

# **South Plains Underground Water Conservation District**

## **Management Plan 2003-2008**

*Effective September 9, 2003*

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## **District Mission Statement**

The South Plains Underground Water Conservation District (the District) will develop, promote, and implement management strategies to provide for the conservation, preservation, protection, 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.

## **Time Period for this Plan**

This plan becomes effective September 9, 2003, upon adoption by the Board of Directors (the Board) of the District and remains in effect until a revised plan is approved or until August 31, 2008, whichever is earlier. 9

## **Guiding Principles**

The District was formed, and has been operated from its inception, with the guiding belief that the ownership and production of groundwater is a private property right. It is understood that, through the confirmation election of the District, the landowners relinquished some of their control over that right for the collective benefit of the community which the District serves.

The Board has adopted the principle of "education first" and regulation as a last resort in their effort to encourage conservation of the resource. As a result, the rules of the District were designed to give all landowners a fair and equal opportunity to use the groundwater resource underlying their property for beneficial purposes. If, at the request of the constituents of the District, more stringent management strategies are needed to better manage the resource, these strategies will be implemented after an extensive educational process and with the perceived majority approval of the constituents. The District will continually monitor groundwater quality and quantity and develop a better understanding of the dynamic systems over which it has jurisdiction.

This management document is intended as a tool to provide continuity in the management of the District. It will be used by the District staff as a guide to insure that the goals of the District are accomplished. The Board will use it for future planning, as well as a document to measure the performance of the staff on an annual basis. 8

Conditions can change over time which may cause the Board to modify this document. The dynamic nature of this plan shall be maintained such that the District continues serving the needs of the constituents. At the very least, the Board will review and readopt this plan every five years, or as specified by Chapter 36, Texas Water Code.

Goals, management objectives, and performance standards must be set at an attainable level and should be realistic and effective. Lofty ideals penned in an effort to be "all things to all people" can be the first step toward disaster. Unreasonable elevated objectives foster potentially damaging results when the objective cannot be met due to a lack of resources, fiscal or



otherwise. Goals can also be set too low. Simplistic ideals can foster mediocrity. In both cases, the mission of the goal setting entity is thwarted and the benefactors of the same slighted. Although well meaning, when the failure to attain a goal is realized by those measuring performance, the initial response is to assume that those setting the goals were negligent in performing their duties when, in truth, the goals were unattainable from the start.

In the opinion of the Board, the goals, management objectives, and performance standards in this planning document have been set at a reasonable level considering existing and future fiscal and technical resources. Evolving conditions may change the management objectives defined to reach the stated goals. Whatever the future holds, the following guidelines will be used to insure the management objectives are set at a sufficient level to be realistic and effective:

- The District’s constituents will determine if the District’s goals are set at a level that is both meaningful and attainable; through their voting right, the public will appraise the District’s overall performance in the process of electing or re-electing Board members.
- The duly elected Board will guide and direct the District staff and will gauge the achievement of the goals set forth in this document.
- The interests and needs of the District’s constituents shall control the direction of the management of the District.
- The Board will maintain local control of the privately owned resource over which the District has jurisdictional authority, as provided by Chapter 36, Texas Water Code.
- The Board will evaluate District activities on a fiscal year basis. That is, the District budgets operations on a September 1 – August 31 fiscal year. When considering stated goals, management objectives, and performance standards, any reference to the terms annual, annually, or yearly will refer to the fiscal year of the District.

**General Description, Location and Extent**

The District was created by HB 281 (72<sup>nd</sup> Legislature) during 1991. The District was confirmed by voter approval, the initial Board elected, and an ad valorem tax rate cap of \$0.025/\$100 valuation was set in an election held in August 1992. Table 1 lists the current Board of Directors, office held, occupation, and term.

**Table 1: Board of Directors of the South Plains Underground Water Conservation District**

<b>Office</b>	<b>Name</b>	<b>Occupation</b>	<b>Term Ends</b>
President	Dan Day	Rancher/Retired Farmer	May 2004
Vice-President	Matt Hogue	Active Farmer	May 2006
Secretary	Scott Hamm	Active Farmer	May 2004
Member	Doyle Moss	Active Farmer	May 2006
Member	Larry Yowell	Agri-Business	May 2004

Originally, the jurisdictional extent of the District was the same as Terry County, Texas. However, in 1994 landowners controlling 1,302 acres of Hockley County, Texas, individually

petitioned the District for annexation. Each petition was approved by unanimous vote of the Board.

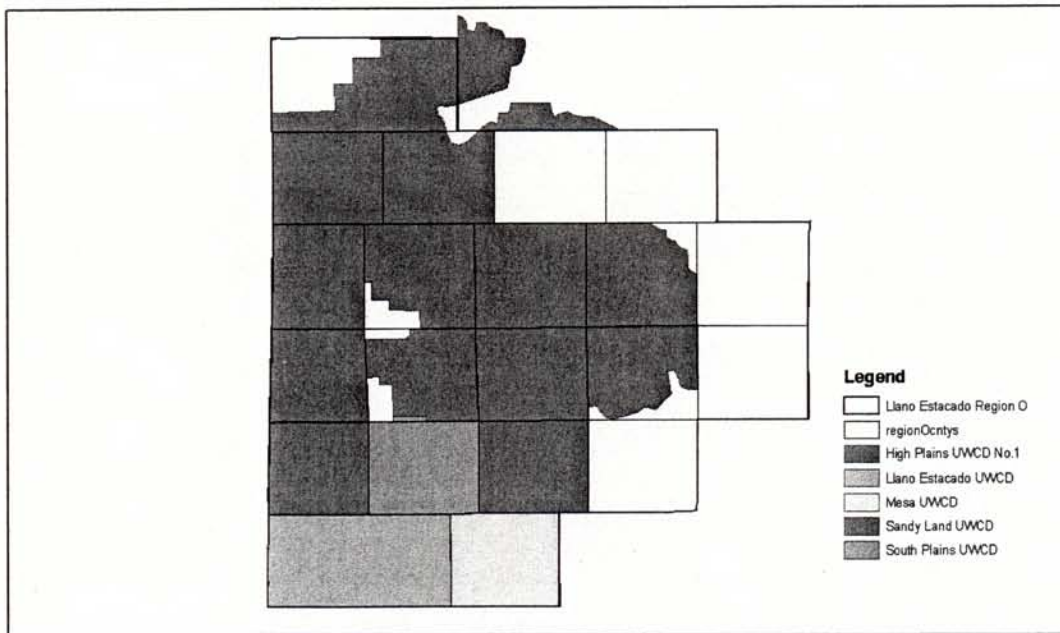
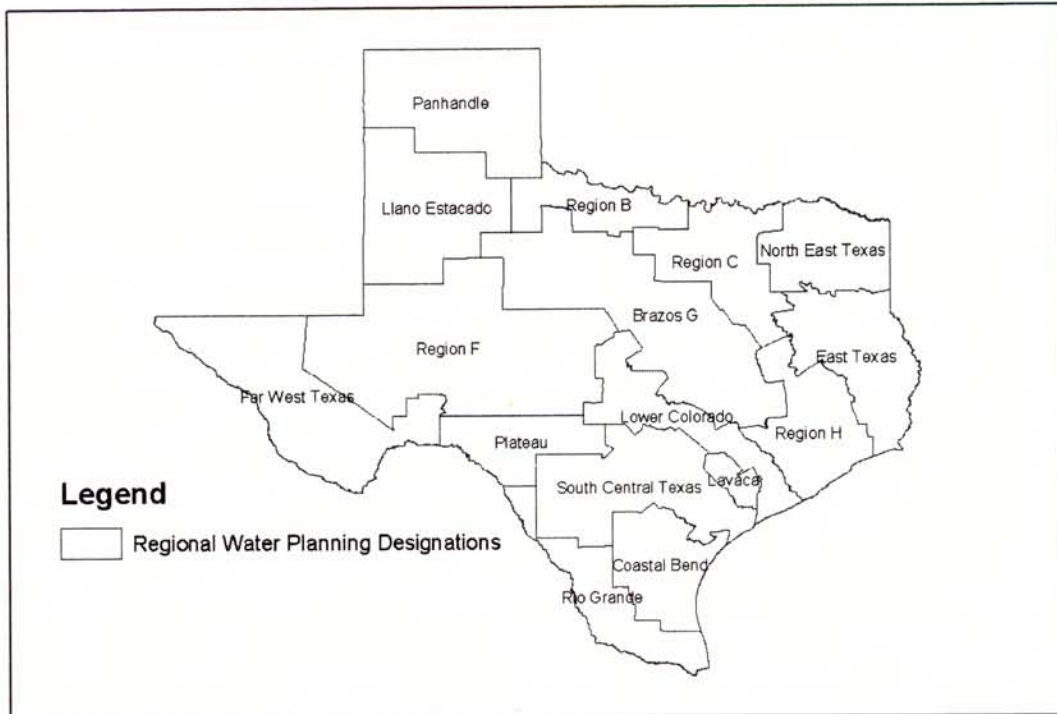
The District now covers approximately 902 square miles of the Southern High Plains of Texas (Figure 1). Brownfield, the county seat, is the largest municipality in the District, having a population of 9,560. Meadow (pop. 547) and Wellman (pop. 221) are the other two incorporated communities in the District.

Four other groundwater districts border the South Plains Underground Water Conservation District. These include Sandy Land UWCD, Mesa UWCD, Llano Estacado UWCD and the High Plains UWCD #1.

The economy of the District is supported predominately by row crop agriculture. The 150,000 plus acres of irrigated cropland (out of a total row crop acreage of 500,000) affords economic stability to the area covered by the District. The major crops cultivated within the District include: cotton, peanuts, grain sorghum and wheat and, to a lesser extent, watermelons, sunflowers, alfalfa, cucumbers, guar and hay crops.

Petroleum production was once a predominant factor in the local economy. However, due to declining oil field production, petroleum revenues have been relegated to a weak second in economic impact.

**Figure 1: Location of the South Plains Underground Water Conservation District**





## **Topography and Drainage**

The land surface in the District is a nearly level to very gently undulating constructional plain that has little dissection. The northwestern part of the District is the most undulating, largely because eolian deposits of sand have been shifted and reworked by wind.

The elevation ranges from about 3150 feet above sea level in the southeastern part of the District to 3600 feet in the northwestern part. Brownfield, which is near the center of the District, has an approximate elevation of 3300 feet. There is a general slope of about 10 feet per mile from the northwest to southeast.

Two relic drainage ways, Sulfur Springs Draw and Lost Draw, cross the District from northwest to southeast. These draws are shallow and are usually dry; they seldom carry runoff water.

Rick Lake and Mound Lake are the largest salt lakes in the District. Around these lakes is the sharpest topographical relief. The eolian hills that border the east sides of these lakes are sometimes 100 feet or more higher than the lakebeds.

Playas, or shallow lakes, are common in areas where fine sandy loam and sandy clay loam soil types prevail. Playas do not occur in the sandier areas. The playas range in size from 2 to 40 acres and provide the only surface drainage in many areas. Aquifer recharge occurs through these playa basins during and after significant rainfall events. Recharge is limited once the clays in the basins swell and effectively stop percolation of groundwater (Sanders, 1961).

## **Groundwater Resources**

The District has jurisdictional authority over all groundwater that lies within the District's boundaries. Three aquifers, the Ogallala, the Cretaceous, and the Dockum occur within the District. The following is a description of these formations that may be beneficial to District constituents by providing useable quantities of groundwater.

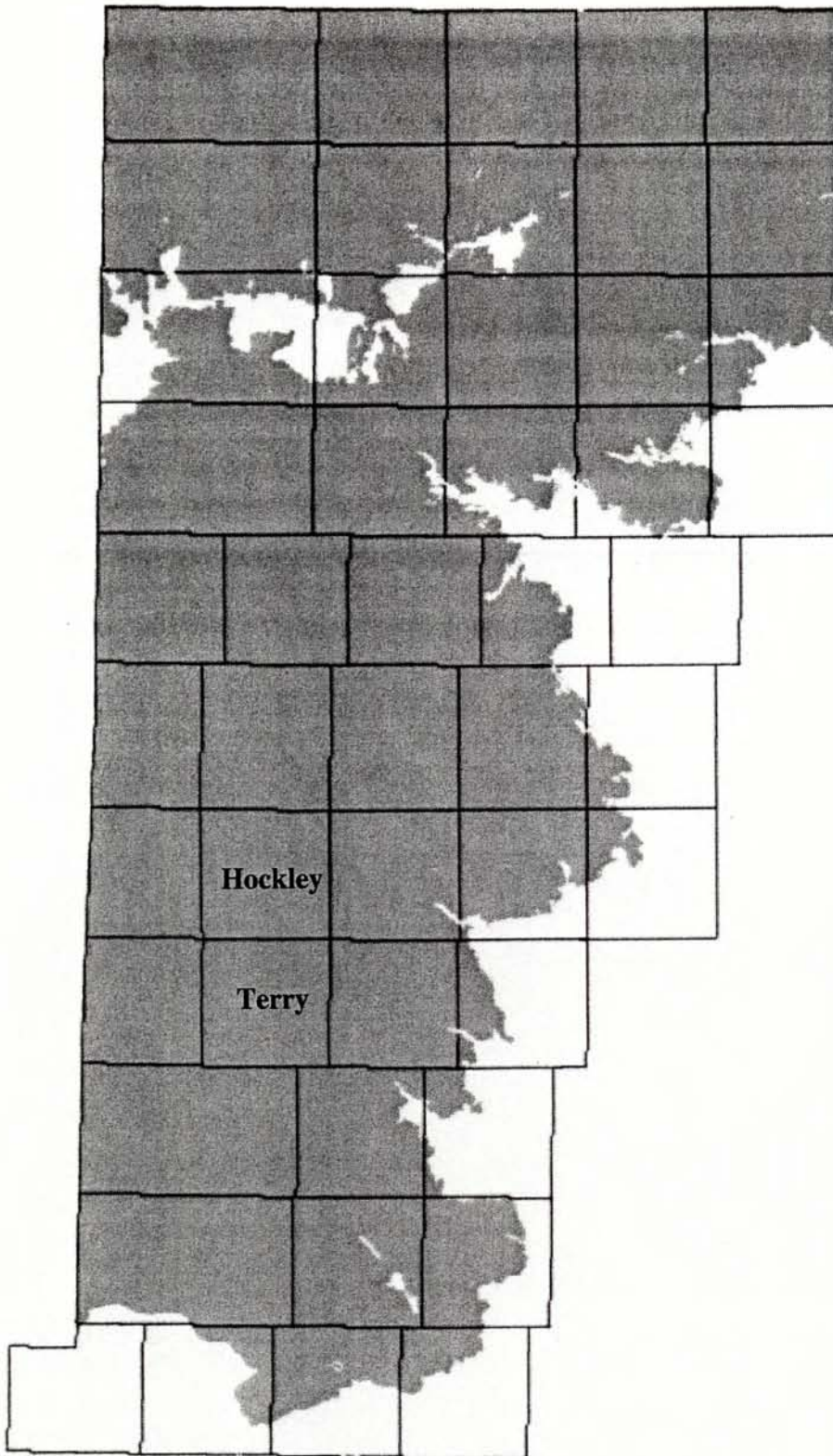
### **Ogallala Aquifer**

The Ogallala Aquifer is the primary source of groundwater in the District (Figure 2). The aquifer extends from the ground surface downward, ranging in thickness from 80 feet to more than 200 feet in the area covered by the District.

The formation consists of heterogeneous sequences of clay, silt, sand and gravel. These sediments are thought to have been deposited by eastward flowing aggrading streams that filled and buried valleys eroded into pre-Ogallala rocks. A resistant layer of calcium carbonate-cemented caliche known locally as the "caprock" occurs near the surface of much of the area (Ashworth and Hopkins, 1995).

Water levels in the Ogallala Aquifer are primarily influenced by the rate of recharge and discharge. Recharge occurs primarily by infiltration of precipitation. GAM studies show that

**Figure 2: Aerial extent of the Ogallala Aquifer in Texas**  
(Adapted from Ashworth and Hopkins, 1995)





recharge is greater beneath irrigated lands. To a lesser extent, recharge may also occur by upward leakage from underlying Cretaceous units that, in places, have a higher water table elevation than the Ogallala. Generally, only a small percentage of water from precipitation actually reaches the water table due to a combination of limited annual precipitation (17.59 inches per year), high evaporation rate (60-70 inches per year), and slow infiltration rate. However, where deep sands are prevalent and the water table is shallow, precipitation may affect recharge rather quickly.

Groundwater in the aquifer generally flows from northwest to southeast, normally at right angles to water level contours. Velocities of less than one foot per day are typical, but higher velocities may occur along filled erosional valleys where coarser grained deposits have greater permeability.

Discharge from the Ogallala aquifer within the District primarily occurs through the pumping of irrigation wells. Groundwater usage typically exceeds recharge and results in water-level declines (Ashworth and Hopkins, 1995).

The chemical quality of Ogallala groundwater varies greatly across the District. Electrical conductance (EC) varies from less than 1.0 dS/m to over 4.0 dS/m. Generally, groundwater in the eastern and southeastern parts of the District exhibits the highest EC. Isolated occurrences of high EC values elsewhere in the District may be due to pollution through oil field salt water disposal pits or upward leakage and mixing from the underlying Cretaceous aquifer.

The suitability of groundwater for irrigation purposes is largely dependent on the chemical composition of the water and is determined primarily by the total concentration of soluble salts. Some farm acreage in the District is already limited to certain varieties of salt tolerant crops due to limiting or damaging total salt levels.

### **Cretaceous Aquifer**

The Edwards-Trinity (High Plains) Aquifer, commonly referred to as the Cretaceous Aquifer, underlies the Ogallala Aquifer throughout the District. In some areas of the District, the Cretaceous and Ogallala Aquifers are hydrologically connected. Groundwater in the Cretaceous is generally fresh to slightly saline. Water quality deteriorates where Cretaceous formations are overlain by saline lakes.

Recharge of the Cretaceous occurs directly from the bounding Ogallala formation. Some upward movement of groundwater from the underlying Triassic Dockum formation may occur (Ashworth and Hopkins, 1995). As mentioned earlier, in some places the water table elevation in the Cretaceous Aquifer is higher than the Ogallala Aquifer, resulting in the upward leakage from the Cretaceous Aquifer. Movement of water in the Cretaceous is generally east to southeast.

### **Dockum Aquifer**

The Dockum Aquifer underlies the Cretaceous and Ogallala formations throughout the District. The primary water-bearing zone in the Dockum group, commonly called the "Santa Rosa", consists of up to 700 feet of sand and conglomerate interbedded with layers of silt and shale



(Ashworth and Hopkins, 1995). Aquifer permeability is typically low and well yields normally do not exceed 300 gpm.

Water quality in the Dockum is the main limiting factor when considering its use within the District (Ashworth and Hopkins, 1995). EC values for Dockum groundwater range from 15.0 dS/m to over 50.0 dS/m. Even the most salt tolerant row crops grown cannot withstand such levels of salinity.

Currently, it seems, the only practical use of Dockum groundwater may be for make-up water in secondary recovery operations of crude oil. By using water from this aquifer, oil companies could reduce their use of Ogallala and/or Cretaceous groundwater, thereby relieving some pressure from the freshwater sources.

### **Surface Water Resources**

The only fresh surface water in the District exists as playa lakes. The playas play an important role in aquifer recharge and support some wildlife when rainfall events are significant enough to cause runoff to accumulate in these naturally occurring depressions. Playas are rarely, if ever, used to support irrigation activities.

As previously mentioned, Rich Lake and Mound Lake are naturally occurring salt lakes within the District. Each of these naturally occurring impoundments support limited wildlife populations, primarily migratory waterfowl and associated opportunistic predators.

Perhaps the most significant surface water resource of benefit to the District is Lake Meredith located on the Canadian River in the Texas Panhandle. The lake is managed by the Canadian River Municipal Water Authority and annually provides approximately 2,000 acre-feet of fresh water to the City of Brownfield.

### **Total Useable Amount of Groundwater**

Since 2000, the District has estimated the volume of groundwater in storage annually. This estimate has been completed after the annual water level measurements are taken each winter. The District has also estimated the volume of groundwater in storage for the years 1985 and 1995 as a historical comparison.

These estimates are developed using a grid of the High Plains Aquifer's base elevation as the lower surface, and a grid of the water table elevation as the upper surface. A specific yield of 15% is assumed as the percent of the volume which is recoverable by gravity.

Although saturated thickness may at some point be too thin for recovery, we have not developed an accurate estimate of such. For example, we have documented cases where users are still pumping irrigation water where the saturated thickness is less than 10 feet. Consequently, the estimated volume in storage numbers are considered as accurate as possible.

Additionally, some groundwater in the District is of very poor quality, such that its use is quite limited. However, for the purposes of this plan, it is assumed that all of the groundwater in the High Plains Aquifer is usable, even if the use is limited. The Southern Ogallala GAM estimates the District's volume of groundwater in storage to be 5.5 million acre-feet for the year 2003. However, the District believes that its estimates are likely more accurate. Previous work also supports the District's estimates of the volume of groundwater in storage (Peckham and Ashworth, 1993). Table 2 contains the District's estimates of the total usable amount of groundwater in the District.

**Table 2: Volume of Groundwater in Storage within the South Plains Underground Water Conservation District (Source: SPUWCD)**

<b>Year</b>	<b>Volume (ac-ft)</b>
1985	4,728,924
1995	5,185,510
2000	4,486,741
2001	4,402,565
2002	4,268,469
2003	4,172,184

### Annual Groundwater Use

Table 3 contains estimates of groundwater use by user category. The municipal, mining and livestock use estimates were adopted from the Region O Water Plan. The irrigation use estimates were obtained from two different sources. The 1998 and 1999 estimates are taken from the TWDB survey of groundwater use. The 2000-2002 irrigation estimates were developed by the SPUWCD. These SPUWCD estimates were compiled from the District's water use survey and meter cooperators.

The estimates of annual groundwater use will be used as a historical comparison when developing future projections of groundwater use.

**Table 3: 1998-2002 Groundwater Use, by Category of Use, in Terry County, Texas (Adopted from Region O Water Plan, TWDB Survey and SPUWCD survey)**

<b>Year</b>	<b>Municipal</b>	<b>Mining</b>	<b>Livestock</b>	<b>Irrigation</b>	<b>Total</b>
<b>1998</b>	*2,242	756	182	253,812	<b>256,992</b>
<b>1999</b>	2,203	996	183	165,233	<b>168,348</b>
<b>2000</b>	2,164	1,236	184	167,764	<b>171,348</b>
<b>2001</b>	2,170	1,213	186	136,044	<b>139,613</b>
<b>2002</b>	2,176	1,191	188	139,606	<b>143,161</b>

\*Volume expressed in acre-feet



**Recharge of the Aquifer System**

Recharge of the aquifer system in the District occurs as : 1) infiltration of precipitation runoff in and around playa lakes, and/or 2) direct infiltration of precipitation into the coarse eolian surface deposits.

The TWDB estimates that the annual recharge quantity for Terry County, Texas, is approximately 44,040 acre-feet per year (Knowles, etal, 1984). Recent studies indicate that recharge rates may be considerably higher on the southern portion of the High Plains (Rainwater, 1998). The Southern Ogallala GAM estimates recharge to be near 72,000 ac-ft/yr from the flow budget during the years 2003-2014. However, the District’s estimates of recharge average near 41,000 ac-ft/yr from the years 2000-2003. So, the GAM recharge estimates are nearer those indicated from the Rainwater study, while the District’s estimates are nearer those of the Knowles study.

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During the next few years there may be additional evidence as more accurate usage estimates become available from the District’s meter cooperators. However, the District’s Board of Directors recognizes that the aquifer recharge is less than usage, resulting in declining water levels.

**Projected Groundwater Supply and Demand**

As mentioned earlier, the District’s Board of Directors understands that, currently, the usage of groundwater exceeds recharge and water levels are declining. However, the Board also realizes that declining water levels have reduced the ability to produce as much groundwater. Consequently, it is estimated that the projected usage of groundwater is likely to decrease over time. While the cycle of groundwater usage typically has highs and lows, the trend is likely declining. In fact, some previously irrigated farms have been converted to dryland farms during recent years.

**Table 4: Projected Groundwater Supply and Demand (Source: Adapted from Revised Projected Demands Adopted by Region O, July 23, 2003)**

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Year	Supply	Demand
2004	132,723	132,723
2009	129,159	129,159
2013	126,440	126,440

During the past year, the Region O Planning Group has revisited the irrigation demand estimates. TWDB estimates of on-farm irrigation water use from 1985-2000 were averaged to develop an intercept point for the year 2000. The slope of the curve for water demand is the same as in the 2001 water plan. Because of expected declining groundwater use, the projected supply is shown equal to demand. The District’s information on groundwater use and changing water levels support the conclusion that this methodology allows users to maintain their livelihood while prolonging the available supply.



## **Management of Groundwater Resources**

The District will manage groundwater resources within its jurisdictional authority, in order to conserve the resource while seeking to maintain the economic viability of the District's constituents. A water level monitoring network has been established to track changes in the total volume of groundwater in storage each year. Likewise, a water quality monitoring network has been established to track water quality changes each year. The District will employ the technical resources at its disposal to monitor and evaluate the groundwater resource and programs designed to encourage conservation of the same. 7

In July, 1999, the Board, after notice and hearing, amended the initial rules of the District. The rules address conservation of the groundwater resources of the District through: well permitting, well spacing, well registration, well completion, pumping limitations, open well capping, and standards for plugging wells. As conditions dictate, and with the approval of the constituents of the District, the Board will consider the modification of the rules to further the mission of the District. When considering modification or enforcement of the rules, the Board will base its decisions on the best technical evidence available. All constituents will be treated equally and fairly when applying the rules of the District. 8

## **Drought Contingency Plan**

Drought is a normal, recurrent feature of climate, although many erroneously consider it a rare and random event. Drought is also a temporary aberration, and differs from aridity, which is restricted to low rainfall regions and is a permanent feature of climate ("What is Drought?", National Drought Mitigation Center). The South Plains Underground Water Conservation District is in an arid region that also experiences drought. However, even in the midst of a drought, rainfall at crucial times of the growing season may significantly reduce irrigation water demand.

Drought response conservation measures typically used in other regions of Texas (i.e. rationing) cannot and are not used in this region due to extreme economic impact potential. In the District, groundwater conservation is stressed at all times. The Board recognizes that irrigated agriculture provides the economic stability to the communities within the District. Therefore, through the notice and hearing provisions required in the development and adoption of this management plan, the Board adopts the official position that, in times of precipitation shortage, irrigated agricultural producers will not be limited to any less usage of groundwater than is provided for by District rules.

In order to treat all other groundwater user groups fairly and equally, the District will encourage more stringent conservation measures, where practical, but likewise, will not limit groundwater use in any way not already provided for by District rules.

## **Regional Water Planning**

The Board of Directors recognizes the regional water plan requirements listed in Ch. 36, TWC, §36.1071. Namely, the District's management plan must be forwarded to the regional water planning group for their consideration in their planning process, and the plan must address water supply needs such that there is no conflict with the approved regional water plan. It is the Board's belief that no such conflict exists.

The Board agrees that the regional water plan should include the District's best data. The Board also recognizes that the regional water planning process provides a necessary overview of the region's water supply and needs. However, the Board also believes it is the duty of the District to develop the best and most accurate information concerning groundwater within the District.

## **Legislative Activity**

The 75<sup>th</sup> Texas Legislature officially recognized groundwater districts as the preferred method of managing groundwater resources (§36.0015, TWC). Since its inception, the District has attempted to communicate with national and state lawmakers to ensure that the property rights and other groundwater related interests of its residents are protected. The Board will continue to support the District's participation in the legislative process, to the greatest extent fiscally possible, to ensure that the interests of the District's residents are represented. The District will attempt to keep the residents informed of legislative activities through news releases, newsletters and public speaking engagements.

## **Weather Modification**

Since 1998, the District has participated in a weather modification program. Beginning 2002, the district is a participant in the Southern Ogallala Aquifer Rainfall Enhancement (SOAR) program, which is administered by the Sandy Land UWCD. Currently, the program contains three groundwater conservation districts: South Plains UWCD, Sandy Land UWCD and the Llano Estacado UWCD. 6

The South Plains UWCD Board of Directors believes that weather modification is a management tool that can help relieve some pressure from our groundwater resources. Rainfall at crucial points of the growing season may mean significantly less groundwater used for irrigation. Additionally, the Board hopes that the benefits of convective cloud seeding will contribute to enhanced recharge of the groundwater resources.

The Board understands that State funding for weather modification has been cut and hopes that local funding remains sufficient for continued participation.



**Goals, Management Objectives and Performance Standards**

**Method for Tracking the District’s Progress in Achieving Management Goals**

The District Manager will prepare an annual report of the District’s performance with regard to achieving management goals and objectives. The report will be prepared in a format that will be reflective of the performance standards listed following each management objective. The report will be presented to the Board within 60 days of the end of each fiscal year. The report will be maintained on file in the open records of the District.

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The District will actively enforce all rules of the District in order to conserve, preserve, protect and prevent the waste of the groundwater resources over which the District has jurisdictional authority. The Board may periodically review the District’s rules, and may modify the rules, with public approval, to better manage the groundwater resources within the District and to carry out the duties prescribed in Chapter 36, Texas Water Code.

**Goal 1.0 Implement management strategies that will protect and enhance the quantity of useable quality groundwater by encouraging the most efficient use.**

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**Management Objective—Water Level Monitoring**

**1.01** Annually, measure the depth to water in 80% or more of the wells in the District’s water level monitoring network; record all measurements and/or observations; enter all measurements into District’s computer data base; file all field notes in District’s filing system; maintain a network of measurement wells of 100 or more wells.

**Performance Standards**

- 1.01a** Percent of water level monitoring wells for which measurements were recorded each year
- 1.01b** Percent of water level monitoring wells for which field notes were written describing reason for inability to obtain measurements each year
- 1.01c** Number of data records entered into District’s data base each year
- 1.01d** Number of wells in the water level measurement network each year
- 1.01e** Number of wells added to the network, if required, each year

**Management Objective—Technical Field Services**

**1.02** On an annual basis, at the request of the constituents of the District, provide technical field services including, but not limited to: flow testing, draw down measurement, sprinkler pattern efficiency testing, and water management strategy consultation. District staff will attempt to fulfill as many requests as possible. Record any observations, measurements, etc. in field log. Enter recorded information in District’s computer database.

**Performance Standards**

- 1.02a** Number of field services requests fulfilled, as evidenced by field log, each year
- 1.02b** Number of records entered into District’s computer database each year



**Management Objective—Laboratory Services**

**1.03** On an annual basis, at the request of the constituents of the District, provide basic water quality testing service to those requesting the service. Maintain a record of all tests performed by entering the results of all tests in the District's computer database. Communicate results to constituents requesting tests.

**Performance Standards**

**1.03a** Number of laboratory service requests fulfilled each year

**1.03b** Number of records entered into District's computer database each year

**1.03c** Number of results communicated to constituents requesting tests each year

**Management Objective—Research and Demonstrations**

**1.04** Considering the District's fiscal resources, participate when practical in opportunities to conduct research or perform demonstrations of methods to protect and enhance the quantity of useable quality groundwater in the District. Record the opportunities to participate and reasons the District did or did not participate in these activities. File notes in the District's filing system.

**Performance Standards**

**1.04a** Percentage of research and demonstration project opportunities in which the District participates each year

**1.04b** Number of records indicating opportunities to participate each year

**Management Objective—Center Pivot Inventory**

**1.05** Beginning in 2003, and again every five years thereafter, perform a physical inventory of the number and type of all irrigation systems in the District. Note which center pivot irrigation systems have Low Energy Precision Application (LEPA) spaced nozzles as a measure of adoption of more efficient irrigation technology. Enter data in District's data base file by block and section.

**Performance Standards**

**1.05a** Number of irrigation systems recorded each documenting period

**1.05b** Percentage of center pivot irrigation systems with LEPA spaced nozzles each documenting period

**1.05c** Number of active irrigation systems by type in District's database

**Goal 2.0** Implement management strategies that will protect and enhance the quantity of usable quality groundwater by controlling and preventing waste.

**Management Objective—Well Permitting and Well Completion**

**2.01** On an annual basis, at the request of the constituents of the District, issue temporary water well drilling permits for the drilling and completion of non-exempt water wells in the District. Inspect all well sites to be assured that

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the District's completion and spacing standards are met. Send written notification to the well owner if the well fails to meet standards. The Board will vote on final approval of the permit at the next regularly scheduled meeting after the well site has been inspected and District well standards have been met.

**Performance Standards**

- 2.01a** Number of water well drilling permits issued each year
- 2.01b** Number of well sites inspected after well completion each year
- 2.01c** Number of well sites that fail to meet the standards of the District each year

**Management Objective—Open, Deteriorated or Uncovered Wells**

**2.02** Annually, the District will inspect all sites reported as open, deteriorated or uncovered wells to substantiate or refute that such a well exists. If an open, deteriorated or uncovered well is found, the District will insure that the open hole is properly closed according to District rules and, in so doing, prevent potential contamination of the groundwater resource. The reports shall be filed on forms provided by the District in order to track the progress of the closure process. The District will contact the party responsible for the open, deteriorated or uncovered well within 30 days of same being reported. The site will be inspected after notification to insure the well closure process occurs within 60 days of the initial contact with the responsible party. If the well is not closed by the end of the 60-day period, the District will pursue the available options at its disposal to get the well violation corrected.

**Performance Standards**

- 2.02a** Number of open, deteriorated or uncovered wells reported to the District each year
- 2.02b** Number of initial inspections accomplished each year
- 2.02c** Average number of days required to make initial contact with responsible party each year
- 2.02d** Average number of days required to complete closure of open or uncovered wells each year
- 2.02e** Number of wells remaining open or uncovered after 60 day period that are closed in accordance with District rules each year

**Management Objective—Maximum Allowable Production**

**2.03** Annually, the District will investigate all reports filed by District constituents, on forms provided by the District, regarding usage of groundwater in excess of the maximum production allowable under the District's rules. Investigation of each occurrence shall occur within 30 days of receiving the report. Each case will be remedied in accordance with District rules.

**Performance Standards**

- 2.03a** Number of reports received each year
- 2.03b** Average amount of time taken to investigate reports each year
- 2.03c** Number of incidences where violations occurred and violators were required to change operations to be in compliance with District rules each year.



**Management Objective—Water Quality Monitoring**

**2.04** Annually, District staff will analyze 75% or more of the water quality network wells for total salts and total chlorides, tracking water quality changes in the District; maintain a network of water quality wells of 100 or more wells. The results of the tests will be published in map form, entered into the District's computer database and will be made available to the public.

**Performance Standards**

- 2.04a** Number of samples collected and analyzed each year
- 2.04b** Percent of previously sampled wells that were sampled in the current testing year
- 2.04c** Number of maps made available to the public each year
- 2.04d** Number of analyses entered into District's computer database each year

**Goal 3.0** **Implement management strategies that will provide public education and information opportunities that will assist in the accomplishment of Goals 1.0 and 2.0**

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**Management Objective—Classroom Education**

**3.01** Annually, the District will sponsor the "*Major Rivers*" (or similar) water conservation education curriculum, for all 4<sup>th</sup> grade schools within the District. Annually, the District will sponsor water conservation education book covers for all public schools within the District.

**Performance Standards**

- 3.01a** Number of 4<sup>th</sup> grade schools where "*Major Rivers*" (or similar) curriculums are distributed each year
- 3.01b** Number of book covers distributed to each school each year

**Management Objective—Newsletter**

**3.02** Annually, the District will produce a minimum of four newsletter editions. Newsletters will be distributed to District constituents and other interested parties. At a minimum, two articles per year will be included that address methods of enhancing and protecting the quantity of useable quality groundwater within the District.

**Performance Standards**

- 3.02a** Number of newsletter editions published each year
- 3.02b** Number of newsletters distributed each year
- 3.02c** Number of articles that address methods of enhancing and protecting the quantity of useable quality groundwater each year

**Management Objective—News Releases**

**3.03** Annually, District staff will prepare a minimum of four news releases, for publication in local newspapers, detailing methods of protecting and enhancing the quantity of useable quality groundwater within the District

**Performance Standards**

**3.03a** Number of news releases prepared for publication in local newspapers detailing methods of protecting and enhancing the quantity of useable quality groundwater within the District each year

**Management Objective—Public Speaking Engagements**

**3.04** Annually, the District staff and/or directors shall present a minimum of four programs that address methods to protect and enhance the quantity of useable quality groundwater in the District

**Performance Standards**

**3.04a** Number of programs that address methods to protect and enhance the quantity of useable quality groundwater in the District presented each year

**Management Objective—Printed Material Resource Center and Technical File**

**3.05** Annually, maintain a self-service printed material resource center in the District office. Annually, inventory items in the center. Through the inventory process, determine the number and type of materials obtained by the public each year. Maintain a technical filing system of resource materials and annually record the number of copies obtained by the public

**Performance Standards**

**3.05a** Number of items, by type, obtained by the public from the resource center each year

**3.05b** Number of items copied and given to the public from the technical file each year

**Goal 4.0** Implement strategies that provide the District's residents information on the status of drought conditions

**Management Objective—Rain Gages**

**4.01** Maintain a network of rain gages in the District. Publish monthly and yearly rainfall totals on the District's web site

**Performance Standards**

**4.01a** Number of rain gages in the network

**4.01b** Number of monthly rain gage readings

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**Goal 5.0 Implement management strategies that educate the District's residents of water conservation techniques and provide information on the remaining amount of useable quality groundwater**

**Management Objective—Saturated Thickness Maps**

**5.01** Every 5 years, beginning 2005, provide saturated thickness maps that show the varying thickness of groundwater remaining in storage. Publish the saturated thickness maps on the District's web site

**Performance Standards**

**5.01a** Number of saturated thickness maps displayed and/or printed at the District office

**Management Objective—Conservation Literature**

**5.02** Maintain a portion of the District's material resource center devoted to water conservation. Stock this portion with conservation tips for both home water conservation and farm conservation

**Performance Standards**

**5.02a** Number of brochures/periodicals dedicated to conservation

**5.02b** Number of conservation brochures/periodicals obtained by the public

**Goals not applicable**

The following goals referenced in Chapter 36, Texas Water Code, have been determined not applicable to the District

- §36.1071(a)(3) Controlling and preventing subsidence
- §36.1071(a)(4) Addressing conjunctive surface water management issues
- §36.1071(a)(5) Addressing natural resource issues

## References

- Ashworth, J. B. and Hopkins, J., 1995, Aquifers of Texas: Texas Water Development Board Report 3445, 69 p.
- Knowles, T., Nordstrom, P. L., and Klemt, W. B., 1984, Evaluating the Groundwater Resources of the High Plains of Texas: Texas Water Development Board Report 341, 34 p.
- Peckham, D. S. and Ashworth, J. B., 1993, The High Plains Aquifer System of Texas, 1980 to 1990 Overview and Projections: Texas Water Development Board Report 341, 34 p.
- Pederson, C. D., et al, 1997, Water for Texas: A Consensus Based Update to the State Water Plan: Texas Water Development Board, 3 vol.
- Rainwater, K., 1998, Personal Communication, Texas Tech University, Lubbock, Texas
- Sanders, D., 1962, Soil Survey of Terry County, Texas, U.S. Government Printing Office, Washington D.C., 57 p.
- Wilhite, Dr. Donald A, Director, "What is Drought?", 2003 World Wide Web, National Drought Mitigation Center, University of Nebraska



# South Plains Underground Water Conservation District



**Directors**

**President**  
Dan Day

**Vice President**  
Matt Hogue

**Secretary**  
Scott Hamm

**Members**  
Doyle Moss  
Larry Yowell

**District Staff**

**General Manager**  
Jason Coleman

**Administrative  
Assistant**  
Lindy Harris

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79316

**Office Location**  
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806-637-7467

**Facsimile**  
806-637-4364

**E-Mail**  
spuwcd@earthlink.net

**Web Page**  
www.spuwcd.org

September 11, 2003

J. Kevin Ward, Executive Administrator  
Texas Water Development Board  
PO Box 13231  
Austin, TX 78711-3231

T W D B  
RECEIVED

SEP 15 2003

ROUTE TO: Rima - Original  
CC TO: KW, BM, RP, TM

Dear Mr. Ward:

Enclosed is the renewed Management Plan for the South Plains Underground Water Conservation District. The Board of Directors of the District believes that the plan has been compiled using the District's best available data, and that no conflict exists with the approved regional water plan.

If there are any questions, please feel free to contact me.

Sincerely,

Jason Coleman, P.E.  
General Manager

JC:lh

Enclosure

# South Plains Underground Water Conservation District



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September 11, 2003

Region O Planning Group  
Attn: Chairman—H. P. Brown, Jr.  
High Plains UWCD #1  
2930 Avenue Q  
Lubbock, TX 79411-2499

13  
(a)

Dear Bo:

As required by Chapter 36, TWC, §36.1071(b), the South Plains Underground Water Conservation District is forwarding its renewed Management Plan to the Region O Water Planning Group.

The information contained in the Plan has been developed using the District's best available data. The District's Board of Directors believes that no conflict exists with the approved Regional Water Plan. However, in order to satisfy the requirements of Chapter 36, the District requests that you review the Plan and let us know if there are any questions.

Sincerely,

Jason Coleman, P.E.  
General Manager

JC:lh  
Enclosure



U.S. Postal Service  
**CERTIFIED MAIL RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

13  
(a)

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09/11/03

Region O Planning Group  
Attn: Jim Conkwright  
High Plains UWCD #1  
2930 Avenue Q  
Lubbock, TX 79411-2499



Instructions

# South Plains Underground Water Conservation District



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September 11, 2003

Kent Satterwhite  
General Manager  
Canadian River Municipal Water Authority  
PO Box 99  
Sanford, TX 79078

Dear Mr. Satterwhite:

In accordance with Chapter 36,1071(a), Texas Water Code, we are providing you with a copy of the Management Plan of the South Plains Underground Water Conservation District.

If you have any comments, please feel free to call.

Sincerely,

Jason Coleman, P.E.  
General Manager

JC:lh  
Enclosure

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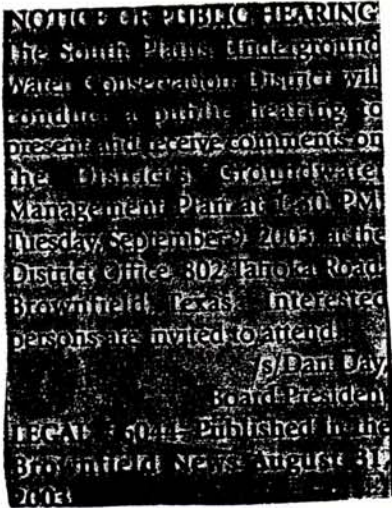
# Affidavit of Publication

STATE OF TEXAS  
COUNTY OF TERRY

I, Lynn Brisendine, Publisher of the

BROWNFIELD NEWS

a newspaper of general circulation, printed and published in the City of Brownfield, County of Terry, State of Texas, do solemnly swear that a copy of the above notice in the matter of



Legal Number 6044

NOTICE OF PUBLIC HEARING

as per clipping attached, was published weekly in the regular and entire edition of the said newspaper, and not in any supplement thereof, for a period of

1 Consecutive issue(s)

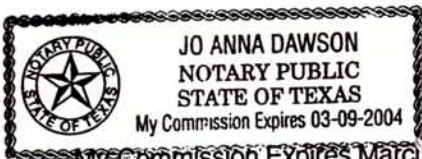
Actual Dates Published

8/31/2003

9-5-03  
# 6054

  
\_\_\_\_\_  
Publisher

Subscribed and sworn before me, this 3rd day of September, 2003



My Commission Expires March 9, 2004

  
\_\_\_\_\_  
Jo Anna Dawson Notary Public

# South Plains Underground Water Conservation District

10



#### **Directors**

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## **Resolution 04-01 Management Plan**

**Whereas**, the South Plains Underground Water Conservation District (the District) was created on April 23, 1991, by Authority of HB 281 of the 72<sup>nd</sup> Texas Legislature; and

**Whereas**, the registered voters of the District confirmed the District's creation in August, 1992; and

**Whereas**, the District adopted a Management Plan effective September 1, 1998 as required by SB 1, 75<sup>th</sup> Texas Legislature;

**Whereas**, the current Management Plan is required by Chapter 36.1072, Texas Water Code, to be renewed every five years;

**Whereas**, the Board of Directors has determined that a revision of the existing Management Plan is warranted; and

**Whereas**, the Board of Directors has determined that the revised Management Plan adequately addresses the requirements of Chapter 36.1071, Texas Water Code; and

**Whereas**, the revised Management Plan shall become effective on September 9, 2003, upon adoption by the Board of Directors of the District and shall remain in effect until August 31, 2008, or until a revised Plan is adopted, whichever occurs first, therefore be it

**Resolved**, that the Board of Directors of the South Plains Underground Water Conservation District hereby adopt the revised Management Plan; and further

**Resolve** that this revised Management Plan shall become effective on September 9, 2003.



Adopted this 9<sup>th</sup> day of September, 2003, by the Board of Directors of the South Plains  
Underground Water Conservation District.

*Dan Day*  
Dan Day, President

*Matt Hogue*  
Matt Hogue, Vice-President

*Scott Hamm*  
Scott Hamm, Secretary

*Doyle Moss*  
Doyle Moss, Member

*Larry Yowell*  
Larry Yowell, Member

STATE OF TEXAS  
COUNTY OF TERRY

This instrument was acknowledged before me on the 9th day of September, 2003.



*Lindy L. Harris*  
Notary Public, State of Texas

Lindy L. Harris  
Printed Name

## Regional Water Planning Area Project Manager Review of Groundwater Conservation District Management Plan for Conflicts With a TWDB Approved Regional Water Plan

<b>Review of the Groundwater Conservation District Management Plan for Conflict With TWDB Approved Regional Water Plan(s)</b>	<b>Yes</b>	<b>No</b>
13(a). Did the District provide a letter by certified mail, return receipt requested to all Regional Water Planning Groups formed under authority of TWC §16.053 (c) in which any part of the District is located, asking the Regional Water Planning Group to review the groundwater management plan and specify any areas of conflict with the Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)	Yes	
13(b). Did any Regional Water Planning Group formed under authority of TWC §16.053 (c) indicate any potential conflict between the groundwater conservation district management plan and a Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)		No <i>(None included w/ plan materials)</i>
13(c). Did reviewer identify any potential conflicts between the management plan and the Texas Water Development Board approved regional water plan? TWC §36.1071 (e)(4), 31TAC §356.6 (a)(5) [If answering Yes, please provide a written explanation]		No
Signify an affirmative response with YES Signify a negative response with NO Signify that a checklist item is not applicable with (N/A)		

13  
(a)

### AFFIRMATION OF COMPLETION OF THE GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN REVIEW PROCESS BY TEXAS WATER DEVELOPMENT BOARD

The undersigned does affirm and attest that the management plan submitted by:

**South Plains Underground Water Conservation District**

has been reviewed and the contents of which have been found to fulfill the requirements of TWC §36.1071 (e)(4) and 31TAC Ch. 356.6 (a)5, as defined by the TWDB groundwater management plan review checklist.

**Temple McKinnon**

O

\_\_\_\_\_, Project Manager for Region \_\_\_\_\_

(Please Print Project Manager's Name)

  
\_\_\_\_\_  
(Project Manager's Signature)

Date 11/4/03