

# Annual Report

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Fiscal Year 2016

Lynn Smith, P.G. - General Manager - Raymond Brady, P.G.

10/20/2016



This report describes the status of various goals that are stated in the District's Management Plan. It also serves to provide information to the Board of Directors and interested members of the public regarding activities performed by the District during the 2016 fiscal year.

## Executive Summary

The 2016 fiscal year was a year of growth for the Mesquite Groundwater Conservation District. Whitney Wiebe was promoted to full-time in October in the capacity of Administrative Assistant. Lynn Smith continues as General Manager. Troy Thomason continues to serve the District as a field technician as needed. Linda Powell continues to serve the District as a secretary as needed.

The District continues to administer a meter grant money program. The grant monies are to be used for water meters and must be matched dollar-for-dollar by the landowner. The water meters are used to quantify water conservation strategies implemented within the District. The first annual report for the grant program was completed by the District this year and was accepted by the Texas Water Development Board (TWDB).

The TWDB completed the realignment of the Groundwater Management Area Two and Groundwater Management Area Six boundary on August 26, 2015. The realignment was undertaken to reflect actual hydrogeological conditions rather than following county boundaries. This realignment was supported by the District and has resulted in several parcels being annexed this fiscal year in eastern Briscoe County that were not contiguous to existing District lands. The District expects that trend to continue and likely increase as the Districts work in eastern Briscoe County become well understood.

New rules were adopted by the District that became effective in 2015. The most significant change was the requirement to meter and report all water produced by non-exempt wells. Metering and reporting is phased in over several years, becoming mandatory in 2017. Groundwater Production Units were also defined and implemented on the same schedule as metering. Metering requirements and Groundwater Production Unit assignment has been a focus of several presentations by District staff this fiscal year. Additionally, the District has implemented an Agent Authorization form in order to formalize who each landowner has given permission to take certain actions with the District.

A significant situation developed that took a considerable amount of the District's time related to the Blaine Brackish Water Study being performed by the TWDB. The District took action to protect the local stakeholders right to comment on the study. After some initial resistance, the TWDB held a local stakeholder meeting in Wellington where comment was made. The District also made formal written comment on several technical flaws with the study. The end result was that private property rights were preserved as well as the authority of the District to manage all groundwater within its boundaries.

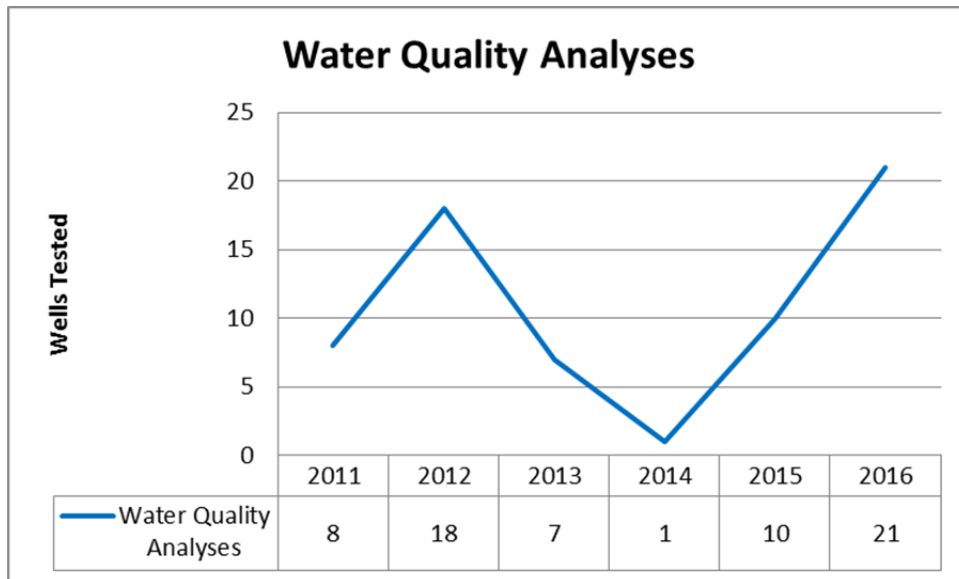
The District continues to measure water levels and rainfall. Several water quality tests were performed for wells within the District. Other District activities included providing educational seminars, well permitting, and sponsoring a scholarship program.

The remainder of this report provides details on activities of the District during this fiscal year. They are categorized into goals that appear in the District's Management Plan. Comparisons with previous year's data are made, where appropriate. It should be noted that some of the Management Plan goals and objectives have been reorganized. This report reflects that new organization; no goals or objectives were added or deleted.

## Management Goal 1: Implement measures to provide for conservation of the groundwater resources of the District

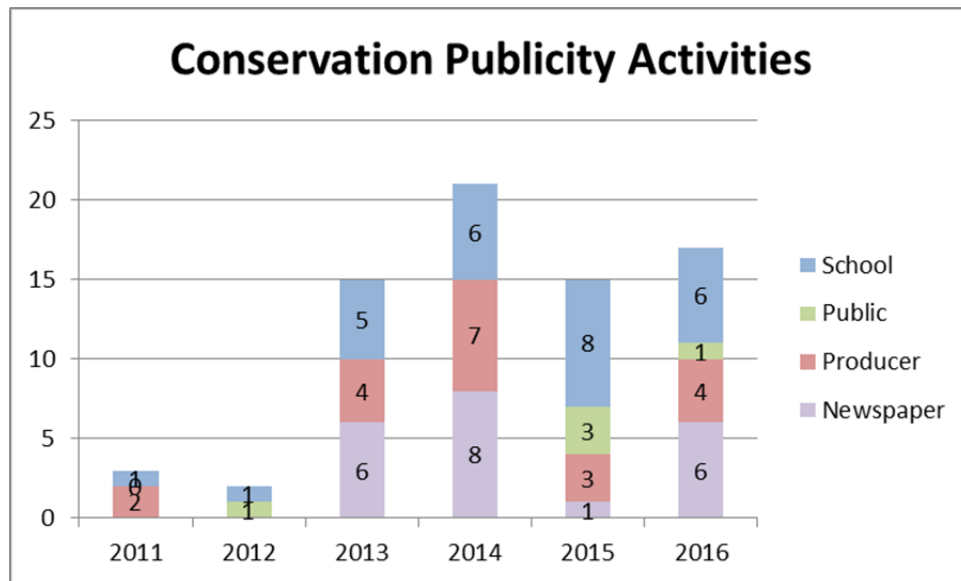
### Objective 1: Conduct water quality analyses of requested wells

The performance standard for this objective is to conduct the requested analyses within forty-eight hours of receipt of the water sample. Twenty-one water quality analyses were requested this fiscal year; each was analyzed within forty-eight hours of receipt of the sample. Results were provided to the owner or well contractor as appropriate.



## Objective 2: Publicize groundwater conservation issues through local newspapers, group presentations, schools, and other media opportunities

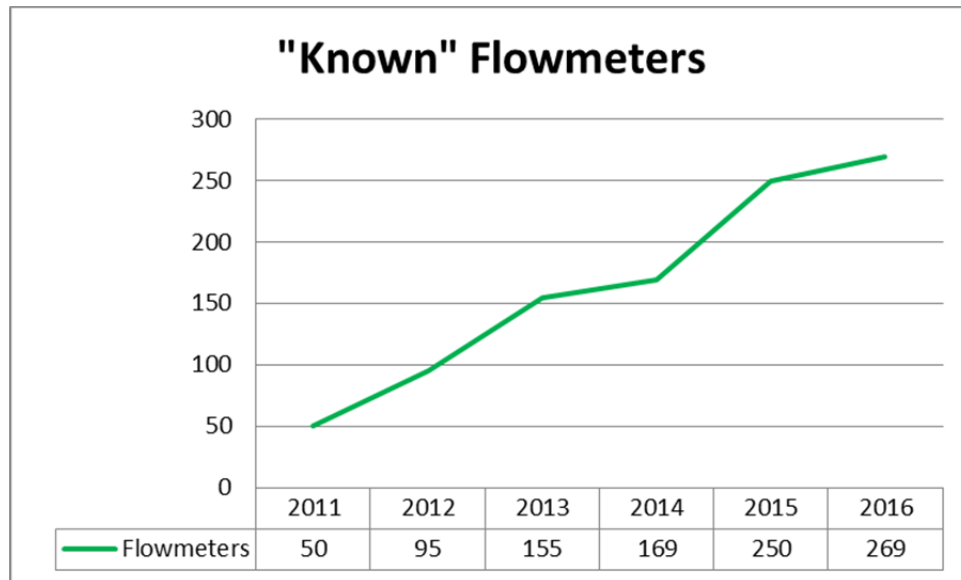
The performance standard for this objective is to publicize a groundwater conservation issue on at least one occasion during the fiscal year. Where applicable, the Texas Water Development Board conservation webpage and best management practices should be used. In this fiscal year, the District publicized conservation issues in six newspaper articles, at four producer meetings, at one public meeting, and six school presentations. The District continues to maintain our website with conservation information and links to other conservation groups.



## Management Goal 2: Provide for the most efficient use of groundwater in the District

### Objective 1: Monitor flowmeters on wells to facilitate water usage efficiency studies

The performance standard for this objective is to record cumulative water production data from ninety percent of flowmeter locations by December 31<sup>st</sup>. District staff recorded water production data at 238 flowmeter locations in November and December. This amounts to 91.5 percent of the known flowmeter locations. For the fiscal year, 27 new flowmeters were installed within the District. Practically all of those installations utilized grant monies. District staff inspected each flowmeter location and recorded initial production data at those locations. District staff escorted McCrometer technicians while they performed maintenance and upgrades to existing AG series meters. Twelve flowmeters were replaced by the manufacturer due to malfunctions.



### Objective 2: Publicize the need for efficient use of groundwater through local newspapers, group presentations, schools, and other media opportunities

The performance standard for this objective is to publicize groundwater efficiency issues at least once by September 30<sup>th</sup>. In this fiscal year, the District publicized efficiency issues at one producer meeting, one public meeting, three school presentations, and maintained our website with conservation and water use efficiency information.

## **Management Goal 3: Implement management strategies that will control and prevent waste or contamination of groundwater**

### **Objective 1: Identify and address local irrigation practices that are wasteful of groundwater resources**

The performance standard for this objective is to educate the public on wasteful irrigation practices with at least one news article, group presentation, or other local publicity opportunity by September 30<sup>th</sup>. District staff presented three educational seminars that addressed wasteful irrigation practices. Additionally, the District Board reviewed five instances of potential water wasting. Investigation of each instance revealed that they were due to mechanical failure or gullies that were created during the May/June floods. In each instance, the owner was making repairs in a timely manner. No action was deemed necessary by the Board.

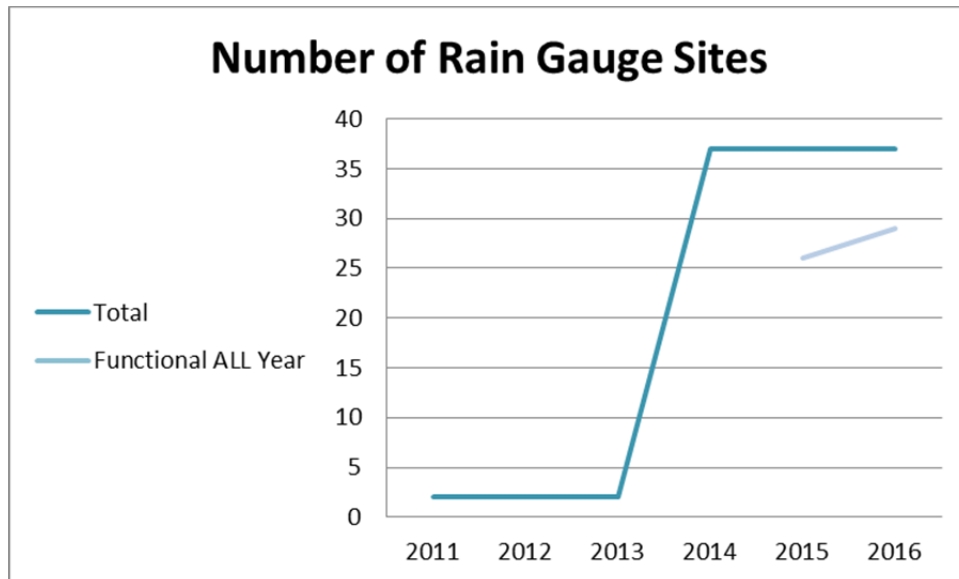
### **Objective 2: Maintain a program to identify, locate, and obtain closure of abandoned wells**

The performance standard for this objective is to inspect and complete a report on each open or abandoned well within thirty days of receipt of the report of such well. District staff did not receive any reports of abandoned wells this fiscal year.

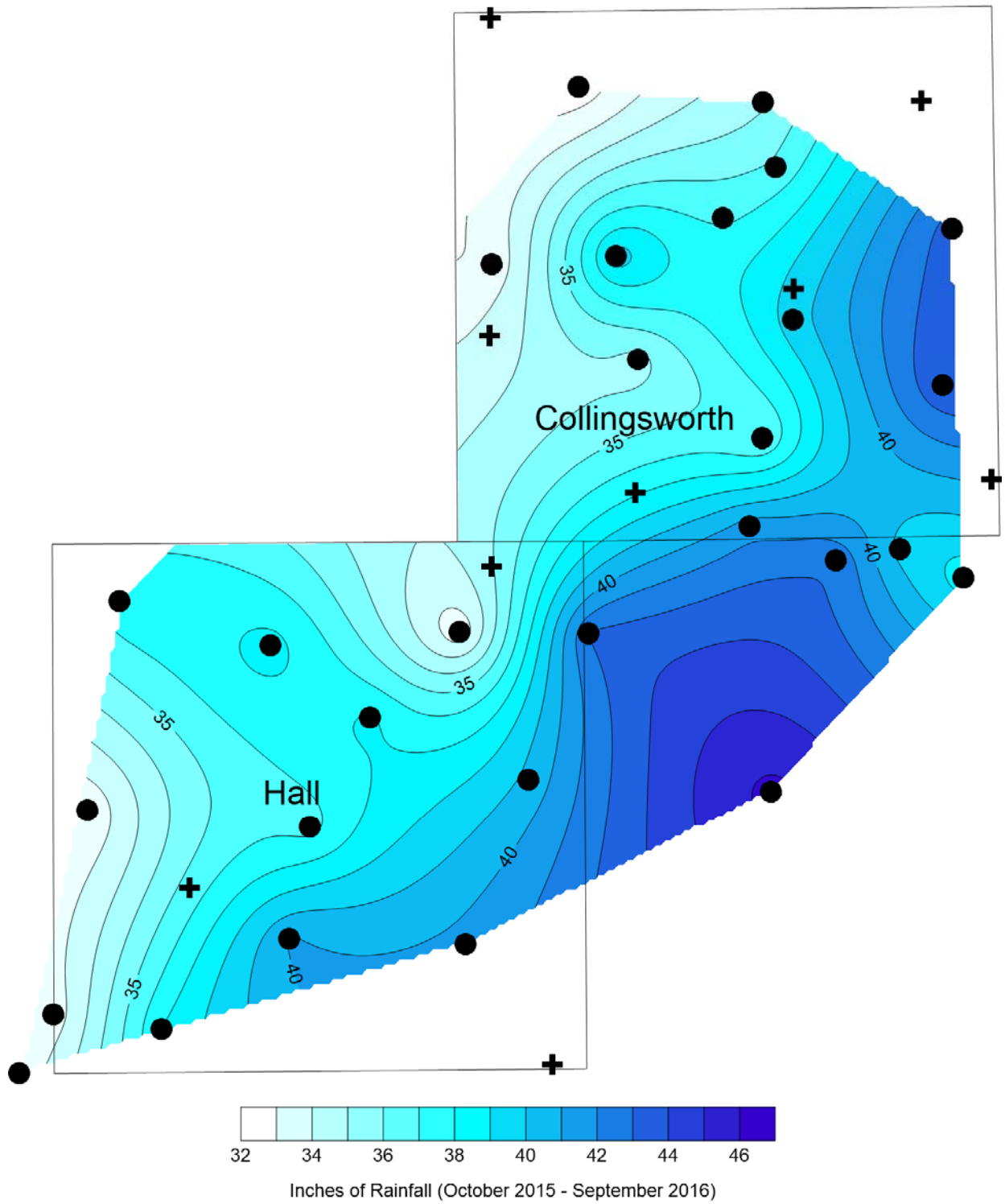
## Management Goal 4: Implement strategies to address drought conditions

### Objective 1: Maintain the District's Drought Contingency Plan

The performance standards for this objective are to review and update the Drought Contingency Plan by September 30<sup>th</sup> and to incorporate newly annexed areas into the plan annually. The Drought Contingency Plan was reviewed at the July Board meeting. No updates were deemed necessary at that time. The District continues to monitor rainfall utilizing a network of thirty-six rain gauges maintained by the District and one additional gauge maintained by the National Weather Service. The District will likely annex additional parcels in eastern Briscoe County in the near future and is looking at several options for placing another rain gauge in that area. One new area near Quitaque was annexed during this fiscal year. The graph below shows how the number of gauged sites has increased over time. The map on Page 6 depicts the rainfall amounts that were recorded at twenty-nine gauge sites that remained functional for the entire fiscal year. The data has been gridded and contoured to estimate likely rainfall amounts between gauge sites. For the sites that were functional in FY 2015 and FY 2016, the average rainfall was 3.27 inches less in FY 2016. There were some notable outliers in the data with two gauges in Collingsworth County showing greater than nine inches less and one gauge in Hall County showing more than five inches more rainfall year over year.



# Total Rainfall FY 2016



- + Rain Gauge Station (Partial Dataset)
- Rain Gauge Station (Full Dataset)

October 20, 2016



## **Management Goal 5: Address recharge enhancement within the District**

### **Objective 1: Recharge Enhancement Feasibility Study**

The performance standard for this objective is to perform a recharge enhancement feasibility study by September 30, 2016. The Texas Water Development Board is conducting a project that studies the Blaine Aquifer and its potential for brackish water production. The project was expanded to include the Whitehorse Group and thus encompasses a significant portion of the District. A portion of the project is focused on recharge and recharge features. The project was to be completed in September 2016 but as of the date of this document, the final report and supporting data have not been made available to the public.

The District will utilize the data and opinions from the 2016 Blaine Aquifer study for its recharge enhancement feasibility study. The District will proceed with its study as soon as the final Blaine Report is completed and accepted by the Texas Water Development Board. It is anticipated that this will occur in the first quarter of FY 2017.

### **Objective 2: Rainwater Harvesting Demonstration Project**

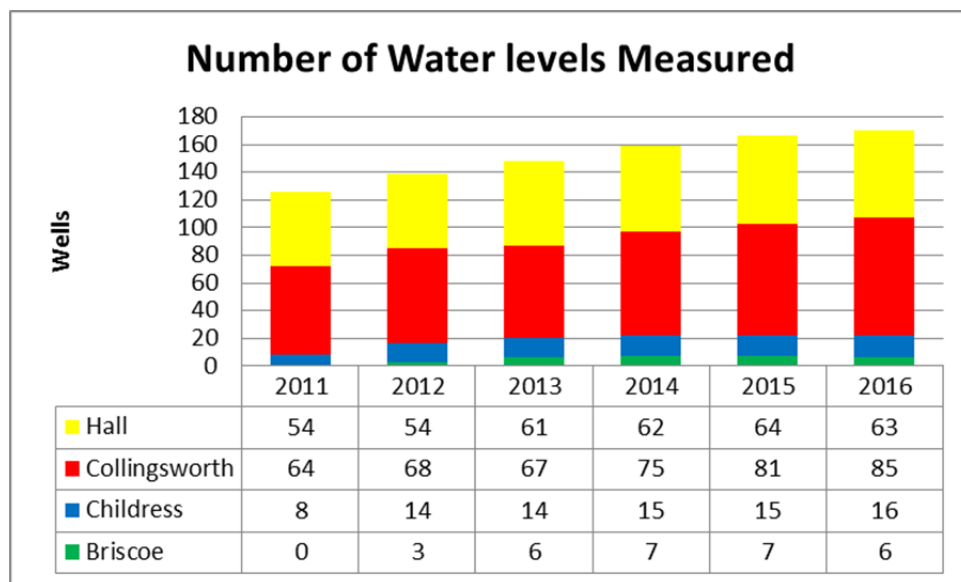
The performance standards for this objective are to construct a rainwater harvesting demonstration project within the District by September 30, 2014 and provide an annual summary of the results from the demonstration project annually. A rainwater harvesting demonstration project was constructed at Ellison Park in Wellington in the spring and summer of 2014. The District cooperated with Bawcom Supply, AgriLife, and the City of Wellington to construct the project. FY2015 year saw the tank fill with water from rainfall.

AgriLife has accepted responsibility for continuing the project as of August 2015 and plans to use it for students to learn about the principles of rainwater harvesting and strategies for conservation irrigation. AgriLife was contacted October 6, 2016 for a report on the number of students and/or projects that occurred during this reporting period. As of the date of this report, they have not responded to the District's inquiry.

## Management Goal 6: Implement strategies to achieve Desired Future Conditions

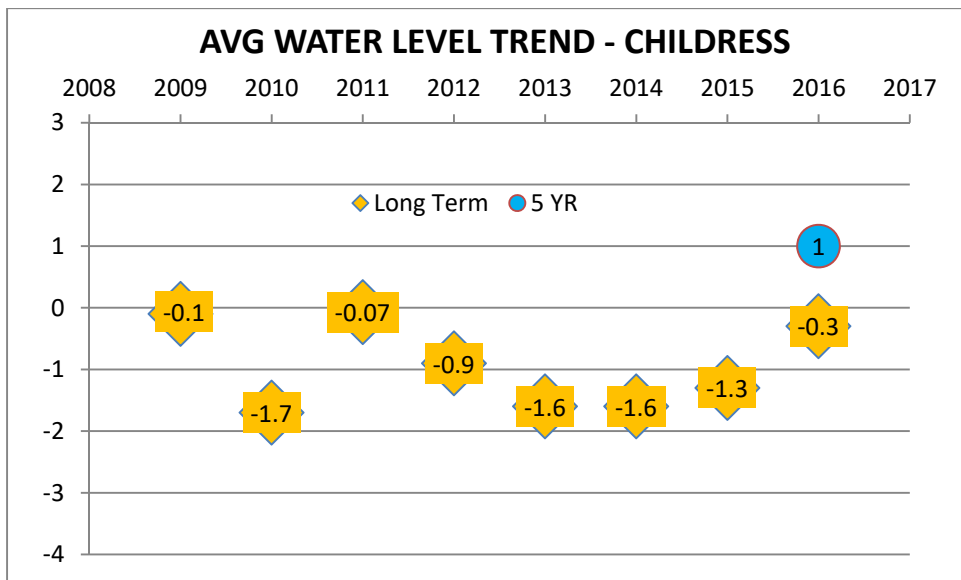
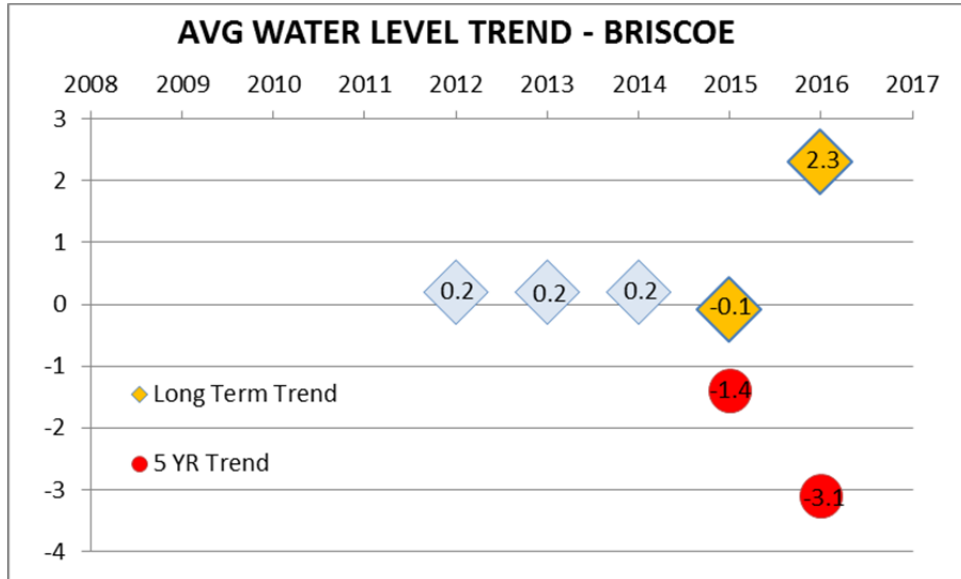
### Objective 1: Monitor static water levels in selected wells

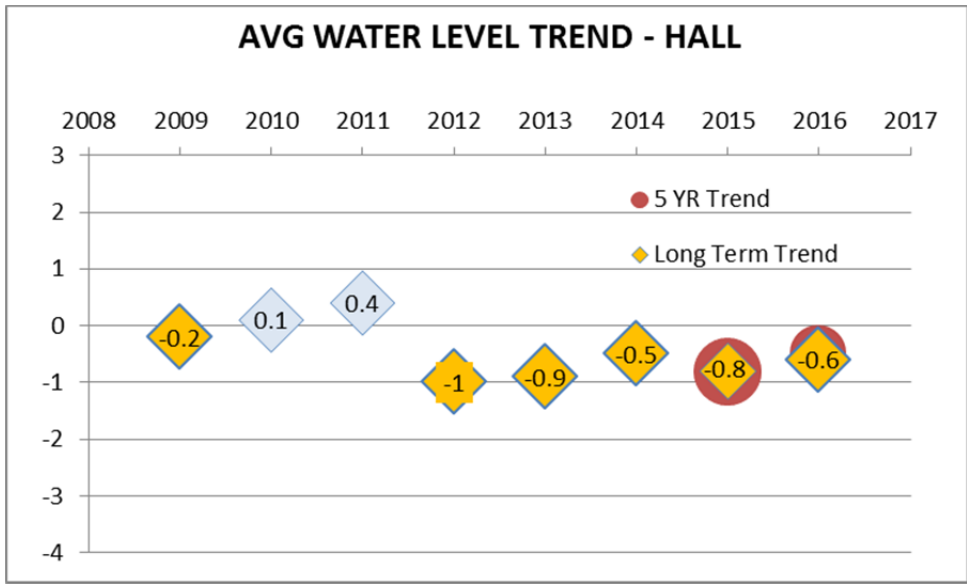
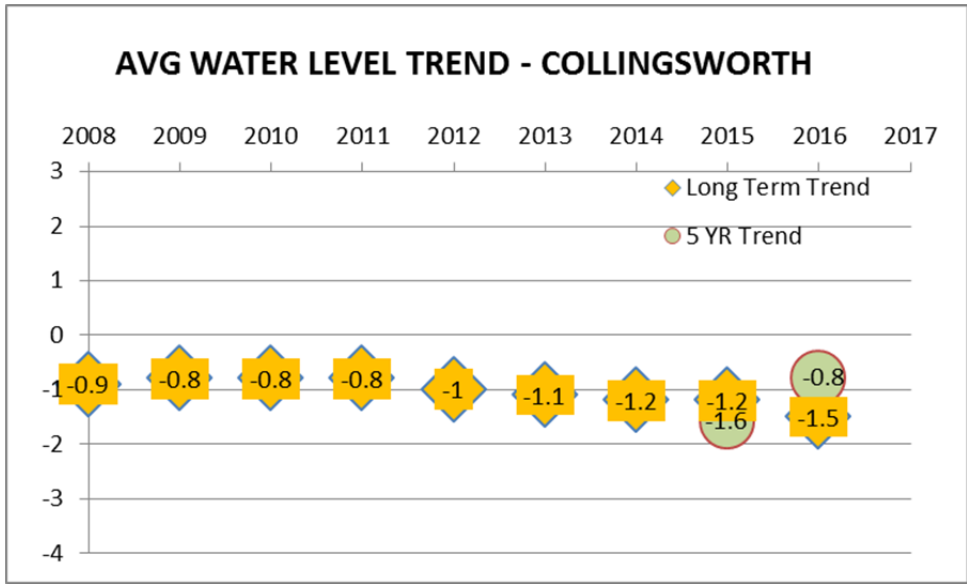
The performance standard for this objective is to measure the static water level in at least 100 wells within the District by April 1<sup>st</sup>. The District measured water levels in 170 wells within the District. One new area near Quitaque was annexed during this fiscal year. The District will likely annex additional parcels in that area in the near future and is looking at several options for monitoring additional wells in that area.



## Objective 2: Complete hydrographs in monitored wells

The performance standard for this objective is to complete the hydrographs for the monitored wells by July 1<sup>st</sup> and provide them to the Board at their next regularly scheduled meeting. The work was somewhat delayed due to the schedule the District and Groundwater Management Area Six was required to meet regarding setting Desired Future Conditions. Hydrographs were provided to the Board at their September meeting.





## Other District Activities

### Data and Mapping

The District completed scanning and geo-referencing driller’s logs, permits, and well registrations that existed in the District’s hardcopy files in 2015. New well data is scanned and geo-referenced as it is received. Meter location and cumulative readings are now being entered into a database and can be analyzed and mapped as needed. Rainfall gauge locations and monthly measurements are also being entered into a database and can now be analyzed and mapped. All of this data is readily available to individuals to support decisions such as plugging, drilling, or rehabilitating a well.

Groundwater Production Units will start being delineated in FY 2016 utilizing our ArcGIS mapping software. Aquifer assignments for each well in the database will also start being made in FY 2016.

Long term, all of this data will be used to measure the District's compliance with our Desired Future Condition statement. While it is hoped that the desired Future Condition is met in all geographic areas of the District, the data may also be useful to indicate areas where additional conservation efforts are needed without placing burdens on all of the District water users as a whole.

### Joint Planning

The District is actively involved in joint planning activities at the Area and Regional level. The District has a voting membership in Groundwater Management Area 6 and Region A Water Planning Group. These groups make decisions that affect the District both from a goal/rule setting standpoint and a monetary standpoint. All groups are on track with their planning and have held all required meetings. The Legislature continues to set more mandates for these groups (and the District); participation in them will only grow in importance.

### Extra-District Activities

District staff participated in several organizations this year such as Texas Association of Groundwater Districts and the Texas Groundwater Association. While these organizations do not directly manage groundwater, they do provide an excellent source of training for District staff. They also provide a good opportunity for staff to network with other Districts, agencies, Water well Contractors, and the general public.

### Certifications and Seals

Mr. Raymond Brady, Texas Professional Geoscientist #5601, provided data analysis and prepared the graphs that occur on pages nine and ten of this report. The remainder of the report was prepared by Lynn Smith, Texas Professional Geoscientist #11223.

