water & Rural Affairs, Surface Water Rights in Austin

June 2016

6.1 House Natural Resources Hearing in Austin
6.9 American Groundwater Trust Meeting in Austin
6.9 TAGD Summit Planning in Austin
6.15-17 TWCA Mid-Year Conference at Horseshoe Bay
6.20 Senate Hearing on Water & Rural Affairs, Regional Water Planning in Austin
6.20 House Natural Resources Hearing on Interim Charges
6.29-7.1 GMDA Summer Meeting in Yakima, Washington

July 2016

7.25 Senate Hearing on Water & Rural Affairs, Regional Water Planning in Austin
7.26 TAGD Legislative Meeting
7.29 Presentation at Groom Library

C.E. at H2O4Texas Statewide Tour in Amarillo

August 2016

8.1 Presentation at H2O4Texas Tour in Amarillo
8.5 Presentation at Panhandle Rotary
8.22-25 TAGD Meeting in San Marcos
8.30 Carson Co. Farm Bureau Meeting

September 2016

9.8 Texas Water Roundtable Meeting in Austin
9.13 TWCA Policy Committee Meeting in Austin
9.15 PRPC Annual Meeting in Amarillo
9.20 House Natural Resources Hearing in Ft. Stockton
9.29-30 CLE Texas Water Law Conference in San Antonio

Through the Years....

District's Original Building

Tailwater Problems were one of the first issues for the District

Panhandle Water News

Published by the PANHANDLE WATER CONSERVATION DISTRICT

"WHEN THE WELL IS DRY, WE'LL KNOW THE WORTH OF WATER". Ben Franklin — November, 1960

MEET THE BOARD
Russell McConnell

C. Russell McConnell of White Deer, representing Precinct No. 3, is Secretary of the Board of Directors of the Panhandle Ground Water Conservation District No. 3.

We are very fortunate to have Mr. McConnell serving on our Board of Directors of the Water District. He knows the needs and problems of the farmer because he has been associated with farming all his life. His father passed away when he was a young lad of eleven years. He aided his brother took care of the farming and livestock for his mother until he went away to college.

Mr. McConnell was a member of the committee that petitioned the Texas Board of Water Engineers to hold a hearing for the purpose of delineating a groundwater conservation

(Continued on Page 5)

WATER WELL STATISTICS

	Permits Issued	Completed Logs Returned
Carson County		
Irrigation	10	7
Municipal	0	0
Gray County		
Irrigation	2	1
Municipal	0	0

Why The Importance Of Water Conservation

By NORMAN WARMINSKI

The whole structure of our world is based on the properties of a drop of water. Our bodies are about 70 per cent water and all active living cells and tissues, vegetable and animal alike, must contain a certain amount of water to stay alive. Water is the greatest of all solvents. Few people know water for its high specific heat, which largely controls the climate of our temperate zones and makes them habitable.

Of all the thousands upon thousands of chemical compounds that make up the earth, one of them — a simple combination of hydrogen and oxygen play a part so far above all others in importance. The reason is simple, water is one of the very oldest of substances. In all probability the glass of water you draw from the faucet today was a part of the great oceans formed millions of years ago. For very little "new" water is ever formed and very little "old" water destroyed.

It is easy to understand, therefore, since water was "here first," why it became one of the supreme rulers of nature. Other and later substances including all living things, had to be able to get along with water or they could not exist. Yet, today water has

(Continued on Page 4)

MEET THE BOARD
John H. Harnly

John H. Harnly of Miami, representing Precinct No. 5, is Vice-President of the Board of Directors of the Panhandle Ground Water Conservation District No. 3.

Mr. Harnly is well qualified to serve as a Director for the Water Conservation District because of his wide experiences as a farmer, rancher, and educator. He knows and understands the problems of a farmer because he has been associated with farming for the last thirty years.

Harnly was a member of the committee that petitioned the Texas Board of Water Engineers to hold a hearing for the purpose of delineating a groundwater conservation subdivision comprising parts of Roberts, Gray, Potter, Armstrong, Donley, and Carson Counties. The petition was granted at the hearing held in Panhandle October 5, 1955. Harnly was one of five men appointed by the State Board of Water Engineers to serve as directors until an election could be held in which the voters would elect to accept or reject the Water District and would elect directors if the formation of the District was approved. Voters of Carson and Gray counties approved the formation of the District at the election held January 21, 1956. The voters of

(Continued on Page 2)

1960 Panhandle Water News Newsletter

The District's Building as it stands today

PGCD'S CURRENT STAFF MEMBERS

Back Row (Left to Right): Chris Archibald, Steve Shumate, C.E. Williams, Peter Winegeart
Front Row (Left to Right): Britney Britten, Jennifer Puryear, Julie Bennett, Anita Haiduk

Staff Members & Job Titles

- C.E. Williams, General Manager
- Steve Shumate, Hydrogeologist
- Jennifer Puryear, Meteorologist
- Anita Haiduk, Permitting Clerk/Secretary
- Julie Bennett, Business Administrator
- Peter Winegeart, Field Technician
- Chris Archibald, Field Technician
- Britney Britten, PR/Education

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