

**Annual Report
to the
Board of Directors
on
Attainment of Management Plan Goals
and
Selected Activities
of the

South Plains Underground
Water Conservation District**



Fiscal Year 2011

September 1, 2010 through August 31, 2011

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South Plains Underground Water Conservation District

Board of Directors

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Matt Hogue, Secretary	Precinct 2	May 2014
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District Mission Statement

The South Plains Underground Water Conservation District will develop, promote, and implement management strategies to provide for the conservation, preservation, recharging, and prevention of waste of the groundwater resources, over which it has jurisdictional authority, for the benefit of the people that the District serves.

Introduction and Overview

SB 1, 75th Texas Legislature (1997), requires groundwater conservation districts governed by Chapter 36, Texas Water Code, to submit management plans for certification by the Texas Water Development Board. The management plans must specifically address the following management goals as applicable:

1. provision for the most efficient use of groundwater
2. control and prevention of the waste of groundwater
3. control and prevention of subsidence
4. conjunctive surface water management issues
5. natural resource issues
6. drought conditions; and
7. conservation

The management plans must also identify the performance standards and management objectives under which each district will operate to achieve their management goals.

The current Management Plan of the District was developed during the spring and summer of 2008. After notice and hearing, the Board of Directors officially adopted the plan on September 9, 2008. The plan became effective on September 9, 2008 and was certified by the Texas Water Development Board on November 10, 2008.

This annual report is a review of the District's activities for fiscal year 2011 and an evaluation of the District's performance in meeting its goals and objectives.

Report on Attainment of Goals

Goal 1.0 Providing the most efficient use of groundwater

Management Objective 1.01—Water Level Monitoring

During the winter of 2011, a total of 146 wells were measured (140 Ogallala and 6 Edwards-Trinity (High Plains)). 138 of the 140 Ogallala wells from 2010 were measured.

Performance Standards

1.01a—146 wells were measured in 2011

1.01b—2 wells not measured and removed from observation network

1.01c—146 water level measurements entered into database

1.01d—146 wells in network

1.01e—2 replacement Ogallala wells added

Management Objective 1.02—Technical Field Services

47 requests for Technical Field Services were fulfilled in 2011. This is 11 more than the 36 requests in 2010. July was the busiest month for flow tests, when 17 tests were performed.

A number of tests were made for prospective land buyers.

Performance Standards

1.02a—47 field service requests were fulfilled

1.02b—57 tests were entered in database. Some of the results were from previous years.

Management Objective 1.03—Laboratory Services

The total number of lab tests performed for producers in 2011 was 49. This is higher than the 46 tests run in 2010. These requests concern the suitability of irrigation water for certain crops.

Also, 14 bacteria tests were run in 2011, compared to 13 in 2010. Six of the tests were positive for either coliform or e-coli bacteria.

Performance Standards

1.03a—49 lab service requests were fulfilled

1.03b—107 records entered in database. Some of the results were from previous years.

1.03c—49 results were reported to constituents. One test was performed for a well not located in the district.

Management Objective 1.04—Irrigation Monitoring

2011 marks the tenth year for the District's Flowmeter Program. With the help of approximately 50 cooperators, the District reads flow meters each month during the growing season to determine water usage on various crops. Each month a report is mailed to the producer showing water usage for that month and the total for the year. Water usage for 2011 will be calculated at the end of the growing season. The following table contains a summary of irrigation water applied during previous years. The data received from the flow meter readings also helps the District calculate water efficiency in crop production.

	<u>Cotton</u>	<u>Peanuts</u>	<u>Grain</u>	<u>Wheat</u>
2002	8.44 in	19.35 in	6.0 in	7.0 in
2003	10.79 in	19.85 in	5.3 in	5.87 in
2004	7.99 in	14.46 in	0.49 in	6.25 in
2005	9.86 in	16.59 in	0.50 in	3.42 in
2006	14.09 in	20.51 in	7.03 in	5.71 in
2007	6.52 in	13.36 in	9.16 in	3.34 in
2008	10.70 in	13.78 in	5.78 in	9.61 in
2009	13.46 in	20.81 in	8.35 in	8.07 in
2010	10.15 in.	14.69 in.	4.43 in.	4.42 in.
Average	10.22 in	17.04 in	5.23 in	5.97 in.

Performance Standards

1.04a—In 2011 there were 69 irrigation systems in the cooperative program

1.04b—Each year, the crops which are monitored vary according to what producers plant. In 2011, 7 different crops were monitored. These crops included cotton, peanuts, wheat, grain sorghum, pasture grass, watermelons, and alfalfa.

1.04c—The table above shows the irrigation application for the major crops monitored.

Management Objective 1.05—Center Pivot Inventory

No center pivot inventory was required in 2011 by the District’s Management Plan.

Performance Standards

1.05a—N/A

1.05b—N/A

1.05c—1,392 pivots and 18 sub-surface drip type irrigation systems are active and entered in District’s database

Goal 2.0

Controlling and Preventing Waste of Groundwater

Management Objective 2.01—Well Permitting and Completion

Since March 1993, the District has issued over 2,349 permits. The number of permits issued during 2011 was 232. This is higher than the 94 issued in 2010. March had the highest number of permits issued, which was 23. Of those permits issued, 19 were either not used or a well was not completed and 7 were issued for water flood for the oil field.

Also, 223 wells were inspected during 2011 to insure proper completion and spacing.

Performance Standards

2.01a—232 permits issued

2.01b—223 well sites inspected

2.01c—0 well sites failed to meet completion standards. The District’s well capping program has alleviated much of the trouble with completion standards.

Management Objective 2.02—Open, Deteriorated or Uncovered Wells

Open or uncovered wells are discovered in one of two ways:

1. a person reports it to the District office, or
2. District staff discovers the well during a field visit

Five deteriorated or uncovered wells were reported to or discovered by District staff during 2011.

Performance Standards

2.02a—5 open, deteriorated or uncovered wells reported to the District

2.02b—5 initial inspections

2.02c—1 day to contact landowners

2.02d—62 days to correct wells

2.02e—1 well took more than 60 days to correct

Management Objective 2.03—Maximum Allowable Production

No instances of a maximum production violation were discovered this year

Performance Standards

2.03a—N/A

2.03b—N/A

2.03c—N/A

Management Objective 2.04—Water Quality Monitoring

Water quality samples were taken from 32 domestic wells during the summer of 2011. These samples were sent to the LCRA Environmental Laboratory Services in Austin for extensive analysis. The analysis included the following parameters: conductivity, nitrate/nitrite, chloride, fluoride, sulfate, arsenic and total organic carbon. Lab reports were mailed to participants. The 2010 water quality map was posted for viewing and printing on the District's web site.

Performance Standards

2.04a—32 samples collected and analyzed.

2.04b—29 of 35 wells (83%) sampled in 2009 were tested in 2011

2.04c—A water quality map was made available on the web site, as well as a printed map on display at the District office.

2.04d—32 test results were entered in database.

Goal 3.0 **Controlling and preventing subsidence**
(not applicable)

Goal 4.0 **Conjunctive surface water management issues**
(not applicable)

Goal 5.0 **Natural resource issues**
(not applicable)

Goal 6.0 **Drought Conditions**

Management Objective 6.01—Rain Gages

The District maintains a network of 33 rain gages. This year, the District installed 10 electronic rain gages. These new gages allow staff to gather rainfall information at any time, not necessarily at the end of each month. The exact time and amount of rain collected is uploaded from the gage to a computer. This information is published on the District's web site. The other conventional gages are monitored each month.

Performance Standards

6.01a—33 rain gages in District network

6.01b—184 monthly rain gage readings of 276 possible. Because this was an extremely dry year, rainfall information was not gathered every month. Specifically, the gages were read 8 out of 12 months.

Goal 7.0

Conservation

Management Objective 7.01—Classroom Education

During 2011, the District provided book covers to all three school districts. Book covers were available for elementary, middle school and high school students. Also, the Education Coordinator delivered 60 lesson plans on water conservation to all 4th grade science teachers. Lesson plans are also available on the education web site.

Performance Standards

7.01a—Water conservation curriculum was given to all 3 elementary schools in the District

7.01b—6,000 book covers distributed

Management Objective 7.02—Newsletter

Four editions of the District's newsletter, *South Plains Groundwater News*, were published during 2011. The May edition of the newsletter contained a history of water level measurements from the District's network of water level measurement wells. Also included was a map of the District showing locations of the measurement wells.

Performance Standards

7.02a—Four newsletter editions were published

7.02b—3,610 newsletters were distributed

7.02c—Eight articles addressed methods of enhancing and protecting the quantity of useable quality groundwater

Management Objective 7.03—News Releases

Six news articles were published in the *Brownfield News* during 2011. Once again, the District was a sponsor of the Ag Section in the local newspaper and submitted articles for that section in the Sunday editions. The news releases included articles on conservation, legislative issues, the drought, and drilling permits. Also, the District submitted water conservation tips to the *Brownfield News* which were published in the *News* and on their website.

Performance Standard

7.03—Six news releases were prepared for publication in the local newspaper

Management Objective 7.04—Public Speaking Engagements

The District fulfilled 8 public speaking engagements during 2011. These included:

- In September two presentations were given at the playa lake festivals.
- Presentations were made to approximately 135 4th and 5th graders at Kids, Kows & More in October. The students learned about rainwater harvesting.
- A presentation was given to the Ropesville Lions Club
- Update on water levels and water quality at the 2011 South Plains Ag Conference

- A presentation on rainwater harvesting was given at the Rain Barrel workshop
- Presentations were given at all three schools in May regarding the Conservation Calendar Art Contest.
- In June, a presentation was given to children at the Kendrick Memorial Library.
- In July, Town Talk invited the District to talk about the drought on their weekly radio program.

Performance Standard

7.04—Seven programs were presented to protect and enhance our groundwater

Management Objective 7.05—Printed Material Resource Center and Technical File

Thirty-six (36) different publications are displayed in the reception area of the office. These publications are obtained from various sources, including the TWDB, the USGS and the Texas Ag Extension Service. District staff developed eleven of the brochures.

163 items were distributed from the resources center.

Performance Standards

7.05a—There were 0 items on conservation, 43 on rules/management plan, 32 on water quality, 0 on rainwater harvesting, and 88 on general information procured by the public from the resource center. Also, 60 rule books were give to permit applicants as a part of the permitting process.

7.05b—No items were requested from the District’s technical file

Management Objective 7.06—Saturated Thickness Maps

Updated saturated thickness and base of the aquifer maps were produced this year. They are available in the office and also on the District’s web site. Both are stocked in the printed material resource center.

Performance Standards

7.06a—There is currently 1 saturated thickness map displayed in the District office. The map is also available on the District’s web site. Real estate agents and prospective land buyers frequently request this document. 33 were obtained from the resource center.

Management Objective 7.07—Conservation Literature

Nine publications displayed in the reception area of the office are devoted to water conservation for the home and the farm.

Performance Standards

7.07a—9 publications are dedicated to water conservation

7.07b—23 items were obtained by the public in 2011

Goal 8.0

Recharge Enhancement

(not applicable)

Goal 9.0 **Rainwater Harvesting**

Management Objective 9.01—Public Awareness Program

The District sponsored a Rain Barrel Workshop in April. The District purchased twenty-three 40-gallon trash cans to be used as rain barrels. The rain barrels were assembled prior to the workshop. Holes were drilled in the lids, screen was glued to the underside of the holes, the faucets were installed, and the trash cans were primed and ready to be painted. An instruction sheet was printed so each participant understood how to construct a rain barrel. Participants signed up for the workshop which was advertised on the District’s web site and at locations around town. At the workshop, a brief explanation of rainwater harvesting was given by the Education Coordinator. She also reviewed instructions for building a rain barrel. Then each participant chose paints, brushes and stencils to help them paint and decorate their own rain barrel. Participants were also given a rain gauge and a copy of the District’s booklet, “Water Wise Plants for West Texas”.



Performance Standards

9.01a—Rainwater harvesting information presented to the public at a workshop in April.

Goal 10.0 **Precipitation Enhancement**
(not applicable)

Goal 11.0 **Brush Control**
(not applicable)

Goal 12.0 **Desired Future Condition of the Aquifers**

A DFC has been adopted and the Directors are given an update at each monthly Board meeting. Legislation passed during this session will affect aspects of the DFC. All GMAs are required to meet annually.

IRS COST-IN-WATER DEPLETION PROGRAM

2011 was the twelfth year the South Plains Underground Water Conservation District participated in the IRS cost-in-water depletion program. This program benefits irrigated landowners who have experienced a cash loss due to declining water levels. The program was considered a success, as 73 landowner requests were processed, including 7 new requests.

SPUWCD.ORG

The District has developed and maintains a web site. The site provides education and information for District constituents, as well as people state-wide. The web site can be accessed from the Texas Alliance of Groundwater District's web site and is linked from various water district web sites. General information, hydrologic maps, rainfall information, newsletters, rules, management plan and water level data are available on the site. In 2011, there were a total of 30,541 visitors to the web site.

SCHOOL EDUCATION

This year, the fifth annual "Water Conservation Art Contest" for 4th and 5th graders was conducted. Students submitted water conservation art work after hearing a presentation concerning water usage and conservation. The winning art works will be featured in a 2012 calendar to be published and distributed by the District. Approximately one hundred of the 2011 Water Conservation calendars were distributed throughout the District.

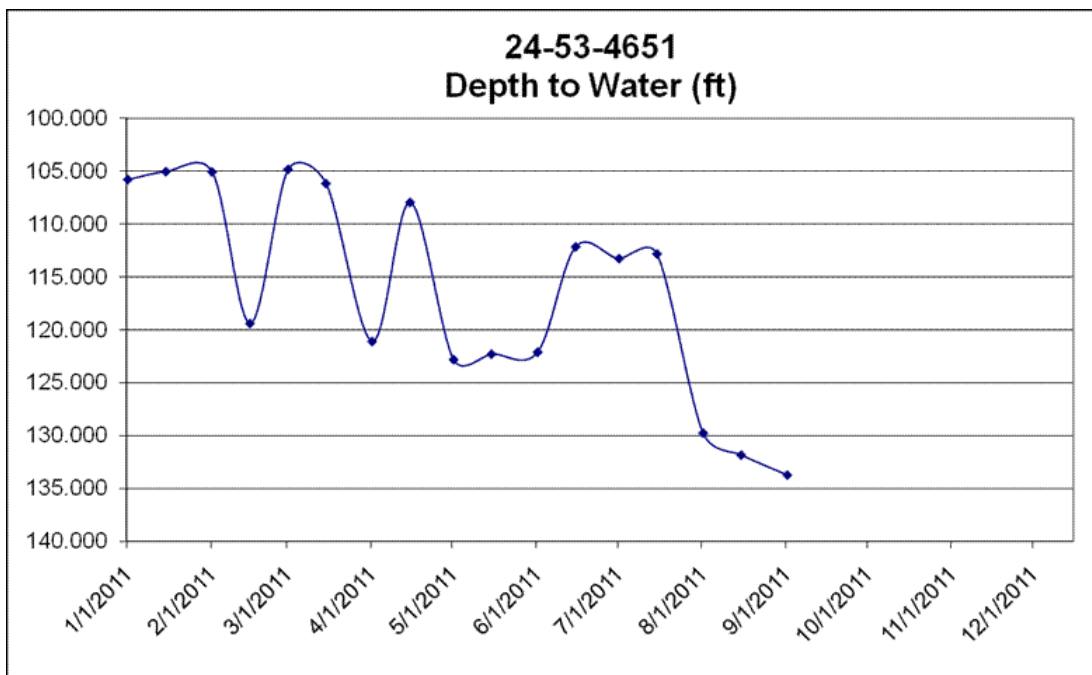
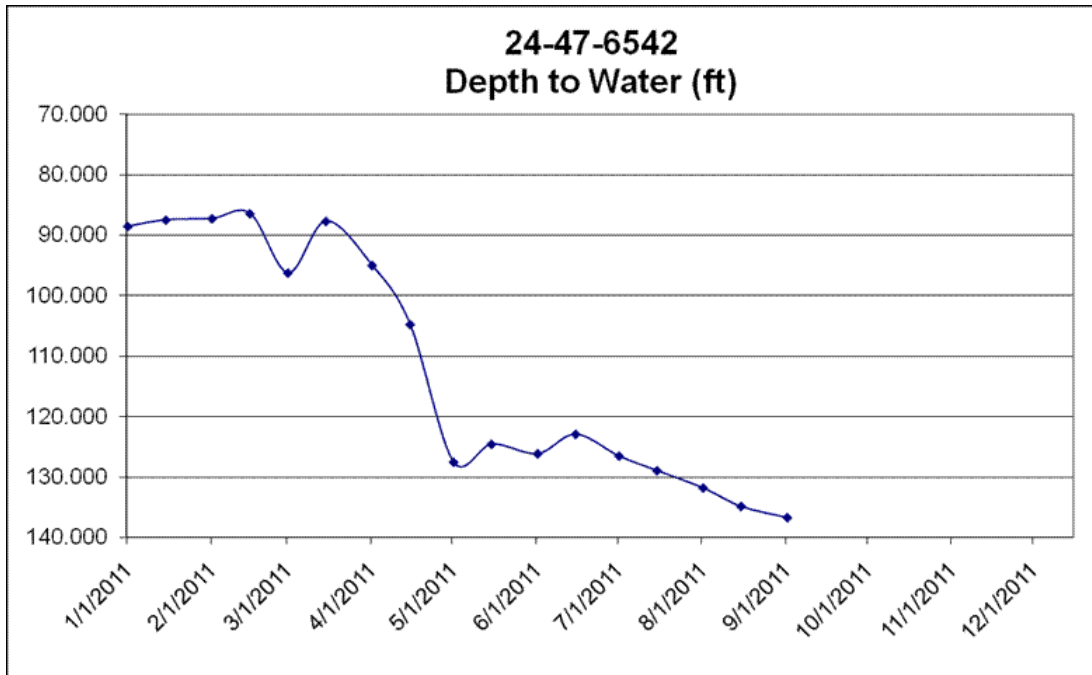
Four children's books on water conservation were donated to the Kendrick Memorial Library.

The education website, www.savingH2O.org continues to be a part of the District's public education outreach along with an education blog and a Twitter entry. These mediums contain water conservation tips and information on the District's education program.

The District also sponsored a high school student this year during Water Conservation Day at the Capitol. The Brownfield High student won first place in a new art contest designed for high school juniors and seniors.

WATER LEVEL RECORDERS

In 2008, two water level recorders were installed in the District with the cooperation of the landowners. One of the wells is Ogallala, and the other is Edwards-Trinity (High Plains). Additional recorders have since been installed and there are now a total of 9 recorders within the District. These devices obtain daily water level measurements. Readings are downloaded periodically and converted to chart form, then presented to the Directors at their monthly meetings. The data is also mailed to the well owners/operators, and posted on the District web site. The District continues to monitor these sites and plans to add more wells to the system.



OTHER ACTIVITIES

Peanut Irrigation Study

For the second year, the District joined with Birdsong Peanuts to conduct a study of peanut irrigation. SPUWCD purchased two flow meter telemetry units with electronic rain gauges for the study. The flow meter and rain gauges are monitored by the District. The goal of this effort includes quantifying an acceptable level of irrigation reduction in peanuts.

Economic Impact of Water Management Strategies

As part of the GMA #2 DFC process, an economic impact study has been commissioned through TTU that will identify the economic impact of proposed water management strategies for GMA #2. The District felt that this study was a vital part of the DFC process. The District contributed its equitable portion to the cost of the study, and has also supplied water usage data and aquifer characteristics to the researchers. District staff members met with the economists several times in 2011, when they reviewed the draft results of the study. The final report was delivered electronically August 31, 2011.

Coalition of Ag Professionals

The goal of this group is to encourage Terry County youth to pursue careers in agriculture. The group has talked to the area's high school administrators and counselors. In August the group met with teachers and counselors from area high schools to discuss the possibility of establishing an Agricultural Educational workshop for the Terry County high school seniors about careers and fields of study involving agriculture.

SUMMARY

The original legislative intent of groundwater district performance evaluations through management plan certification and auditing was to answer two main questions:

1. Is the district operational, and
2. Is the district actively engaged in achieving stated goals, objectives, and performance standards?

Without a doubt, the South Plains Underground Water Conservation District is operational and is achieving its stated goals, objectives, and standards. That is not to say, however, that there is no room for improvement.

The following are recommendations where the District could improve its service:

Management Objective	Recommendation
1.01—Water Level Monitoring	Consider more continuous-monitoring well sites.
1.02—Technical Field Services	N/A
1.03—Laboratory Services	Purchase new lab equipment
1.04—Irrigation Monitoring	Consider a field day or meeting to share results with cooperating producers.
1.05—Center Pivot Inventories	N/A
2.01—Well Permitting and Completion	N/A
2.02—Open or Uncovered Wells	N/A
2.03—Maximum Allowable Production	N/A
2.04—Water Quality Monitoring	Address concerns related to increased oil field activity.
6.01—Rain gages	Add more logger-type tipping bucket gages.
7.01—Classroom Education	N/A
7.02—Newsletter	N/A
7.03—News Releases	N/A
7.04—Public Speaking Engagements	N/A
7.05—Resource Center/Technical File	N/A
7.06—Saturated thickness Maps	N/A

7.07—Conservation Literature

N/A

9.01—Rainwater Harvesting

Investigate the feasibility of installing/cost sharing a rainwater harvesting system for a cooperator in the District.