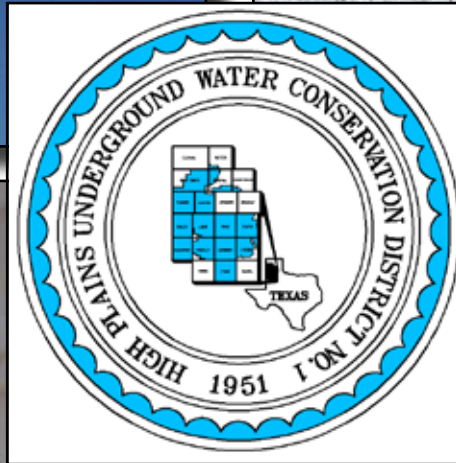


2009 Annual Report



High Plains Underground Water
Conservation District No. 1
Lubbock, TX

www.hpwd.com

Introduction

Created by local residents and the state legislature in September 1951, the High Plains Underground Water Conservation District No. 1 marked its 58th year of operation in 2009. The High Plains Water District strives to protect, preserve, and conserve the groundwater resources of the Ogallala aquifer within its 15-county service area.

The High Plains Underground Water Conservation District No. 1 consists of all of Bailey, Cochran, Hale, Lubbock, Lynn, and Parmer Counties, and parts of Armstrong, Castro, Crosby, Deaf Smith, Floyd, Hockley, Lamb, Potter, and Randall Counties. The water district serves an area of 10,728 square miles or 6,869,910 acres.

The purpose of the water district, as required by Chapter 36 of the Texas Water Code, is to provide for conserving, preserving, protecting, recharging, and preventing the waste of underground water.

Since 1951, the water district has developed a management philosophy and resulting management strategies.

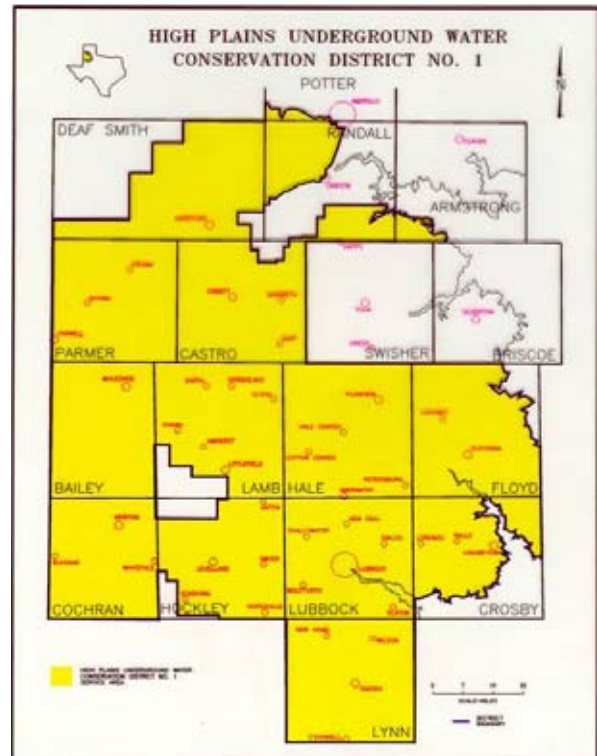
The five-member High Plains Water District Board of Directors has made and enforced rules with the advice and consent of 75 County Advisory Committee members to best accomplish the purpose of the district.

During 2009, staff continued work on the programs outlined in the High Plains Water District's 10-year management plan adopted by the Board of Directors on August 11, 1998, amended and adopted on January 29, 2004, and certified by the Texas Water Development Board on June 21, 2004.

This document contains management goals, performance standards, and responses to the performance standards for fiscal year 2009.

The High Plains Water District expresses its appreciation to the respective group supervisors for their careful documentation of program data and their assistance in compiling this report.

This annual report was reviewed and adopted by the High Plains Underground Water Conservation District No. 1 Board of Directors at their March 24, 2010 regular meeting.



High Plains Underground Water Conservation District No. 1

Board of Directors

Robert Meyer, Canyon, TX, President.....	Precinct Four
Jim Copeland, Anton, TX, Vice-President.....	Precinct Two
Bruce Rigler, Plainview, TX, Secretary-Treasurer.....	Precinct Five
James P. Mitchell, Wolfforth, TX, Director.....	Precinct One
Carroll Cook, Friona, TX, Director.....	Precinct Three

County Secretaries

Patricia Rusler.....	Armstrong and Randall Counties
Shani Nichols & Janet Morgan.....	Bailey County
Karen McGuire.....	Castro County
Wayne Butler.....	Cochran County
Patty Bryant.....	Crosby, Lubbock and Lynn Counties
Deann Martin.....	Deaf Smith County
Judy Thayer.....	Floyd County
Sharon Perkins.....	Hale County
Linda Smith.....	Hockley County
Bill Wischkaemper.....	Lamb County
John Mars.....	Parmer County
Bruce Blake.....	Potter County

County Advisory Committees

Armstrong.....	Wade Bell, James Bible, Jim Bob Burnett, Donald Gillham, James Stockett.
Bailey.....	Tim Black, Lewis Shafer, Nick Bamert (2 vacancies).
Castro.....	Danny Bruton, Darrell Buckley, Dale Wilhelm, Paul Wayland (1 vacancy).
Cochran.....	Todd Willingham, Freddie Brown, Susan Lamb, Donnie Kuehler, Dennis Brown.
Crosby.....	Wayne Laminack, Mickey Givens, Brian Aycock, Jimmy Moore, Eric Mount.
Deaf Smith.....	Joe Henry, Andrew Gee, Douglas Detten, L. J. Clark, Chris Grotegut.
Floyd.....	Lyle Miller, Louis Bybee, Dwight Teeple, Bart Greer, Warren Mitchell.
Hale.....	Lanney Bennett, Gaylord Groce, Van Riley, Charles Lane, Michael Harrell.
Hockley.....	Royce Borland, Sherri Clements, Clay Donnell, Walter Kristinek, Cole Garner.
Lamb.....	Kenny Venable, Jearl James, Kerry Faver, Jason Brashear, Arvin Brashear Jr.
Lubbock.....	Darrell Hobgood, Tracey Kitten, Gary Evitt, Joshua Keeney, Dale Gober.
Lynn.....	Curtis Gicklhorn, Dwight Crawford, Ricky Gandy, Gaylon Tekell, Ty Askew.
Parmer.....	Jerry Don Glover, Kay Williams, Don Bandy, Keith Hicks, James Taylor.
Potter.....	Jeanette Bezner, Mike Menke, Weldon Rea, Marshall Cutright Jr., F. G. Collard III.
Randall.....	Phillip Brandt, Roger Gist III, Wade Meador, Stan Friemel, David Winters.

District Staff

Jim Conkwright.....General Manager
** Don McReynolds, P.G.....Geologist & Technical Group Supervisor
Scott Orr.....Agricultural Group Supervisor
Patty Bryant.....Permit & Field Support Group Supervisor
Carmon McCain.....Information/Education Group Supervisor
William F. Mullican, III, P.G.....Groundwater Consultant

Terry Bridges.....Field Technician
C. J. Campbell.....Field Technician
Kathryn CdeBaca.....Executive Secretary
Lee CranmerField Technician
* Matt Crawford.....Computer Technician
Gerald Crenwelge.....USDA-NRCS Soil Scientist
Jim CrownoverGPS Specialist
* Caleb Jenkins.....Resource Specialist
Pat KunkelBookkeeper
*Steven Lopez.....Field Technician
Juan Peña.....Field Technician
Gray SandersField Technician
Dan SealeField Technician
Sherry Stephens.....Administrative Aide
Rita Tucker.....Receptionist
Keith Whitworth.....Draftsman

* Resigned 2009

** Retired 2009

District Office
2930 Avenue Q
Lubbock TX 79411-2499
(806) 762-0181
(806) 762-1834 (Fax)
www.hpwd.com



Key Events – 2009

- January:**
- Board approves “Phase Two” rule amendments with revisions.
 - 81st Texas Legislature convenes on January 13, 2009.
 - District staff begin field measurements for annual depth-to-water level measurements and pre-plant soil moisture survey.
-
- February:**
- Registration and drilling permits now required for wells completed into the Dockum (“Santa Rosa”) aquifer.
-
- March:**
- Former TWDB Deputy Executive Administrator William F. Mullican III named advisor for groundwater issues.
 - 2009 pre-plant soil moisture survey shows upper portion of soil profile is dry—but there is some residual moisture in lower part of profile.
-
- April:**
- District groundwater levels show average decline of -1.18 feet in 2008.
 - District web site awarded Lubbock Chamber of Commerce Technology award.
-
- May:**
- Educational efforts showcased at “Water Conservation Day at State Capitol.”
 - GMA # 1 adopts desired future conditions for Ogallala and Rita Blanca aquifers.
-
- June:**
- 81st Texas Legislature adjourns “sine die” on June 1. Governor Rick Perry calls special session to convene July 1.
-
- July:**
- Board unanimously approves “50/50” desired future condition for the High Plains Underground Water Conservation District within GMA 1 & 2.
-
- August:**
- Proposed “50/50” DFC to be submitted to GMA # 2 representatives.
-
- September:**
- District submits amended management plan to Texas Water Development Board in Austin.
-
- October:**
- District publishes special issue of *The Cross Section* outlining the DFC process.
-
- November:**
- Inventory reveals 13,013 center pivots in operation within High Plains Water District.
 - Don McReynolds, P.G., retires after 38 years of service to High Plains Water District.
-
- December:**
- District personnel begin making depth-to-water level measurements to determine effects of 2009 pumpage.
 - Waterwise has another successful program with 1,923 students and 55 teachers participating during 2008-2009 academic year.

Goal 1: Providing The Most Efficient Use of Groundwater

Water Level Monitoring Program

(Management Objective 1.01)

The High Plains Water District keeps an inventory of available groundwater by maintaining an observation well network of approximately one water well per nine (9) square miles, or approximately 1,200 wells within the district's 15-county service area.

- Technical Group personnel measured the depth-to-water below land surface in the 1,202 wells making up the district's observation well network in 2009. **(Performance Standard 1.01a)**

- Seven wells were presented to the Texas Water Development Board as possible replacements to the observation well network. A total of 65 wells were visited and evaluated as possible replacement well candidates for wells to better cover these areas that need additional coverage. This allows the district to approximately maintain the same density of wells in most areas and to increase this density of wells in areas that need increased coverage **(Performance Standard 1.01b)**.

- Approximately 1,036 water level measurements were entered into the district's computer data base in 2009 to represent changes during 2008. **(Performance Standard 1.01c)**

- A vinyl sticker, showing the result of the water level measurement and the date it was made, was affixed to equipment at each of the 1,036 wells measured. **(Performance Standard 1.01d)**

- The current measurements are compared to those of the previous year. The water level rise/decline in each well is then calculated for the past year, the past 5 years, and the past 10 years. These data were prepared for and published in the April issue of *The Cross Section*. **(Performance Standard 1.01e)**

- Data from annual measurements and the comparisons to the previous year, previous five-year period, and previous 10-year period were disseminated through the district newsletter and news releases to print and electronic media. **(Performance Standard 1.01f)**

- The Technical Group also maintains the depth-to-water income tax depletion allowance data base. Approximately 3,247 decline values were supplied to taxpayers in 2009 for tax year 2008. Approximately 102 new requests for saturated thickness data were filled. **(Performance Standard 1.01g)**

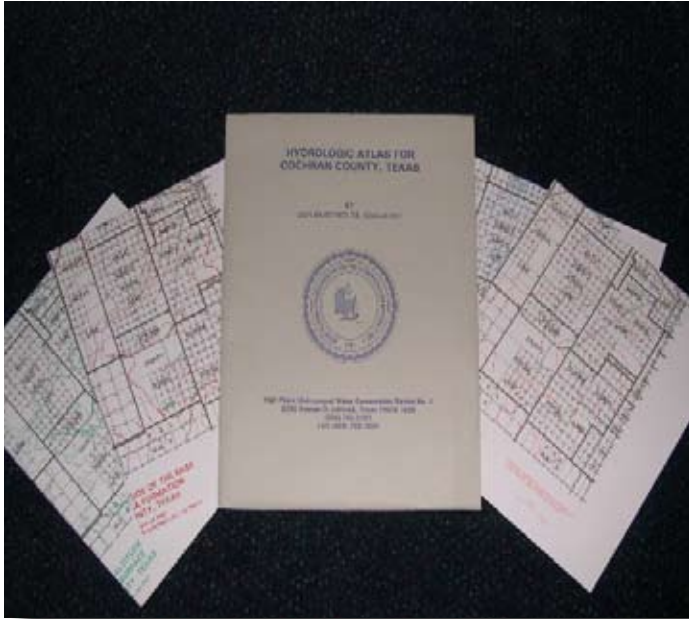


Keith Whitworth makes a depth-to-water level measurement in a Cochran County observation well.

Goal 1: Providing The Most Efficient Use of Groundwater

Update, Publish, and Distribute County Hydrologic Atlases

(Management Objective 1.02)



At five-year intervals, the High Plains Water District constructs and publishes a Hydrologic Atlas for each county or portion of a county in its service area. Each atlas contains four maps and text explaining the maps. These maps depict the altitude of the base of the Ogallala, the approximate altitude of the water table of the Ogallala, the approximate altitude of the land surface, and the approximate saturated thickness of the Ogallala Formation.

- Technical Group personnel make depth-to-water level measurements in as many wells as possible at five-year intervals to create a database from which revised maps depicting the approximate elevation to the water table are constructed. **(Performance Standard 1.02a)**

- As needed, updated maps illustrating the base of the Ogallala Formation are constructed using well log data from wells drilled since the maps were constructed. Generally, there is little change in the base of the Ogallala Formation. Therefore, the same data are used each year. **(Performance Standard 1.02b)**

- At years' end, Technical Group personnel had constructed fifteen (15) maps illustrating elevation of the water table, elevation of the land surface, elevation of the base of the aquifer, and the saturated thickness of the aquifer for each county in the district. **(Performance Standard 1.02c)**

- A revised series of hydrologic atlases were published in 2009. **(Performance Standard 1.02d)**

- Hydrologic atlases are made available to the public at the district's Lubbock headquarters, the district's county offices, by mail request, and by e-mail request. Information about the hydrologic atlas program is also provided to the public on the district's web site. **(Performance Standard 1.02e)**

- Approximately 316 copies of hydrologic atlases and 224 sets of maps/logs were provided to the public in 2009. **(Performance Standard 1.02f)**

Goal 1: Providing The Most Efficient Use of Groundwater

Continue To Issue Well Permits According To District Spacing Rules

(Management Objective 1.03)

On June 9, 2004, the High Plains Water District's Board of Directors revised district rules relating to spacing as follows:

- Water well permits are required for all wells (Ogallala and Dockum) expected to produce 17.5 gallons of water or more per minute. Previously, only wells completed into the Ogallala Formation and expected to produce 69.4 gallons of water per minute or more were required to be permitted by the district.
- Spacing requirements were established for water wells producing between 17.5 and 70 gallons of water per minute.
- An extra 100 yards was added to existing spacing requirements for wells producing from 17.5 to 1,000 gallons of water per minute.
- Water wells must be spaced a minimum distance from property lines based upon well production.
- The total permits issued in 2009 are shown below by county. **(Performance Standard 1.03a)**

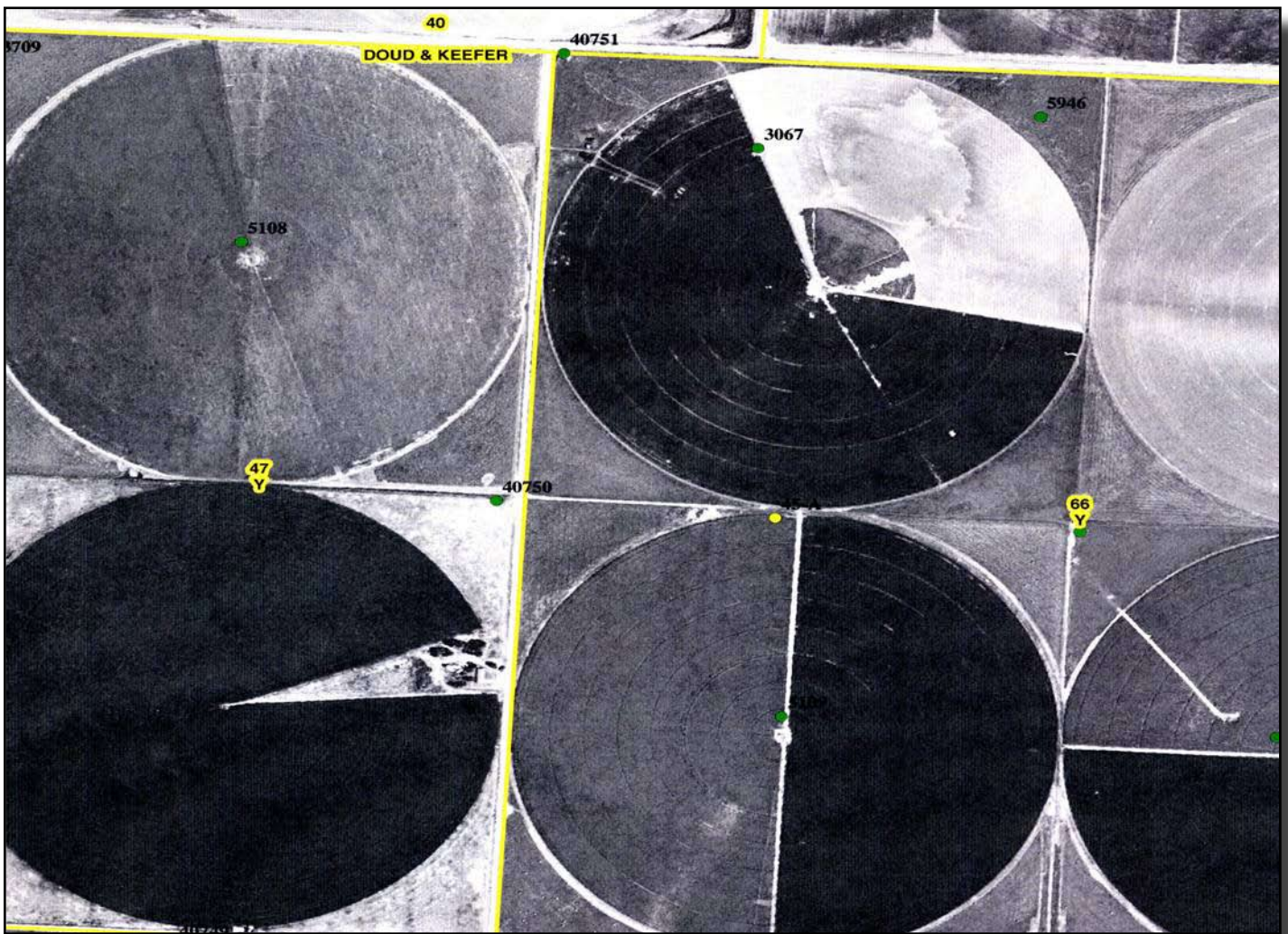
COUNTY	PERMITS ISSUED IN 2009	COUNTY	PERMITS ISSUED IN 2009
Armstrong	1	Hockley	86
Bailey	56	Lamb	120
Castro	78	Lubbock	81
Cochran	111	Lynn	58
Crosby	21	Parmer	73
Deaf Smith	36	Potter	1
Floyd	24	Randall	7
Hale	104	TOTAL	857

- Permit and Field Support Group personnel conducted 857 on-site inspections ("field checks") of proposed wells sites for compliance with district rules in 2009. **(Performance Standard 1.03b and 1.03c)**

- No letters were mailed to permit applicants in 2009 requesting additional information and/or changes needed to comply with High Plains Water District rules. **(Performance Standard 1.03d)** No letters were sent as district personnel now measure all wells and all information is now requested in advance of issuing permit.

- No cases remained open at years' end. **(Performance Standard 1.03e)**

- Approximately 857 new wells were plotted and entered into the district's GPS permit system. **(Performance Standard 1.03f)**



Well sites in Bailey County plotted with GPS program

Goal 1: Providing The Most Efficient Use of Groundwater

Continue Administration of the Low Interest Agricultural Water Conservation Equipment Loan Program Until Outstanding Loans Are Repaid. (Management Objective 1.04)

The High Plains Water District has participated in the Texas Water Development Board's (TWDB) Low Interest Agricultural Water Conservation Equipment Loan Program ("ag loan") since it began as a pilot program in 1986.

Due to fluctuating loan rates in 2001, the High Plains Water District halted its participation in the ag loan program.

In May 2004, the High Plains Water District's board of directors authorized the remaining \$524,000.00 in outstanding ag loans to be paid from the district's revenue. Because of this, this performance standard is no longer applicable as all loan amounts have been repaid to the TWDB. **(Performance Standard 1.04a)**



One of many center pivot systems purchased with funds through the High Plains Water District's ag loan program.

Goal 1: Providing The Most Efficient Use of Groundwater

Continue Pre-Plant Soil Moisture Monitoring Program

(Management Objective 1.05)

Personnel from the High Plains Water District and the USDA-Natural Resources Conservation Service (USDA-NRCS) take soil moisture readings in January each year. During that time, personnel visit soil moisture monitoring sites which are maintained by both agencies. Neutron moisture meters are used to gather data at six-inch intervals to a depth of six feet or to the caliche layer (*whichever is first*); the measurements are entered into the district's computer data base; maps are produced and published before the next crop growing season; and the information from the pre-plant soil moisture survey is made available through the district's newsletter and all the print/electronic media within the district. Irrigators are encouraged to check soil moisture conditions in their fields prior to planting. The soil moisture maps are intended as guides only.

- A network of evenly-distributed soil moisture monitoring sites is maintained within the district. **(Performance Standard 1.05a)**
- Sites at which data were collected in 2009 are listed below. **(Performance Standard 1.05b)**
- There were no sites at which data were unable to be collected in 2009. **(Performance Standard 1.05c)**
- About 17 data collection sites were scheduled to be reinstalled or replaced in 2009. **(Performance Standard 1.05d)**
- Maps showing the available soil moisture and soil moisture deficits were published in *The Cross Section* and distributed to media within the district. **(Performance Standard 1.05e)**

COUNTY	SOIL MOISTURE SITES	COUNTY	SOIL MOISTURE SITES
Armstrong	2	Hockley	17
Bailey	18	Lamb	13
Castro	18	Lubbock	15
Cochran	14	Lynn	17
Crosby	15	Parmer	18
Deaf Smith	11	Potter	1
Floyd	21	Randall	10
Hale	18	TOTAL	204

Goal 1: Providing The Most Efficient Use of Groundwater

Investigate Potential Benefits Of An Irrigation Assessment Program

(Management Objective 1.06)

In the revised management plan, High Plains Water District management and staff are instructed to investigate the potential benefits of an irrigation assessment program.

The Agricultural Irrigation Assessment Program is a cooperative effort between the district and participants who voluntarily allow the district onto their farms to study current irrigation practices. Information such as water quality, application efficiency, amount of water pumped, and yield are analyzed. In return, cooperators are apprised of their current estimated water use efficiency and related data.

Information gathered from this partnership allows the district to evaluate how irrigation water is currently being utilized and what our future needs may be. Regional water planning efforts and other proactive approaches concerning future water demand rely upon this type of information.

Information related to **Performance Standard 1.06a** was unavailable at publication of this report due to the Feb. 5, 2010 resignation of the Agricultural Group Supervisor.

It is the opinion of district management that water use numbers utilized by the Texas Water Development Board in various reports have been lowered on some crops grown in the district as a result of data derived from the irrigation assessment program.



Goal 2: Controlling And Preventing Waste Of Groundwater

Maintain An Agricultural Irrigation Tailwater Abatement Program

(Management Objective 2.01)

Loss of irrigation water (“tailwater”) from the land on which it is produced is a violation of Texas law and the rules of the High Plains Underground Water Conservation District No. 1.

The Water District rule, taken directly from state statute defines waste as it relates to irrigation tailwater as *“Wilfully or negligently causing, suffering, or permitting groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road or road ditch, or onto any land other than that of the owner of the well; or groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge. This permission must be in the form of an agreement signed between the parties on a form acceptable to the Water District. Potential parties to such an agreement are warned that it may obligate the provider to provide a specified supply of water into perpetuity and/or the recipient to accept runoff in whatever quantities and at whatever time the provider chooses.”* If such an agreement is made, the water must move immediately onto the neighbor’s property without crossing property belonging to anyone else or public property.



Irrigation tailwater escaping from field

• District staff document all tailwater complaints with photographs and written reports. The total number of tailwater complaints for 2009 is shown below. **(Performance Standard 2.01a)**

COUNTY	TAILWATER COMPLAINTS	COUNTY	TAILWATER COMPLAINTS
Armstrong	0	Hockley	2
Bailey	0	Lamb	0
Castro	3	Lubbock	5
Cochran	0	Lynn	1
Crosby	0	Parmer	3
Deaf Smith	1	Potter	0
Floyd	3	Randall	0
Hale	3	TOTAL	21

- District personnel notified the appropriate landowner/well operator of the irrigation tailwater waste and violation of rules. Approximately 10 letters were mailed during the year. **(Performance Standards 2.01b and 2.01c)** Two follow-up “second notice” letters were sent.

- If documentation indicates wasting water to be a habitual practice, the district may file a lawsuit seeking an injunction against the landowner/operator. No lawsuits or injunctions were filed by the district in 2009. **(Performance Standards 2.01d and 2.01e)**

- If major improvements are required to eliminate irrigation water waste, the Water District gives landowners/operators the opportunity to submit a written plan to permanently eliminate the waste within one year. Once a plan is agreed upon, no legal action will be taken during the one-year period—providing that the landowner/operator is making a sincere effort to control the waste. **(Performance Standards 2.01f and 2.01g)**

Goal 2: Controlling And Preventing Waste Of Groundwater

Promote Efficient Agricultural Irrigation Technologies

(Management Objective 2.02)



LEPA & furrow dikes

Most agricultural producers within the High Plains Water District are making a serious effort to maximize the benefits of the precipitation they receive and to maximize their irrigation application efficiencies. Most irrigation systems in the Southern High Plains are designed only to supplement precipitation and NOT to meet the total crop water demand.

During drought periods, the crop yield potential declines in proportion to the amount of water lost during the irrigation application. For example, if an irrigation system is only capable to delivering 10 inches of water per acre during the irrigation season at an irrigation application efficiency of 70 percent, then the three inches of water lost during irrigation applications translates into a potential yield loss of 150 pounds of cotton lint per acre.

- A 2009 inventory revealed approximately 13,013 center pivot systems in operation within the 15-county High Plains Water District service area. This is an additional 775 center pivots in operation since the previous inventory. **(Performance Standard 2.02a)**

- At least one article discussing irrigation application efficiency shall be published each year in *The Cross Section*. This performance standard was accomplished with publication of the following articles:

February 2009

“Avoid water waste during pre-plant irrigation”

“District working to obtain AWEP funding for producers”

March 2009

“Reduce tillage to conserve soil moisture”

April 2009

“Low pressure center pivots common agricultural BMP”

May 2009

“Smart Sensor technology may help prevent overwatering”

July 2009

“Subsurface drip irrigation field day set for Aug. 25 at Halfway”

August 2009

“Conservation practices can help extend life of area water resources”

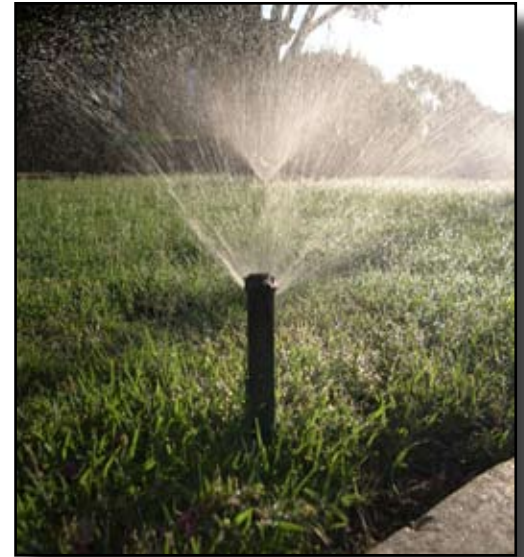
Goal 2: Controlling And Preventing Waste Of Groundwater

Addressing Urban Water Waste

(Management Objective 2.03)

Increasing population, coupled with limited surface and groundwater supplies, make it important for area residents to make more efficient use of the region's water resources. The High Plains Water District supports the efforts of area municipalities to preserve the quality and quantity of their water reserves. The High Plains Water District offers a wide range of technical reports and educational materials to assist towns and cities in their effort.

- **Performance Standard 2.03a** requires the publication of at least one urban water conservation article each year in *The Cross Section* newsletter.



- This performance standard was accomplished with publication of the following articles:

June 2009

“Conservation Tip: Rainwater harvesting”

July 2009

“Smart Irrigation Month draws attention to efficient landscape irrigation”

July 2009

“Rainwater harvesting: Saving water from a rainy day”

August 2009

“Conservation practices can extend life of area water resources”

September 2009

“Study examines roofing material impact on harvested rainwater”

November 2009

“Conservation Tip: Dual flush toilets”

December 2009

“Conservation Tip: Bathroom Water Use”



Goal 3: Controlling And Preventing Subsidence

Since the withdrawal of groundwater within the water district has not caused any known subsidence, it has been determined that this goal is not applicable to the High Plains Underground Water Conservation District No. 1.

Goal 4: Addressing Conjunctive Surface Water Management Issues

Since there is an absence of surface water features within the High Plains Water District 15-county service area, and as the district's enabling legislation addresses groundwater conservation, it is determined that this goal is not applicable to the High Plains Water District.

Goal 5: Addressing Natural Resource Issues That Impact The Use and Availability Of Groundwater and Which Are Impacted By The Use Of Groundwater.

Continue To Require Proper Closing, Destruction, or Re-equipping of Abandoned or Replaced Wells

(Management Objective 5.01)



An open well in CRP land

Because of its implications to human health, it is important that the public know about the quality of groundwater resources in the area. The High Plains Water District works to assist rural residents in protecting the quality of their groundwater resources.

District personnel shall field inspect abandoned and/or replacement wells for closure which is in accordance with Texas Department of Licensing and Regulation (TDLR) rules. Wells that are being re-equipped shall be inspected for compliance with Water District rules.

- There were 106 wells reported abandoned in 2009. **(Performance Standard 5.01a)**
- There were 62 wells reported destroyed in 2009. **(Performance Standard 5.01b)**
- There were 14 wells re-equipped in 2009 in accordance with District rules.

Continue To Enforce The Water District's Rule On The Closing Of Open Or Uncovered Wells

(Management Objective 5.02)

In a timely manner, District personnel inspected all sites reported as being open or improperly covered and followed through to assure proper closing or repair.

- Upon location of an abandoned water well, District personnel temporarily close the well opening with a suitable cap provided by the District. **(Performance Standard 5.02a)**

- Upon notification that an open hole or deteriorated well (“cave-in”) exists on the property, the owner and/or operator has the option of paying the district for the installed well cap or may remove it and replace it with one in accordance with district standards. Approximately 10 well plugs were installed by district personnel in 2009. **(Performance Standard 5.02b)**

- Approximately 49 open, improperly covered or deteriorated wells were reported and inspected by district personnel in 2009. **(Performance Standard 5.02c)**

- Approximately 31 notification letters of open holes and or deteriorated wells were mailed to landowners/operators by the district in 2009. **(Performance Standard 5.02d)**

- Approximately 4 follow-up (“second notice”) letters were mailed to landowners/operators by the district in 2009. **(Performance Standard 5.02e)**

- The district did not close any open or abandoned water wells in 2009. **(Performance Standard 5.02f)** It is the responsibility of the landowner/operator to properly close wells—not the district.

- Approximately 11 well plugs were provided by the district in 2009. **(Performance Standard 5.02g)** One well plug was returned by a landowner who capped the well in accordance with district rules.



Installing a well plug

COUNTY	CAVE-INS	COUNTY	CAVE-INS
Armstrong	0	Hockley	2
Bailey	1	Lamb	0
Castro	0	Lubbock	2
Cochran	0	Lynn	1
Crosby	0	Parmer	2
Deaf Smith	1	Potter	1
Floyd	3	Randall	0
Hale	0	TOTAL	13*

** Some wells were able to be closed as a result of a one-time telephone call or visit with the landowner and/or operator by district personnel. These instances are not included in the above tabulations.

COUNTY	OPEN HOLES	COUNTY	OPEN HOLES
Armstrong	1	Hockley	1
Bailey	1	Lamb	2
Castro	3	Lubbock	3
Cochran	1	Lynn	1
Crosby	0	Parmer	1
Deaf Smith	3	Potter	0
Floyd	3	Randall	1
Hale	0	TOTAL	21*

** Some wells were able to be closed as a result of a one-time telephone call or visit with the landowner and/or operator by district personnel. These instances are not included in the above tabulations.

Assist Residents With Water Quality Testing To Determine Presence Of Fecal Coliform Bacteria.

(Management Objective 5.03)

Upon request, District personnel collect water samples for analysis to determine the presence of fecal coliform bacteria in domestic water wells.

(The results are for information purposes only as the District does not operate a certified laboratory.)

There were 7 requests to collect and analyze samples for the presence of fecal coliform bacteria were received in 2009. Of these, two wells tested positive. Therefore, none were sanitized and retested by district personnel. Each well owner was notified of the test results. (Performance Standards 5.03a, 5.03b, 5.03c, 5.03d, and 5.03e)

COUNTY	COLIFORM TESTS	COUNTY	COLIFORM TESTS
Armstrong	0	Hockley	0
Bailey	0	Lamb	0
Castro	0	Lubbock	6
Cochran	0	Lynn	1
Crosby	0	Parmer	0
Deaf Smith	0	Potter	0
Floyd	0	Randall	0
Hale	0	TOTAL	7

Goal 6: Addressing Drought Conditions

Drought conditions in recent years remind us of how dependent we are on precipitation and underscores the importance of irrigation application efficiency as it relates to crop yields. Precipitation is the primary water supply source for the area served by the High Plains Water District. Irrigation, using groundwater from the Ogallala aquifer, helps supplement the annual precipitation of 18-20 inches. Water provided in a timely manner can help ensure crop yields, which have a positive impact on the economic vitality of the region.

Most of the precipitation occurs as rainfall. Approximately 30 percent of the average annual precipitation occurs in rainfall events ranging from a trace to a half inch, which provides limited benefit for crop production. About 60 percent occurs in events ranging from one half inch to 2 inches, with the remaining 10 percent occurring in larger events. Rainfall events which exceed one half inch that occur in the area are generally short duration, high intensity events which exceed the infiltration rates of the soil. Consequently, runoff occurs if the land is not prepared to hold the water in place until it has time to soak into the soil. This is especially important when large precipitation events occur in the area. For many years, the Water District has promoted the use of furrow dikes to keep rainfall or irrigation water from flowing off the field and into playa basins. Rainfall captured by furrow dikes can help delay an irrigation by maximizing rainfall benefits.



Furrow dikes hold rainfall in place

Groundwater is pumped primarily from the Ogallala aquifer to make up the difference between the crop water demand and the precipitation received prior to and during the growing season (May through September for summer crops and August through May for winter crops). Even though approximately 60 percent of the average annual precipitation generally occurs just prior to and during the summer growing season, on a year-to-year basis, it cannot be depended upon to occur timely and in amounts that will satisfy the needs of the crops growing in the area. Droughts occur and reoccur in the area, as do cycles of above average precipitation.

The unpredictability of the amounts and timing of precipitation events make it impossible to determine how much groundwater the irrigator will need to pump to meet his crop water demands on a year-by-year basis.

- Agricultural Group personnel maintain a network of rain gauges at soil moisture monitoring sites in the district.

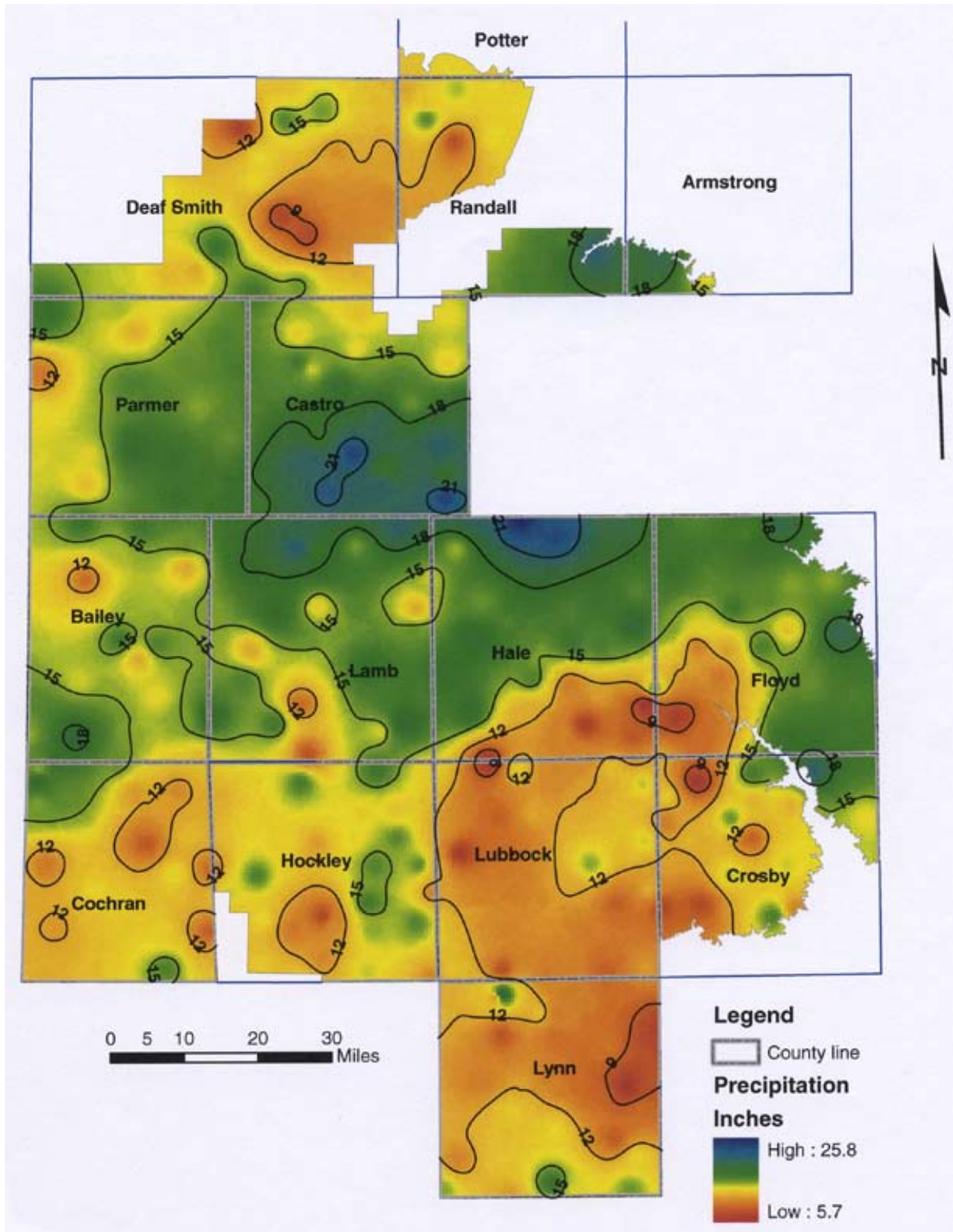
- The following table contains the number of gauges at soil moisture monitoring sites and the total number of gauges within the respective county.

COUNTY	GAUGES AT SOIL MOISTURE SITES	TOTAL GAUGES IN COUNTY	COUNTY	GAUGES AT SOIL MOISTURE SITES	TOTAL GAUGES IN COUNTY
Armstrong	2	7	Hockley	29	37
Bailey	20	31	Lamb	18	29
Castro	28	32	Lubbock	24	32
Cochran	21	31	Lynn	25	34
Crosby	21	26	Parmer	25	29
Deaf Smith	20	30	Potter	1	4
Floyd	30	37	Randall	15	21
Hale	22	29	TOTAL	301	409

- These rain gauges are read by district staff in April, August, and December each year. Rainfall data from these gauges are plotted on contour maps and published in *The Cross Section*. (**Performance Standard 6.01b**) An annual precipitation map is shown on the next page.

- During drought periods, the district's educational efforts are increased to heighten awareness of water conservation techniques. Unofficial rainfall totals in 2009 were 21.23 inches for Amarillo and 12.87 inches for Lubbock, respectively.

2009 Annual Rainfall Within High Plains Water District

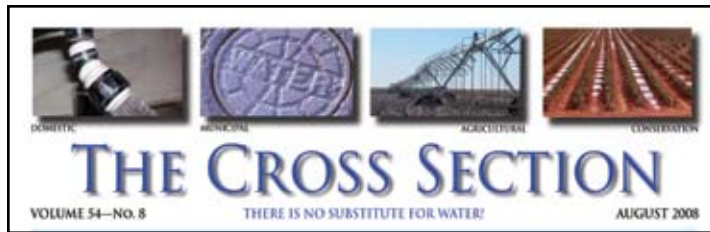


Goal 7: Addressing Conservation

The High Plains Water District utilizes a number of public information strategies to educate the public about the importance of water and water conservation.

Continue Publication Of *The Cross Section* monthly newsletter

(Management Objective 7.01)



Performance Standard 7.01a was accomplished with publication of 12 issues of the newsletter.

Average monthly circulation for the newsletter in 2009 was 6,704 readers. The 2009 press run was 88,415 copies. In addition, the publication was made available for on-line reading on the district's web site. **(Performance Standard 7.01b)**

A minimum of 12 articles will appear each year discussing methods to conserve and preserve the quantity of usable quality groundwater within the district. This performance standard was accomplished.

Continue To Provide News Releases To Print And Electronic Media

(Management Objective 7.02)

Each year, news releases discussing methods to conserve and preserve the quantity of usable quality groundwater are written and distributed to all print and electronic media within the district as well as select media outside the district. These news releases are also posted online at www.hpwd.com

Approximately 15 news releases were written and distributed to media during 2009. Subject matter ranged from conservation tips, results of the district's annual depth-to-water level measurements, results of the annual joint pre-plant soil moisture survey, general water conservation information, regional water planning information, and locations where the district's Ogallala aquifer display may be viewed.

(Performance Standard 7.02a)

Continue To Produce Radio Public Service Announcements For Distribution To Stations Within The District

(Management Objective 7.03)

A series of 60-second pre-recorded public service announcements discussing methods to conserve and preserve the quantity of usable quality groundwater are produced and distributed to eight "contract" radio stations within the district. These stations are KDHN in Dimmitt, KFLP in Floydada, KIJN in Farwell, KLVT in Levelland, KPAN in Hereford, KRFE in Lubbock, KVOP in Plainview, and KZZN in Littlefield. The district's PSAs were aired a total of 7,298 times in 2009. **(Performance Standard 7.03a)**

Continue To Produce TV Public Service Announcements For Distribution To Stations Within The District

(Management Objective 7.04)

A series of 30-second public service announcements discussing water conservation methods are produced and distributed for airplay on KCBD-TV, NewsChannel 11, in Lubbock. The Water IQ outdoor faucet waste PSA received primary airplay. District TV PSAs were aired a total of 504 times during 2009. **(Performance Standard 7.04a)**

Continue To Make Public Presentations

(Management Objective 7.05)

High Plains Water District staff shall present a minimum of 15 programs per year addressing conservation and preservation of usable quality groundwater in the district to civic and professional organizations.

The general manager gave 36 presentations and the information/education supervisor gave 10 presentations during 2009. **(Performance Standard 7.05a)**



Manager Jim Conkwright gives a presentation

Continue To Maintain Public Information Boards At District & County Offices

(Management Objective 7.06)



The High Plains Water District makes Water Management Notes, technical reports, and other printed information available to the public in the reception area of the district office and at its county offices.

Approximately 161 informational publications and technical reports are available to the public on display boards at the district's Lubbock headquarters. A limited number of publications are available to the public at the district's county offices.

District personnel received 437 requests for atlases, maps, logs, and other information via phone, mail, or e-mail. Approximately 421 requests for atlases, maps, logs, and other information were received from walk-in visitors. A total of 519 walk-in visitors were assisted by district personnel at the district headquarters in 2009.

(Performance Standard 7.06a)

Continue To Design Public Information Displays For Use Within The District

(Management Objective 7.07)

Annually, an informational exhibit about the geology/hydrology of the Ogallala aquifer along with printed information about the conservation and preservation of groundwater are displayed at suitable venues within the district.

The district's Ogallala aquifer display was exhibited six times within the district in 2009. Unless the event is a trade show, the exhibit is generally on display for two weeks at a time.

(Performance Standard 7.07a).



Continue To Provide Information Via Internet Web Site

(Management Objective 7.08)



The High Plains Water District makes information about water and water conservation available to the public via its home page on the Internet.

The web site, www.hpwd.com was redesigned in 2005 and has received many favorable comments.

During 2009, the district's web site received 870,165 hits (average of 72,513 hits per month). (Performance Standard 7.08a)

Continue To Sponsor Classroom Education Programs

(Management Objective 7.09)

Since 1996, High Plains Water District has sponsored the WaterWise™ water conservation education program (featuring home retrofits with high-efficiency fixtures) and accompanying curriculum in public and/or private schools within its service area.

The district accomplished this performance standard by sponsoring the program in select schools during academic year 2008-2009. Resource Action Programs provided the district with a WaterWise™ Program Summary Report for the year. This report



included an executive summary, resource saving estimates, a program overview, a program impact summary, and appendices including student thank-you letters.

A total of 1,923 students and 55 teachers in more than 30 school districts participated in the Water-Wise™ program during the 2008-2009 academic year. **(Performance Standard 7.09a)**

The Cross Section highlighted the program's accomplishments in the December 2009 article, "Water-wise™ curriculum teaches students importance of conservation."

Continue To Make Classroom Presentations

(Management Objective 7.10)

Upon request by instructors, District Information/Education Group personnel visit area schools to present information about groundwater quality, quantity, and water conservation to public and private school students.

Approximately six classroom presentations were made during academic year 2008-2009. **(Performance Standard 7.10a).**

Goal 8: Other Management Goals Included In The Plan By District

No other management goals have been included in the plan since it was amended and adopted by the High Plains Water District board of directors on January 29, 2004.



