ROLLING PLAINS GROUNDWATER CONSERVATION DISTRICT

MANAGEMENT PLAN

ADOPTED – JUNE 22, 2000
REVISED – July 19, 2001
REVISED- August 18, 2005
REVISED- August 19, 2010

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DISTRICT MISSION

The Rolling Plains Groundwater Conservation District will strive to develop, promote, and implement water conservation, augmentation, and management strategies to protect water resources for the benefit of the citizens, economy, and environment of the district.

STATEMENT OF GUIDING PRINCIPLES

The district recognizes that the groundwater resources of the region are of vital importance. The preservation of this most valuable resource can be managed in a prudent and cost effective manner through education and cooperation. The greatest threat to prevent the district from achieving the stated mission is inappropriate management, based on a lack of understanding of local conditions. A basic understanding of the aquifers and their hydrogeologic properties, as well as a quantification of resources, is the foundation from which to build prudent planning measures. This management document is intended as a tool to focus the thoughts and actions of those given the responsibility for the execution of district activities throughout the ten-year period that is the focus of this plan, i.e. (2010-2020). After five years, the plan will be reviewed, but may be revised at any time in order to maintain consistency or to address any new or revised data, Groundwater Availability Models, Desired Future Conditions, State or Regional Water Plans, or District management strategies.

General Description

The District was created by the citizens of Haskell and Knox Counties through election, January 27, 1999. Baylor County was added to the District after an annexation petition and subsequent referendum on August 12, 2000. Senate Bill 611 of the Seventy-seventh Legislature was signed by the Governor on May 5, 2001. This changed the name of the District and provided for the Board of Directors to be increased to twelve members to include members from Baylor County. The current officers are Ed Murphy-President, Joe Tidwell-Vice-President, and Glenn Ray Howell, Secretary-Treasurer. The other members are Jerry Bob Daniel, Jimmy Burson, Don Brothers, Jim Bridwell, Chris Orsak, David Albus, Bryan Kuehler, Gary Max Coltharp, and Kenny Shipman. Senate Bill 1925 in the Seventy-eighth Legislature further defined the District's properties. The District General Manager is Mike McGuire, who represents Groundwater Conservation Districts as a voting member of RWPG Brazos G and RWPG B. Rolling Plains Groundwater Conservation District (RPGCD) has the same areal extent as that of Baylor, Haskell and Knox Counties, Texas. The Counties have an economy dominated by the agricultural community. The agricultural income is derived primarily from cotton, peanuts, wheat, and beef cattle production. Production of petroleum also contributes to the income of the counties.

Location and Extent

Baylor, Haskell and Knox Counties, having an areal extent of 2667 square miles, are located in northwest central Texas. The counties are bounded on the east by Archer and Throckmorton Counties, on the north by Foard and Wilbarger Counties, on the west by King and Stonewall Counties, and on the south by Jones and Shackelford Counties. Seymour, which is centrally located in the county, is the county seat of Baylor County. Haskell, which is centrally located in the county, is the county seat of Haskell County. Benjamin, which is centrally located in the county, is the county seat of Knox County.

Topography and Drainage

Topographically, the District consists of rolling plains heavily dissected by Brazos and Wichita River drainage. The altitude of the land surface ranges from 1053 to 1681 feet above mean sea level.

Baylor County lies within the drainage system of the Brazos and Wichita River basins. The Brazos River enters the county from the west and traverses through the middle of the county and exits through the southeast corner. The Wichita River enters the county from the west and traverses across the upper half of the county and exits through the northeast corner.

Knox County lies within the drainage system of the Brazos and Wichita River basins. The Brazos River enters the county in the southwest and traverses through the middle of the county and exits through the east side. The Wichita River enters the county from the west and traverses through the middle of the county and exits through the northeast corner.

Haskell County lies within the drainage system of the Brazos River. The Brazos River parallels the western boundary of the county and shows up again in the southeastern corner of the county.

Groundwater Resources of Baylor, Haskell and Knox Counties

The Seymour aquifer is the only source of moderate to large supplies of fresh groundwater in Baylor, Haskell and Knox Counties. No alternative fresh supplies exist from deeper formations. The aquifer underlies 321,220 acres and furnishes water to over 3,000 irrigation wells. Municipal, domestic, and stock supplies are also dependent on the Seymour.

The geologic and hydrologic character of the Seymour is quite variable. Typically, wells are 40 to 60 feet deep and are completed in the lower part of the formation, which normally consists of sand and gravel. Well yields average 270 gallons per minute and are as high as 1,300 gallons per minute. Specific capacities of wells average over 50 gallons per minute per foot of drawdown. Saturated thickness is typically between 20 and 40 feet. Transmissivities range from 20,000 to over 300,000 gallons per day per foot and average 100,000 gallons per day per foot. Ground-water movement rates, unaffected by pumping, average between 800 and 1,200 feet per year.

Nearly all recharge to the Seymour is by direct infiltration of precipitation on the land surface. Analysis of pumpage, water levels, and precipitation over the past 20 years indicates that nearly 55,000 acre-feet per year is available for pumping by wells. Annual pumpage in recent years has ranged from about 30,000 acre-feet to about 70,000 acre-feet, averaging 45,600 acre-feet.

Water quality in the Seymour is variable. The dissolved solids content of natural water from individual wells ranges from about 300 milligrams per liter to 3,000 milligrams per liter. Most values are between 400 and 1,000 milligrams per liter. The best quality water is found in and adjacent to the more important recharge areas. Generally, water quality is satisfactory for irrigation purposes. Most water quality meets state standards for public supplies, except for nitrate content that commonly exceeds the limit of 45 milligrams per liter. Nitrate contents of Seymour water are typically from 30 to 90 milligrams per liter. Available chemical analyses and nitrogen isotope analyses indicate most of the nitrate in the Seymour results from leaching of natural soil nitrate due to cultivation.

The Seymour aquifer is susceptible to pollution from both surface and near surface sources. Over 3,200 past and present, actual and potential, pollution sources exist on the Seymour. Most are only potential sources; actual count is believed to number a few hundred. Existing pollution is due mainly to past pollution sources and activities, and not to current practices. Most existing pollution has been due to oil field brines and septic tank discharge.

It is estimated that about 2 percent of the water in the Seymour aquifer is affected by pollution. About 75 percent of the existing pollution is estimated to be due to the past disposal of oil field brine into unlined surface pits. An estimated 20 percent has been caused by leaky injection wells and unplugged abandoned holes. About 4 percent of existing pollution results from septic tanks, while miscellaneous sources are responsible for 1 percent. Little effect on water quality results from return flow of irrigation water, evapotranspiration, or agricultural application of fertilizer and pesticides.

The portions of the aquifer affected currently by pollution are relatively localized. The portions of the aquifer affected by pollution will increase in the future due to the natural movement of ground water and to the spreading effects caused by pumping wells. However, portions of the aquifier affected by significant pollution will not become extremely large in the future. Significant future pollution problems will be confined mostly to individual properties as opposed to large areas of the aquifer.

Correcting existing pollution can take years, or even decades, and can be very costly. Thus, prevention rather than correction is most important in dealing with ground-water pollution. For past pollution sources, it is possible only to control the resulting pollution plumes either by removal or avoidance measures. Pollution removal measures involve pumping by wells to remove the pollutants from the aquifer. Typically, this is impractical because of the large volumes of water that must be pumped, the relatively long period of time required, and problems regarding disposal of pumped water. Avoidance methods include relocating wells affected by pollution or selective pumping and blending to obtain a quality of water that can be used. These can be effective methods if the pollution is not severe or if the property involved is large, and sufficient quantities of unpolluted water can be obtained.

Currently the District is using the Texas Water Development Board's Groundwater Availability Model (GAM) for the Seymour and Blaine Aquifers. The GAM model uses available datasets to generate digital descriptions of the aquifers. The datasets describe saturated thickness and yield, which the product describes as water in storage. When combined with recharge and production values, these estimates can be used by the District to derive goals for future estimates of available groundwater and necessary production limits. The following two tables are taken from GAM Run 10-021 and summarize the information required for the management plan. The GAM Run in its entirety is attached to the end of the management plan.

Table 1: Summarized information required for the Rolling Plains Groundwater Conservation District's groundwater management plan for the Seymour Aquifer. All values are reported in acre-feet per year. All numbers are rounded to the nearest 1 acre-foot. Reported flow estimates include both fresh and brackish waters present in the aquifers.

Management Plan requirement	Aquifer or confining unit	Results[1]
Estimated annual amount of recharge from precipitation to the district	Seymour Aquifer	105,272
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Seymour Aquifer	16,266
Estimated annual volume of flow into the district within each aquifer in the district	Seymour Aquifer	98
Estimated annual volume of flow out of the district within each aquifer in the district	Seymour Aquifer	1,769
Estimated net annual volume of flow between each aquifer in the district	Net flows leaving Seymour Aquifer and entering underlying Permian Units	7,259

Note 1: A mass balance error of one percent or less is normally considered acceptable for water budgets extracted from numerical flow models (Anderson and Woessner, 1992); however, the water budgets for some stress periods of the groundwater availability model for the Seymour and Blaine aquifers exceeded one percent. After investigating the cause and several alternative approaches to defining the water budget it was determined that, after averaging all 240 stress periods together, the results are reasonable and appropriate for the purposes of the district's management plan.

Estimate of Managed Available Groundwater

On July 22, 2010, the desired future conditions (DFCs) for the Seymour, Dockum, Blaine and Ogallala Aquifers located within Groundwater Management Area (GMA) 6 were adopted. Two of these aquifers, the Seymour and Blaine are located within the Rolling Plains GCD. The Blaine Aquifer in Knox County was determined to be not relevant for the purpose of a desired future condition in GMA 6. Since MAG estimates have not yet been calculated for GMA 6 the requirement to present MAG data in the groundwater management plan is not applicable at this time. Once MAG estimates become available the District will amend the management plan.

Given the small area of coverage and the limited yield of the Blaine Aquifer in Knox County, GMA 6 has determined that this sliver of the Blaine Aquifer is not relevant in regards to the desired future condition in GMA 6. Rolling Plains GCD concurs with this assessment and includes the following table from GAM run 10-021 for information.

Table 2: Summarized information required for the Rolling Plains Groundwater Conservation District's groundwater management plan for the Blaine Aquifer. All values are reported in acre-feet per year. All numbers are rounded to the nearest 1 acre-foot. Reported flow estimates include both fresh and brackish waters present in the aquifers.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Blaine Aquifer	642
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Blaine Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Blaine Aquifer	1,467
Estimated annual volume of flow out of the district within each aquifer in the district	Blaine Aquifer	261
Estimated net annual volume of flow between each aquifer in the district	Net flows leaving Blaine into the Permain Unit	4,119

Surface Water Resources of Baylor, Haskell and Knox Counties

Baylor County has two major reservoirs located on the Wichita River. Lake Kemp and Lake Diversion are owned and operated by the city of Wichita Falls, located outside the District in Wichita County. Baylor County also has a reservoir located on the Brazos River. Millers Creek Reservoir is owned and operated by the North Central Texas Municipal Water Authority, whose member cities are Haskell, Goree, Munday and Knox City.

Haskell County's only surface impoundment used to supply water, other than for livestock consumption, is Lake Stamford. The owner and operator of Stamford Lake is the City of Stamford, located outside the District in Jones County.

Knox County contains no significant surface water resources.

2007 State Water Plan
Projected Surface Water Supplies
Rolling Plains GCD

Baylor County

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
B	Irrigation	Baylor	Brazos	Brazos River Combined Run-of-River Irrigation	17	17	17	17	17	17
B	Livestock	Baylor	Brazos	Livestock Local Supply	333	333	333	333	333	333
B	Livestock	Baylor	Red	Livestock Local Supply	566	566	566	566	566	566
Total Projected Surface Water Supplies (acre-feet per year) =					**916**	**916**	**916**	**916**	**916**	**916**

Source: Volume 3, 2007 State Water Planning Database 1/8/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Haskell County

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
G	County Other	Haskell	Brazos	Millers Creek Lake/ Reservoir	27	23	16	10	6	0
G	County Other	Haskell	Brazos	Stamford Lake/ Reservoir	165	165	165	165	165	165
G	Haskell	Haskell	Brazos	Millers Creek Lake/ Reservoir	225	180	135	90	45	0
G	Irrigation	Haskell	Brazos	Brazos River Combined Run-of-River Irrigation	827	827	827	827	827	827
G	Livestock	Haskell	Brazos	Livestock Local Supply	492	492	492	492	492	492
G	Rule	Haskell	Brazos	Millers Creek Lake/ Reservoir	13	11	8	5	3	0
G	Stamford	Haskell	Brazos	Fort Phantom Hill Lake/ Reservoir	32	31	30	29	28	27
G	Steam Electric Power	Haskell	Brazos	Stamford Lake/ Reservoir	2,200	2,200	2,200	2,200	2,200	2,200
Total Projected Surface Water Supplies (acre-feet per year) =					**3,981**	**3,929**	**3,873**	**3,818**	**3,766**	**3,711**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp) 1/8/2010

Knox County

RWPG	Water User Group	County	River Basin	Source Name	2010	2020	2030	2040	2050	2060
G	County Other	Knox	Brazos	Brazos River Run-of-River	34	34	34	34	34	34
G	County Other	Knox	Brazos	Millers Creek Lake/ Reservoir	32	25	19	13	6	0
G	Irrigation	Knox	Brazos	Brazos River Combined Run-of-River Irrigation	2,948	2,944	2,941	2,937	2,934	2,930
G	Knox City	Knox	Brazos	Millers Creek Lake/ Reservoir	119	95	72	48	24	0
G	Livestock	Knox	Brazos	Livestock Local Supply	510	510	510	510	510	510
G	Livestock	Knox	Red	Livestock Local Supply	530	530	530	530	530	530
G	Munday	Knox	Brazos	Millers Creek Lake/ Reservoir	125	100	75	50	25	0
Total Projected Surface Water Supplies (acre-feet per year) =					**4,298**	**4,238**	**4,181**	**4,122**	**4,063**	**4,004**

Source: Volume 3, 2007 State Water Planning Database 1/8/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Projected Water Supplies of Baylor, Haskell and Knox Counties

The District has determined that groundwater demands of the county will exceed an amount that results in the recoverable volume of water in storage in the Seymour aquifer to be less than today's value on January 1, 2060. Based upon the values derived from the availabilities estimation process, the total usable amount of groundwater from the Seymour aquifer of Baylor, Haskell and Knox Counties is 55,078 acre-feet. Although, data has yet to be determined to judiciously describe the Seymour aquifer, the goal to maintain 100 percent of current recoverable volume in storage to the year 2050 is applicable. This coupled with the quantity of surface water available annually to the District that comes from Millers Creek Reservoir in Baylor County, which is set at this time to a firm yield of 0 acre-feet is the projected total water supply for the District. The total annual estimated amount of projected available water supply for the District is 55,078 acre-feet. This number is constantly being reevaluated based on silt accumulation projections for Millers Creek Reservoir. These concerns have led to RWPG Brazos G to include Augmentation of Millers Creek Reservoir in the 2007 Water Plan with a projected yield of 4870 acre-feet.

2007 State Water Plan
Projected Water Needs
Rolling Plains GCD

Positive values reflect a water surplus; negative values reflect a water need.

Baylor County

RWPG	WUG	County	River Basin	2010	2020	2030	2040	2050	2060
B	County Other	Baylor	Brazos	139	148	174	176	179	180
B	County Other	Baylor	Red	4	8	17	18	19	19
B	Irrigation	Baylor	Brazos	1,367	1,381	1,395	1,409	1,423	1,423
B	Irrigation	Baylor	Red	177	182	188	194	199	199
B	Livestock	Baylor	Brazos	35	35	35	35	35	35
B	Livestock	Baylor	Red	21	21	21	21	21	21
B	Mining	Baylor	Brazos	26	37	42	47	47	47
B	Seymour	Baylor	Brazos	136	199	243	287	315	360
Total Projected Water Needs (acre-feet per year) =				**1,905**	**2,011**	**2,115**	**2,187**	**2,238**	**2,284**

Source:Volume 3, 2007 State Water Planning Database 1/8/2010

(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Haskell County

RWPG	WUG	County	River Basin	2010	2020	2030	2040	2050	2060
G	County Other	Haskell	Brazos	25	37	50	57	67	77
G	Haskell	Haskell	Brazos	-334	-358	-383	-413	-442	-472
G	Irrigation	Haskell	Brazos	-28,805	-27,349	-25,936	-24,564	-23,236	-21,950
G	Livestock	Haskell	Brazos	0	0	0	0	0	0
G	Mining	Haskell	Brazos	-56	-53	-52	-51	-49	-47
G	Rule	Haskell	Brazos	-3	0	4	7	10	13
G	Stamford	Haskell	Brazos	24	23	22	21	20	19
G	Steam Electric Power	Haskell	Brazos	1,778	1,864	1,807	1,738	1,653	1,550
Total Projected Water Needs (acre-feet per year) =				**-29,198**	**-27,760**	**-26,371**	**-25,028**	**-23,727**	**-22,469**

Source:Volume 3, 2007 State Water Planning Database 1/8/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Knox County

RWPG	WUG	County	River Basin	2010	2020	2030	2040	2050	2060
G	County Other	Knox	Brazos	-10	-16	-16	-15	-16	-15
G	County Other	Knox	Red	-11	-11	-10	-9	-8	-7
G	Irrigation	Knox	Brazos	-15,343	-14,318	-13,316	-12,340	-11,387	-10,460
G	Knox City	Knox	Brazos	-106	-134	-153	-174	-195	-216
G	Livestock	Knox	Brazos	0	0	0	0	0	0
G	Livestock	Knox	Red	0	0	0	0	0	0
G	Mining	Knox	Brazos	-3	-3	-3	-3	-3	-3
G	Mining	Knox	Red	0	0	0	0	0	0
G	Munday	Knox	Brazos	-142	-165	-185	-205	-226	-250
	Total Projected Water Needs (acre-feet per year) =			**-15,615**	**-14,647**	**-13,683**	**-12,746**	**-11,835**	**-10,951**

Source:Volume 3, 2007 State Water Planning Database

1/8/2010

(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Total Water Use

The following table represents the annual total water usage for Baylor, Haskell and Knox Counties.

Historical Water Use Estimate Summary

TWDB - Water Use Survey

Rolling Plains GCD

Unit: Acre Feet (ACFT)

GW = groundwater; SW = surface water

Baylor County

Year	Source	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1974	GW	980	15	0	5,364	19	148	6,526
	SW	0	0	0	297	0	553	850
	Total	**980**	**15**	**0**	**5,661**	**19**	**701**	**7,376**
1980	GW	933	5	0	5,998	0	64	7,000
	SW	0	0	0	131	0	533	664
	Total	**933**	**5**	**0**	**6,129**	**0**	**597**	**7,664**
1984	GW	1,091	5	0	1,650	0	60	2,806
	SW	0	0	0	20	0	548	568
	Total	**1,091**	**5**	**0**	**1,670**	**0**	**608**	**3,374**
1985	GW	1,006	5	0	1,532	48	78	2,669
	SW	0	0	0	15	0	715	730
	Total	**1,006**	**5**	**0**	**1,547**	**48**	**793**	**3,399**
1986	GW	983	5	0	2,129	45	82	3,244
	SW	0	0	0	22	0	745	767
	Total	**983**	**5**	**0**	**2,151**	**45**	**827**	**4,011**
1987	GW	1,024	0	0	2,203	42	91	3,360
	SW	0	0	0	22	0	821	843
	Total	**1,024**	**0**	**0**	**2,225**	**42**	**912**	**4,203**
1988	GW	924	0	0	1,543	47	94	2,608
	SW	0	0	0	16	0	853	869
	Total	**924**	**0**	**0**	**1,559**	**47**	**947**	**3,477**
1989	GW	882	0	0	1,837	40	94	2,853
	SW	0	0	0	20	0	856	876
	Total	**882**	**0**	**0**	**1,857**	**40**	**950**	**3,729**
1990	GW	847	0	0	1,630	40	93	2,610
	SW	0	0	0	16	0	843	859
	Total	**847**	**0**	**0**	**1,646**	**40**	**936**	**3,469**

1991	GW	897	0	0	887	40	96	1,920
	SW	0	0	0	9	0	861	870
	Total	**897**	**0**	**0**	**896**	**40**	**957**	**2,790**
1992	GW	957	0	0	1,533	40	96	2,626
	SW	0	0	0	0	0	857	857
	Total	**957**	**0**	**0**	**1,533**	**40**	**953**	**3,483**
1993	GW	930	0	0	1,284	39	110	2,363
	SW	0	0	0	0	0	994	994
	Total	**930**	**0**	**0**	**1,284**	**39**	**1,104**	**3,357**
1994	GW	991	0	0	461	39	99	1,590
	SW	0	0	0	0	0	888	888
	Total	**991**	**0**	**0**	**461**	**39**	**987**	**2,478**
1995	GW	920	0	0	472	39	110	1,541
	SW	0	0	0	0	0	994	994
	Total	**920**	**0**	**0**	**472**	**39**	**1,104**	**2,535**
1996	GW	910	0	0	729	39	56	1,734
	SW	0	0	0	0	0	510	510
	Total	**910**	**0**	**0**	**729**	**39**	**566**	**2,244**
1997	GW	810	0	0	402	39	46	1,297
	SW	0	0	0	0	0	419	419
	Total	**810**	**0**	**0**	**402**	**39**	**465**	**1,716**
1998	GW	796	0	0	1,071	39	109	2,015
	SW	0	0	0	0	0	973	973
	Total	**796**	**0**	**0**	**1,071**	**39**	**1,082**	**2,988**
1999	GW	835	0	0	1,421	39	98	2,393
	SW	0	0	0	0	0	885	885
	Total	**835**	**0**	**0**	**1,421**	**39**	**983**	**3,278**
2000	GW	770	0	0	732	39	99	1,640
	SW	0	0	0	4	0	899	903
	Total	**770**	**0**	**0**	**736**	**39**	**998**	**2,543**
2001	GW	618	0	0	598	39	50	1,305
	SW	0	0	0	6	0	890	896
	Total	**618**	**0**	**0**	**604**	**39**	**940**	**2,201**
2002	GW	551	0	0	1,014	39	51	1,655
	SW	0	0	0	10	0	913	923
	Total	**551**	**0**	**0**	**1,024**	**39**	**964**	**2,578**
2003	GW	768	0	0	1,217	39	60	2,084
	SW	0	0	0	1,078	0	1,081	2,159
	Total	**768**	**0**	**0**	**2,295**	**39**	**1,141**	**4,243**
2004	GW	629	0	0	1,071	39	58	1,797
	SW	0	0	0	1,040	0	1,034	2,074
	Total	**629**	**0**	**0**	**2,111**	**39**	**1,092**	**3,871**

NOTE: All Pumpage reported in acre-feet 1/8/2010

Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=1)

Haskell County

Year	Source	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1974	GW	1,138	40	0	41,646	361	157	43,342
	SW	35	0	1,136	68	0	501	1,740
	Total	**1,173**	**40**	**1,136**	**41,714**	**361**	**658**	**45,082**
1980	GW	388	25	0	39,700	128	60	40,301
	SW	721	0	1,117	528	0	473	2,839
	Total	**1,109**	**25**	**1,117**	**40,228**	**128**	**533**	**43,140**
1984	GW	283	25	0	21,026	115	42	21,491
	SW	829	0	942	0	0	382	2,153
	Total	**1,112**	**25**	**942**	**21,026**	**115**	**424**	**23,644**
1985	GW	244	25	0	10,915	150	37	11,371
	SW	737	0	660	0	0	337	1,734
	Total	**981**	**25**	**660**	**10,915**	**150**	**374**	**13,105**
1986	GW	202	25	0	13,917	142	84	14,370
	SW	737	0	1,052	0	0	339	2,128
	Total	**939**	**25**	**1,052**	**13,917**	**142**	**423**	**16,498**
1987	GW	162	0	0	13,180	133	32	13,507
	SW	704	0	644	0	0	291	1,639
	Total	**866**	**0**	**644**	**13,180**	**133**	**323**	**15,146**
1988	GW	157	0	0	15,679	151	70	16,057
	SW	695	0	647	0	0	280	1,622
	Total	**852**	**0**	**647**	**15,679**	**151**	**350**	**17,679**
1989	GW	221	0	0	26,040	141	69	26,471
	SW	655	0	673	0	0	276	1,604
	Total	**876**	**0**	**673**	**26,040**	**141**	**345**	**28,075**
1990	GW	226	0	0	22,320	141	68	22,755
	SW	599	0	546	0	0	272	1,417
	Total	**825**	**0**	**546**	**22,320**	**141**	**340**	**24,172**
1991	GW	193	0	0	23,329	101	69	23,692
	SW	633	0	371	0	0	278	1,282
	Total	**826**	**0**	**371**	**23,329**	**101**	**347**	**24,974**
1992	GW	159	0	0	22,851	101	158	23,269
	SW	667	0	295	0	0	631	1,593
	Total	**826**	**0**	**295**	**22,851**	**101**	**789**	**24,862**
1993	GW	175	0	0	8,676	101	168	9,120
	SW	653	0	383	0	0	672	1,708
	Total	**828**	**0**	**383**	**8,676**	**101**	**840**	**10,828**
1994	GW	132	0	0	34,313	101	103	34,649
	SW	741	0	443	0	0	411	1,595
	Total	**873**	**0**	**443**	**34,313**	**101**	**514**	**36,244**

1995	GW	176	0	0	32,190	101	110	32,577
	SW	712	0	700	0	0	438	1,850
	Total	**888**	**0**	**700**	**32,190**	**101**	**548**	**34,427**
1996	GW	205	0	0	32,154	101	167	32,627
	SW	778	0	542	0	0	667	1,987
	Total	**983**	**0**	**542**	**32,154**	**101**	**834**	**34,614**
1997	GW	174	0	0	26,297	101	170	26,742
	SW	757	0	454	0	0	680	1,891
	Total	**931**	**0**	**454**	**26,297**	**101**	**850**	**28,633**
1998	GW	168	0	0	36,598	101	108	36,975
	SW	764	0	506	0	0	434	1,704
	Total	**932**	**0**	**506**	**36,598**	**101**	**542**	**38,679**
1999	GW	160	0	0	39,944	101	115	40,320
	SW	822	0	506	0	0	461	1,789
	Total	**982**	**0**	**506**	**39,944**	**101**	**576**	**42,109**
2000	GW	162	0	0	50,820	101	98	51,181
	SW	770	0	507	0	0	393	1,670
	Total	**932**	**0**	**507**	**50,820**	**101**	**491**	**52,851**
2001	GW	161	0	0	30,160	101	96	30,518
	SW	703	0	397	0	0	385	1,485
	Total	**864**	**0**	**397**	**30,160**	**101**	**481**	**32,003**
2002	GW	162	0	0	36,492	101	108	36,863
	SW	706	0	397	0	0	431	1,534
	Total	**868**	**0**	**397**	**36,492**	**101**	**539**	**38,397**
2003	GW	173	0	0	35,154	101	139	35,567
	SW	755	0	400	79	0	555	1,789
	Total	**928**	**0**	**400**	**35,233**	**101**	**694**	**37,356**
2004	GW	149	0	0	36,278	101	145	36,673
	SW	649	0	400	71	0	582	1,702
	Total	**798**	**0**	**400**	**36,349**	**101**	**727**	**38,375**

NOTE: All Pumpage reported in acre-feet 1/8/2010

Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=1)

Knox County

Year	Source	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1974	GW	850	129	0	44,705	115	133	45,932
	SW	0	0	0	293	0	507	800
	Total	**850**	**129**	**0**	**44,998**	**115**	**640**	**46,732**
1980	GW	199	0	0	49,998	0	40	50,237
	SW	706	0	0	0	0	366	1,072
	Total	**905**	**0**	**0**	**49,998**	**0**	**406**	**51,309**

1984	GW	286	0	0	35,142	12	56	35,496
	SW	719	0	0	0	12	517	1,248
	Total	**1,005**	**0**	**0**	**35,142**	**24**	**573**	**36,744**
1985	GW	210	0	0	30,695	12	56	30,973
	SW	732	0	0	0	12	507	1,251
	Total	**942**	**0**	**0**	**30,695**	**24**	**563**	**32,224**
1986	GW	204	0	0	19,850	13	69	20,136
	SW	687	0	0	0	13	629	1,329
	Total	**891**	**0**	**0**	**19,850**	**26**	**698**	**21,465**
1987	GW	170	0	0	15,982	11	60	16,223
	SW	643	0	0	0	11	555	1,209
	Total	**813**	**0**	**0**	**15,982**	**22**	**615**	**17,432**
1988	GW	148	0	0	16,299	12	64	16,523
	SW	697	0	0	0	11	580	1,288
	Total	**845**	**0**	**0**	**16,299**	**23**	**644**	**17,811**
1989	GW	139	0	0	35,361	0	62	35,562
	SW	688	0	0	0	11	573	1,272
	Total	**827**	**0**	**0**	**35,361**	**11**	**635**	**36,834**
1990	GW	120	0	0	32,323	0	62	32,505
	SW	693	0	0	0	11	565	1,269
	Total	**813**	**0**	**0**	**32,323**	**11**	**627**	**33,774**
1991	GW	122	0	0	27,790	14	64	27,990
	SW	729	0	0	0	11	578	1,318
	Total	**851**	**0**	**0**	**27,790**	**25**	**642**	**29,308**
1992	GW	197	0	0	22,326	14	43	22,580
	SW	569	0	0	0	11	385	965
	Total	**766**	**0**	**0**	**22,326**	**25**	**428**	**23,545**
1993	GW	192	0	0	21,109	14	47	21,362
	SW	637	0	0	0	11	420	1,068
	Total	**829**	**0**	**0**	**21,109**	**25**	**467**	**22,430**
1994	GW	184	0	0	28,347	14	97	28,642
	SW	639	0	0	0	11	880	1,530
	Total	**823**	**0**	**0**	**28,347**	**25**	**977**	**30,172**
1995	GW	181	0	0	31,365	15	96	31,657
	SW	642	0	0	0	11	864	1,517
	Total	**823**	**0**	**0**	**31,365**	**26**	**960**	**33,174**
1996	GW	199	0	0	28,662	15	44	28,920
	SW	617	0	0	0	11	398	1,026
	Total	**816**	**0**	**0**	**28,662**	**26**	**442**	**29,946**
1997	GW	177	0	0	16,795	15	48	17,035
	SW	584	0	0	0	11	429	1,024
	Total	**761**	**0**	**0**	**16,795**	**26**	**477**	**18,059**
1998	GW	197	0	0	22,542	15	121	22,875
	SW	647	0	0	0	11	1,088	1,746
	Total	**844**	**0**	**0**	**22,542**	**26**	**1,209**	**24,621**

1999	GW	211	0	0	33,987	15	119	34,332
	SW	511	0	0	0	11	1,068	1,590
	Total	**722**	**0**	**0**	**33,987**	**26**	**1,187**	**35,922**
2000	GW	151	0	0	43,001	15	104	43,271
	SW	585	0	0	123	11	936	1,655
	Total	**736**	**0**	**0**	**43,124**	**26**	**1,040**	**44,926**
2001	GW	172	0	0	28,017	15	53	28,257
	SW	577	0	0	0	26	994	1,597
	Total	**749**	**0**	**0**	**28,017**	**41**	**1,047**	**29,854**
2002	GW	148	0	0	30,358	15	53	30,574
	SW	557	0	0	0	26	998	1,581
	Total	**705**	**0**	**0**	**30,358**	**41**	**1,051**	**32,155**
2003	GW	146	0	0	40,112	15	59	40,332
	SW	541	0	0	0	26	1,103	1,670
	Total	**687**	**0**	**0**	**40,112**	**41**	**1,162**	**42,002**
2004	GW	204	0	0	40,120	15	55	40,394
	SW	553	0	0	0	26	1,039	1,618
	Total	**757**	**0**	**0**	**40,120**	**41**	**1,094**	**42,012**

NOTE: All Pumpage reported in acre-feet 1/8/2010
Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=1)

Groundwater Use in Baylor, Haskell and Knox Counties

The following table represents the annual groundwater usage for Baylor, Haskell and Knox Counties.

Historical Groundwater Pumpage Summary

TWDB - Water Use Survey

Rolling Plains GCD

Unit: Acre Feet (ACFT)

Baylor County

Year	Aquifer	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1980	SEYMOUR	938	0	0	5,998	0	64	7,000
1984	SEYMOUR	1,138	5	0	1,650	0	60	2,853
1985	SEYMOUR	1,058	5	0	1,532	48	78	2,721
1986	SEYMOUR	1,041	5	0	2,129	45	82	3,302

1987	SEYMOUR	1,069	0	0	2,203	42	91	3,405
1988	SEYMOUR	206	0	0	1,543	47	94	1,890
1989	SEYMOUR	928	0	0	1,837	40	94	2,899
1990	SEYMOUR	892	0	0	1,630	40	93	2,655
1991	SEYMOUR	947	0	0	887	40	96	1,970
1992	SEYMOUR	1,006	0	0	1,533	40	96	2,675
1993	SEYMOUR	978	0	0	1,284	39	110	2,411
1994	SEYMOUR	1,047	0	0	461	39	99	1,646
1995	SEYMOUR	972	0	0	472	39	110	1,593
1996	SEYMOUR	971	0	0	729	39	56	1,795
1997	SEYMOUR	865	0	0	402	39	46	1,352
1998	SEYMOUR	849	0	0	1,071	39	109	2,068
1999	SEYMOUR	892	0	0	1,432	39	98	2,461
2000	SEYMOUR	823	0	0	732	39	99	1,693
2001	SEYMOUR	653	0	0	598	39	94	1,384
2002	SEYMOUR	624	0	0	1,014	39	96	1,773
2003	SEYMOUR	657	0	0	1,217	39	242	2,155

NOTE: All Pumpage reported in acre-feet 1/8/2010
Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2)

Haskell County

Year	Aquifer	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1980	OTHER	34	0	0	794	13	22	863
	SEYMOUR	659	0	0	38,906	115	38	39,718
	Total	**693**	**0**	**0**	**39,700**	**128**	**60**	**40,581**
1984	OTHER	9	0	0	420	1	15	445
	SEYMOUR	516	25	0	20,606	114	27	21,288
	Total	**525**	**25**	**0**	**21,026**	**115**	**42**	**21,733**
1985	OTHER	9	0	0	218	1	13	241
	SEYMOUR	438	25	0	10,697	149	24	11,333
	Total	**447**	**25**	**0**	**10,915**	**150**	**37**	**11,574**
1986	OTHER	8	0	0	278	1	122	409
	SEYMOUR	395	25	0	13,639	141	217	14,417
	Total	**403**	**25**	**0**	**13,917**	**142**	**339**	**14,826**

1987	OTHER	7	0	0	264	1	12	284
	SEYMOUR	338	0	0	12,916	132	20	13,406
	Total	**345**	**0**	**0**	**13,180**	**133**	**32**	**13,690**
1988	OTHER	7	0	0	314	1	101	423
	SEYMOUR	347	0	0	15,365	150	179	16,041
	Total	**354**	**0**	**0**	**15,679**	**151**	**280**	**16,464**
1989	OTHER	9	0	0	521	1	25	556
	SEYMOUR	430	0	0	25,519	140	44	26,133
	Total	**439**	**0**	**0**	**26,040**	**141**	**69**	**26,689**
1990	OTHER	15	0	0	447	1	25	488
	SEYMOUR	389	0	0	21,873	140	43	22,445
	Total	**404**	**0**	**0**	**22,320**	**141**	**68**	**22,933**
1991	OTHER	8	0	0	467	1	25	501
	SEYMOUR	370	0	0	22,862	100	44	23,376
	Total	**378**	**0**	**0**	**23,329**	**101**	**69**	**23,877**
1992	OTHER	7	0	0	457	1	57	522
	SEYMOUR	329	0	0	22,394	100	101	22,924
	Total	**336**	**0**	**0**	**22,851**	**101**	**158**	**23,446**
1993	OTHER	0	0	0	174	1	61	236
	SEYMOUR	355	0	0	8,502	100	107	9,064
	Total	**355**	**0**	**0**	**8,676**	**101**	**168**	**9,300**
1994	OTHER	0	0	0	0	1	37	38
	SEYMOUR	339	0	0	34,313	100	66	34,818
	Total	**339**	**0**	**0**	**34,313**	**101**	**103**	**34,856**
1995	OTHER	0	0	0	0	1	40	41
	SEYMOUR	359	0	0	32,190	100	70	32,719
	Total	**359**	**0**	**0**	**32,190**	**101**	**110**	**32,760**
1996	OTHER	0	0	0	0	1	61	62
	SEYMOUR	419	0	0	32,154	100	106	32,779
	Total	**419**	**0**	**0**	**32,154**	**101**	**167**	**32,841**
1997	OTHER	0	0	0	0	1	62	63
	SEYMOUR	352	0	0	26,297	100	108	26,857
	Total	**352**	**0**	**0**	**26,297**	**101**	**170**	**26,920**
1998	OTHER	0	0	0	0	1	39	40
	SEYMOUR	340	0	0	36,598	100	69	37,107
	Total	**340**	**0**	**0**	**36,598**	**101**	**108**	**37,147**
1999	OTHER	0	0	0	0	1	42	43
	SEYMOUR	324	0	0	39,944	100	73	40,441
	Total	**324**	**0**	**0**	**39,944**	**101**	**115**	**40,484**
2000	OTHER	0	0	0	0	1	36	37
	SEYMOUR	328	0	0	50,820	100	62	51,310
	Total	**328**	**0**	**0**	**50,820**	**101**	**98**	**51,347**
2001	OTHER	0	0	0	0	1	35	36
	SEYMOUR	255	0	0	30,160	100	61	30,576
	Total	**255**	**0**	**0**	**30,160**	**101**	**96**	**30,612**

2002	OTHER	0	0	0	0	1	39	40
	SEYMOUR	267	0	0	36,492	100	69	36,928
	Total	**267**	**0**	**0**	**36,492**	**101**	**108**	**36,968**
2003	OTHER	0	0	0	0	1	82	83
	SEYMOUR	283	0	0	35,154	100	144	35,681
	Total	**283**	**0**	**0**	**35,154**	**101**	**226**	**35,764**

NOTE: All Pumpage reported in acre-feet 1/8/2010

Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2)

Knox County

Year	Aquifer	Municipal	Manufacturing	Steam Electric	Irrigation	Mining	Livestock	Total
1980	OTHER	5	0	0	0	0	10	15
	SEYMOUR	194	0	0	49,998	0	30	50,222
	Total	**199**	**0**	**0**	**49,998**	**0**	**40**	**50,237**
1984	OTHER	4	0	0	0	6	14	24
	SEYMOUR	282	0	0	35,142	6	42	35,472
	Total	**286**	**0**	**0**	**35,142**	**12**	**56**	**35,496**
1985	OTHER	2	0	0	0	6	14	22
	SEYMOUR	204	0	0	30,695	6	42	30,947
	Total	**206**	**0**	**0**	**30,695**	**12**	**56**	**30,969**
1986	OTHER	2	0	0	0	7	18	27
	SEYMOUR	202	0	0	19,850	7	51	20,110
	Total	**204**	**0**	**0**	**19,850**	**14**	**69**	**20,137**
1987	OTHER	2	0	0	0	6	15	23
	SEYMOUR	167	0	0	15,982	6	45	16,200
	Total	**169**	**0**	**0**	**15,982**	**12**	**60**	**16,223**
1988	OTHER	2	0	0	0	6	16	24
	SEYMOUR	146	0	0	16,299	6	48	16,499
	Total	**148**	**0**	**0**	**16,299**	**12**	**64**	**16,523**
1989	OTHER	2	0	0	0	0	16	18
	SEYMOUR	136	0	0	35,361	0	46	35,543
	Total	**138**	**0**	**0**	**35,361**	**0**	**62**	**35,561**
1990	OTHER	25	0	0	0	0	16	41
	SEYMOUR	95	0	0	32,323	0	46	32,464
	Total	**120**	**0**	**0**	**32,323**	**0**	**62**	**32,505**
1991	OTHER	24	0	0	0	0	16	40
	SEYMOUR	98	0	0	27,790	14	48	27,950
	Total	**122**	**0**	**0**	**27,790**	**14**	**64**	**27,990**

1992	OTHER	25	0	0	0	0	10	35
	SEYMOUR	172	0	0	22,326	14	33	22,545
	Total	**197**	**0**	**0**	**22,326**	**14**	**43**	**22,580**
1993	OTHER	22	0	0	0	0	10	32
	SEYMOUR	170	0	0	21,109	14	37	21,330
	Total	**192**	**0**	**0**	**21,109**	**14**	**47**	**21,362**
1994	OTHER	16	0	0	0	0	20	36
	SEYMOUR	167	0	0	28,347	14	77	28,605
	Total	**183**	**0**	**0**	**28,347**	**14**	**97**	**28,641**
1995	OTHER	16	0	0	0	0	20	36
	SEYMOUR	163	0	0	31,365	15	76	31,619
	Total	**179**	**0**	**0**	**31,365**	**15**	**96**	**31,655**
1996	OTHER	17	0	0	0	0	9	26
	SEYMOUR	179	0	0	28,662	15	35	28,891
	Total	**196**	**0**	**0**	**28,662**	**15**	**44**	**28,917**
1997	OTHER	18	0	0	0	0	9	27
	SEYMOUR	157	0	0	16,795	15	39	17,006
	Total	**175**	**0**	**0**	**16,795**	**15**	**48**	**17,033**
1998	OTHER	20	0	0	0	0	23	43
	SEYMOUR	175	0	0	22,542	15	98	22,830
	Total	**195**	**0**	**0**	**22,542**	**15**	**121**	**22,873**
1999	OTHER	21	0	0	0	0	22	43
	SEYMOUR	187	0	0	33,987	15	97	34,286
	Total	**208**	**0**	**0**	**33,987**	**15**	**119**	**34,329**
2000	OTHER	15	0	0	0	0	20	35
	SEYMOUR	134	0	0	43,001	15	82	43,232
	Total	**149**	**0**	**0**	**43,001**	**15**	**102**	**43,267**
2001	OTHER	16	0	0	0	0	20	36
	SEYMOUR	110	0	0	28,017	15	86	28,228
	Total	**126**	**0**	**0**	**28,017**	**15**	**106**	**28,264**
2002	OTHER	16	0	0	0	0	20	36
	SEYMOUR	93	0	0	30,358	15	86	30,552
	Total	**109**	**0**	**0**	**30,358**	**15**	**106**	**30,588**
2003	OTHER	18	0	0	0	0	47	65
	SEYMOUR	89	0	0	40,112	15	205	40,421
	Total	**107**	**0**	**0**	**40,112**	**15**	**252**	**40,486**

NOTE: All Pumpage reported in acre-feet 1/8/2010
Source: TWDB Water Use Survey Database (http://www.twdb.state.tx.us/wushistorical/DesktopDefault.aspx?PageID=2)

Projected Demands for Water in Baylor, Haskell and Knox Counties

The TWDB published projected groundwater needs in their planning document Water for Texas-2007. This management planning document is based upon the estimates contained in that document and will be used until alternatives are generated. The TWDB has projected that the total water demands for Baylor, Haskell and Knox Counties will be 97,586 acre-feet per year in 2010. This estimate is based on projections of the following breakdown and population statistics. The city of Seymour will have a demand of 611 acre-feet per year by the year 2010. Its projected population in 2010 is 2,692. The city of Haskell will have a demand of 559 acre-feet per year by the year 2010. Its projected population in 2010 is 3,024. The projected demands and population for the city of Munday are 267 acre-feet per year and 1,520 respectively for 2010. The projected demands and population for Knox City are 225 acre-feet per year and 1,198 respectively for 2010. A projected irrigation demand for Baylor, Haskell and Knox Counties is estimated to be 92,059 acre-feet per year. Projected mining demands are 140 acre-feet per year, and domestic livestock demands are 2485 acre-feet per year for 2010.

The following table represents the projected water demands for Baylor, Haskell and Knox Counties.

2007 State Water Plan
Projected Water Demands
Rolling Plains GCD

Baylor County

RWPG	Water User Group	County	River Basin	2010	2020	2030	2040	2050	2060
B	County Other	Baylor	Brazos	201	192	166	164	161	160
B	County Other	Baylor	Red	76	72	63	62	61	61
B	Irrigation	Baylor	Brazos	487	473	459	445	431	431
B	Irrigation	Baylor	Red	198	193	187	181	176	176
B	Livestock	Baylor	Brazos	353	353	353	353	353	353
B	Livestock	Baylor	Red	600	600	600	600	600	600
B	Mining	Baylor	Brazos	21	10	5	0	0	0
B	Seymour	Baylor	Brazos	611	548	504	460	432	387
Total Projected Water Demands (acre-feet per year) =				**2,547**	**2,441**	**2,337**	**2,265**	**2,214**	**2,168**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

1/8/2010

Haskell County

RWPG	Water User Group	County	River Basin	2010	2020	2030	2040	2050	2060
G	County Other	Haskell	Brazos	235	221	203	192	180	166
G	Haskell	Haskell	Brazos	559	538	518	503	487	472
G	Irrigation	Haskell	Brazos	49,309	47,844	46,422	45,040	43,702	42,405
G	Livestock	Haskell	Brazos	492	492	492	492	492	492
G	Mining	Haskell	Brazos	93	91	90	89	88	87
G	Rule	Haskell	Brazos	81	77	72	69	66	62
G	Stamford	Haskell	Brazos	8	8	8	8	8	8
G	Steam Electric Power	Haskell	Brazos	422	336	393	462	547	650
Total Projected Water Demands (acre-feet per year) =				**51,199**	**49,607**	**48,198**	**46,855**	**45,570**	**44,342**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

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Knox County

RWPG	Water User Group	County	River Basin	2010	2020	2030	2040	2050	2060
G	County Other	Knox	Brazos	190	192	188	184	181	178
G	County Other	Knox	Red	27	27	27	26	26	25
G	Irrigation	Knox	Brazos	42,065	41,033	40,025	39,041	38,082	37,147
G	Knox City	Knox	Brazos	225	229	225	222	219	216
G	Livestock	Knox	Brazos	510	510	510	510	510	510
G	Livestock	Knox	Red	530	530	530	530	530	530
G	Mining	Knox	Brazos	9	9	9	9	9	9
G	Mining	Knox	Red	17	17	17	17	17	17
G	Munday	Knox	Brazos	267	265	260	255	251	250
Total Projected Water Demands (acre-feet per year) =				**43,840**	**42,812**	**41,791**	**40,794**	**39,825**	**38,882**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

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Potential Demand, Supply Issues and Solutions

Based on all calculations and projections it is obvious that issues will arise when demands exceed supplies. The District will use all regulatory statutes available to encourage the cities of Baylor, Haskell and Knox Counties to develop conservation plans and additional surface water supplies. The District anticipates that these cities may also have problems meeting needs during periods of drought. Through cooperation with the cities and water providers, the District with its representation on the RWPGs Brazos G and B has been able to facilitate inclusion into the State Water Plan of two projects to provide for the future water supplies to meet the needs of the residents of Baylor, Haskell and Knox Counties. These projects are the Millers Creek Augmentation and the Emergency Interconnect to Millers Creek Reservoir. These projects are listed in the following table of Projected Water Management Strategies.

2007 State Water Plan
Projected Water Management Strategies
Rolling Plains GCD

Baylor County

RWPG	WUG	WUG County	River Basin	Water Management Strategy	Source Name	Source County	2010	2020	2030	2040	2050	2060
B	County Other	Baylor	Brazos	Emergency Interconnect Millers Creek Reservoir	Millers Creek Lake/ Reservoir	Reservoir	125	125	125	125	125	125
B	Seymour	Baylor	Brazos	Emergency Interconnect Millers Creek Reservoir	Millers Creek Lake/ Reservoir	Reservoir	125	125	125	125	125	125
Total Projected Water Management Strategies (acre-feet per year) =							**250**	**250**	**250**	**250**	**250**	**250**

Source: Volume 3, 2007 State Water Planning Database 1/8/2010
(http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp)

Haskell County

RWPG	WUG	WUG County	River Basin	Water Management Strategy	Source Name	Source County	2010	2020	2030	2040	2050	2060
G	Mining	Haskell	Brazos	Additional Seymour Aquifer Development	Seymour Aquifer	Haskell	53	48	46	45	43	41
G	Irrigation	Haskell	Brazos	Brush Control and Range Management	Brush Control	Haskell	0	0	0	0	0	0
G	Irrigation	Haskell	Brazos	Irrigation Water Conservation	Conservation	Haskell	1,479	2,392	3,250	3,153	3,059	2,968
G	Haskell	Haskell	Brazos	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	500	500	500	500	500	500
G	Rule	Haskell	Brazos	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	50	50	50	50	50	50
G	Mining	Haskell	Brazos	Mining Water Conservation	Conservation	Haskell	3	5	6	6	6	6
G	Haskell	Haskell	Brazos	Municipal Water Conservation	Conservation	Haskell	23	47	36	26	19	18
G	Irrigation	Haskell	Brazos	Weather Modification	Weather Modification	Haskell	0	0	0	0	0	0
Total Projected Water Management Strategies (acre-feet per year) =							**2,108**	**3,042**	**3,888**	**3,780**	**3,677**	**3,583**

Source: Volume 3, 2007 State Water Planning Database 1/8/2010

Knox County

RWPG	WUG	WUG County	River Basin	Water Management Strategy	Source Name	Source County	2010	2020	2030	2040	2050	2060
G	Mining	Knox	Brazos	Additional Seymour Aquifer Development	Seymour Aquifer	Haskell	2	2	1	1	1	1
G	Irrigation	Knox	Brazos	Brush Control and Range Management	Brush Control	Knox	0	0	0	0	0	0
G	Irrigation	Knox	Brazos	Irrigation Water Conservation	Conservation	Knox	1,262	2,052	2,802	2,733	2,666	2,600
G	County Other	Knox	Brazos	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	35	35	35	35	35	35
G	County Other	Knox	Red	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	15	15	15	15	15	15
G	Knox City	Knox	Brazos	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	250	250	250	250	250	250
G	Munday	Knox	Brazos	Millers Creek Augmentation	Millers Creek Lake/ Reservoir	Reservoir	250	250	250	250	250	250
G	Mining	Knox	Brazos	Mining Water Conservation	Conservation	Knox	1	1	2	2	2	2
G	Knox City	Knox	Brazos	Municipal Water Conservation	Conservation	Knox	9	21	17	13	11	11
G	Munday	Knox	Brazos	Municipal Water Conservation	Conservation	Knox	10	25	20	15	11	10
G	Irrigation	Knox	Brazos	Weather Modification	Weather Modification	Knox	0	0	0	0	0	0
Total Projected Water Management Strategies (acre-feet per year) =							**1,834**	**2,651**	**3,392**	**3,314**	**3,241**	**3,174**

Source: Volume 3, 2007 State Water Planning Database (http://www.twdb.state.tx.us/DATA/db07/defaultReadOnly.asp) 1/8/2010

Management of Groundwater Supplies

The District will manage the supply of groundwater within the District, in order to conserve the resource while seeking to maintain the economic viability of all resource user groups, public and private. In consideration of the economic and cultural activities occurring within the District, the District will continue to identify and engage in such activities and practices, which if implemented, would result in preservation and protection of the groundwater. The observation network will continue to be reviewed and maintained in order to monitor changing conditions of groundwater within the District. The District will undertake investigations of the groundwater resources within the District and will make the results of investigations available to the public.

The District will adopt, as necessary, rules to regulate groundwater withdrawals by means of spacing and/or production limits. The relevant factors to be considered in making the determination to grant a permit or limit groundwater withdrawal, will include:

1. The purpose of the District and its rules;
2. The equitable conservation and preservation of the resource; and
3. The economic hardship resulting from granting or denying a permit or the terms prescribed by the rules.

In pursuit of the District's mission of preserving and protecting the resource, the District will enforce the terms and conditions of permits and the rules of the District by enjoining the permit holder in a court of competent jurisdiction, as provided for in TWC Chapter 36.102, if necessary.

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 Rolling Plains Groundwater 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 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.

Actions, Procedures, Performance and Avoidance for Plan Implementation

The District will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all District activities. All operations of the District, all agreements entered into by the District, and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan.

The District will adopt, as necessary, rules relating to the implementation of this plan. The rules adopted by the District shall be pursuant to TWC Chapter 36 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available.

The District shall treat all citizens with equality. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local characteristics. In granting of discretion to any rule, the Board shall consider the potential for adverse effect on adjacent owners and aquifer conditions. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.

The methodology that the District will use to trace its progress on an annual basis in achieving all of its management goals will be as follows:
The District manager will prepare and present an annual report to the Board of Directors on District performance in regards to achieving management goals and objectives (during the first quarterly Board of Directors meeting each fiscal year, beginning October 1, 2010). The report will include the number of instances each activity was engaged in during the year.

The annual report will be maintained on file at the District office.

GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

Goal 1.0 **Provide for Most Efficient Use of Groundwater Within the District.**

1.1. Management Objective

Each year, on four (4) or more occasions, the District will disseminate educational information relating to conservation practices for the efficient use of water resources. These will include but are not limited to publications from the Texas Water Development Board, Texas Natural Resource Conservation Commission, Texas Agricultural Extension Service, and other resources.

1.1a Performance Standard

Number, annually, on four (4) or more occasions, the District disseminated educational information relating to conservation practices for the efficient use of water resources.

1.2. Management Objective

Each year the District will monitor five (5) or more selected wells within the District for possible contamination problems, which would jeopardize the integrity of the groundwater by collecting samples for analysis**.**

1.2a Performance Standard

Number of samples collected and analyzed each year on five (5) or more wells.

1.2b Performance Standard

Number of contamination problems each year.

Goal 2.0 **Control and Prevent Waste of Groundwater Within the District.**

2.1. Management Objective

Each year, on two (2) or more occasions, the District will disseminate educational/informational materials directed toward preventing the waste of groundwater**.**

2.1a Performance Standard

Number, annually, of two (2) or more occasions the District disseminated educational/informational materials directed toward preventing waste of water each year.

Goal 3.0 **Implement Strategies that provide the District's residents information on the status of drought conditions**

3.1. Management Objective

Each year the District will cooperate with the Natural Resource Conservation Service, the Texas Agricultural Extension Service, and the West Texas Mesonet in providing weather data on a daily basis for residents of the District. This data will be disseminated by a Texas Agricultural Extension Service web site **http://texaset.tamu.edu**, the West Texas Mesonet website **http://www.mesonet.ttu.edu**, and the Agricultural Drought Task Force website **http:/agrilife.tamu.edu/drought**. The web sites will provide assistance in calculation of the evapotranspiration rate (ET) of crops and lawns, to provide for efficient watering of these plants and awareness of drought conditions.

3.1a Performance Standard

Number, annually, of one (1) or more weather stations that the District maintains to provide data collection to these cooperating agencies.

3.2. Management Objective

Each year, the District will cooperate with the Texas Water Development Board in monitoring wells that may be used to implement drought planning and providing for this information to be available on the Internet.

3.2a Performance Standard

Number, annually, of one (1) or more on-line wells the District assists in the collection and dissemination of well levels.

3.2b Performance Standard

Prepare a report reflecting the results of the water level monitor to the Board at the first quarterly meeting each fiscal year, beginning October 2010, for a yearly comparison.

Goal 4.0 **Provide for Conservation of Groundwater Within the District.**

4.1. Management Objective

Each year, on four (4) or more occasions, the District will disseminate educational information relating to conservation of water resources. These will include but are not limited to publications from the Texas Water Development Board, Texas Natural Resource Conservation Commission, Texas Agricultural Extension Service, and other resources.

4.1a Performance Standard

Number, annually, on four (4) or more occasions, the District disseminated educational information relating to conservation of water resources.

4.2. Management Objective

Each year the District will monitor water levels in five (5) or more selected wells within the District.

4.2a Performance Standard

Number of water levels taken each year on five (5) or more selected wells.

4.2b Performance Standard

Prepare a report reflecting the results of the annual water level program to the Board at the first quarterly meeting each fiscal year, beginning October 2010, for a yearly comparison of water level averages.

Goal 5.0 **Address in a Quantitative Manner the Desired Future Condition (DFC) of the Groundwater Resources Within the District.**

5.1. Management Objective

Annually, The District will review its permit and well registration in light of the Desired Future Conditions of the groundwater resources within the boundaries of the District to assess whether the District is on target to meet the Desired Future Conditions estimates submitted to the TWDB.

5.1a Performance Standard

The District's Annual Report will include a discussion of the District's permit and well registration and will evaluate the District's progress in achieving the Desired Future Conditions of the groundwater resources within the boundaries of the District and whether the District is on track to maintain the Desired Future Conditions estimates over the 50 year planning period.

5.2. Management Objective

Each year the District will monitor water levels in five (5) or more selected wells within the District.

5.2a Performance Standard

The District will annually sample the water levels in at least five monitoring wells within the District and will determine the five-year water level averages based on the samples taken. The District will compare the five-year water level averages to the corresponding five-year increment of its Desired Future Conditions in order to track its progress in achieving the Desired Future Conditions.

5.2b Performance Standard

The District's Annual Report will include the water level samples taken each year for the purpose of measuring water levels to assess the District's progress towards achieving its Desired Future Conditions. Once the District has obtained water level samples for five consecutive years and is able to calculate water level averages over five-year periods thereafter, the District will include a discussion of its comparison of water level averages to the corresponding five-year increment of its Desired Future Conditions in order to track its progress in achieving its Desired Future Conditions.

<u>Goal 6.0</u> Provide for Conjunctive Surface Water Issues

6.1. Management Objective

Each year, on three (3) or more occasions, the District manager will attend meetings of Region B, Region O or Brazos G RWPG to remain current with surface water issues.

6.1a Performance Standard

Number, annually, on three (3) or more occasions, the District manager attends RWPG meetings.

SB-1 MANAGEMENT GOALS DETERMINED NOT-APPLICABLE

1.0 Control and Prevention of Subsidence.

The rigid geologic framework of the region precludes significant subsidence from occurring. *Therefore, the management goal for controlling subsidence within the District is not applicable to the operations of the District*.

2.0 Cooperative Resolution of Natural Resource Management Issues.

The District has no documented occurrences of endangered or threatened species dependent upon groundwater resources. *Therefore, the management goal for addressing natural resource issues which impact the use and availability of groundwater and which are impacted by the use of groundwater in the District is not applicable to the operations of the District.*

3.0 Recharge Enhancement.

The District has determined that this goal is not presently appropriate or cost-effective. *Therefore, the management goal of Recharge Enhancement within the District is not applicable to the operations of the District*.

4.0 Rainwater Harvesting.

The District has determined that this goal is not presently appropriate or cost-effective. *Therefore, the management goal of Rainwater Harvesting within the District is not applicable to the operations of the District*.

5.0 Precipitation Enhancement.

The District has determined that this goal is not presently appropriate or cost-effective. *Therefore, the management goal of Precipitation Enhancement within the District is not applicable to the operations of the District*.

6.0 Brush Control.

The District has determined that this goal is not presently appropriate or cost-effective. *Therefore, the management goal of Brush Control within the District is not applicable to the operations of the District*.

* Summary definitions.
Optimal- Shall be derived from the minimum number of observations determined by spatial, temporal, and District resource constraints to adequately describe the aquifer system and responses to external influences.

Waste - as defined by Chapter 36 of Texas Water Code means any one or more of the following:

1. Withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock-raising purposes;

2. The flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;

3. Escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;

4. Pollution or harmful alteration of groundwater in a groundwater reservoir by salt water or by other deleterious matter admitted from another stratum or from the surface of the ground;

5. Willfully or negligently causing, suffering, or allowing 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 unless such discharge is authorized by permit, rule, or order issued by the Commission under Chapter 26 of the Texas Water Code;

6. 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; or

7. For water produced from an artesian well, waste has the meaning assigned by Section 11.205 of the Texas Water Code.

Abandoned Well - shall mean a well or borehole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water Well Driller's Act, Texas Natural Resource Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, if presumed to be an abandoned or deteriorated well.

District- the Rolling Plains Groundwater Conservation District.

Board- the Board of Directors of the Rolling Plains Groundwater Conservation District.

GAM Run 10-021

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Groundwater Availability Modeling Section
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July 20, 2010

Mohammad Masud Hassan is a Hydrologist in the Groundwater Availability Modeling Section and is responsible for the work performed. The seal appearing on this document was authorized by Mohammad Masud Hassan, P.E.95699 on July 20, 2010.

EXECUTIVE SUMMARY:

Texas State Water Code, Section 36.1071, Subsection (h), states that, in developing its groundwater management plan, a groundwater conservation district shall use groundwater availability modeling information provided by the Executive Administrator of the Texas Water Development Board in conjunction with any available site-specific information provided by the district for review and comment to the Executive Administrator. Information derived from groundwater availability models that shall be included in the groundwater management plan includes:

(1) the annual amount of recharge from precipitation to the groundwater resources within the district, if any;
(2) for each aquifer within the district, the annual volume of water that discharges from the aquifer to springs and any surface water bodies, including lakes, streams, and rivers; and
(3) the annual volume of flow into and out of the district within each aquifer and between aquifers in the district.

The purpose of this model run is to provide information to Rolling Plains Groundwater Conservation District for its groundwater management plan. The groundwater management plan for the Rolling Plains Groundwater Conservation District was due for approval by the Executive Administrator of the Texas Water Development Board before October 17, 2010.

This report discusses the method, assumptions, and results from model runs using the groundwater availability models for the Seymour Aquifer, and the Blaine Aquifer. Tables 1 through 2 summarize the groundwater availability model data required by the statute, and figures 1 through 2 show the area of each model from which the values in Tables were extracted.

METHODS:

We ran the groundwater availability model for the Seymour and Blaine aquifers and (1) extracted water budgets for each month of the 1980 through 1999 period and (2) averaged the annual water budget values for recharge, surface water outflow, inflow to the district, outflow from the district, net inter-aquifer flow (upper), and net inter-aquifer flow (lower) for the portions of the Seymour and Blaine aquifers located within the district.

PARAMETERS AND ASSUMPTIONS:

Seymour and Blaine aquifers

- We used the command line Version 1.01 of the groundwater availability model for the Seymour and Blaine aquifers. See Ewing and others (2004) for assumptions and limitations of the groundwater availability model for the Seymour and Blaine aquifers.
- We used USGS MODFLOW-2000 code version 1.15.01 to run the model for the Seymour and Blaine aquifers. The GMG solver input file that accompanied the original model was modified to be consistent with the format required by version 1.15.01. The GMG input file that accompanied the original model

(Ewing and others, 2004) did not include inputs for semi-coarsening, ISC, and relaxation, RELAX, parameters. Default values of 1 were used for both.

- The MODFLOW-2000 executable from Ewing and others (2004) for the Seymour and Blaine aquifers was modified from standard MODFLOW-2000 to write multiple cell-by-cell budget files. In order to run the model using USGS MODFLOW-2000 version 1.15.01 and to use the output for further post-processing with ZONEBUDGET, the stream, recharge, well, evapotranspiration, and drain files were modified to write cell-by-cell flows to unit 50. Also, the name file was modified to explicitly specify output file names, as is required in standard MODFLOW-2000.

- The groundwater availability model includes two layers, representing the Seymour (Layer 1) and Blaine (Layer 2) aquifers. In areas where the Blaine Aquifer does not exist the model roughly replicates the various Permian units located in the study area.

- The root mean square error (a measure of the difference between simulated and actual water levels during model calibration) of the entire model for the period of 1990 to 1999 ranges from 19.6 feet (Seymour Aquifer) to 26.4 feet (Blaine Aquifer), representing one percent and three percent of the range of measured water levels respectively (Ewing and others, 2004).

- All stress periods of the groundwater availability model for the Seymour and Blaine aquifers are monthly. The current model run for 1980 through 1999, therefore, consisted of 240 individual stress periods.

RESULTS:

A groundwater budget summarizes the amount of water entering and leaving the aquifer according to the groundwater availability model. Selected components were extracted from the groundwater budget for the aquifers located within the district and averaged over the duration of the calibration and verification portion of the model run (1980 through 1999 for the Seymour and Blaine aquifers) in the district, as shown in Table 1 through Table 2. The components of the modified budgets shown in Tables include:

- Precipitation recharge - This is the aerially distributed recharge sourced from precipitation falling on the outcrop areas of the aquifers (where the aquifer is exposed at land surface) within the district.

- Surface water outflow -This is the total water exiting the aquifer (outflow) to surface water features such as streams, reservoirs, and drains (springs).

- Flow into and out of district - This component describes lateral flow within the aquifer between the district and adjacent counties.

- Flow between aquifers - This describes the vertical flow, or leakage, between aquifers or confining units. This flow is controlled by the relative water levels in each aquifer or confining unit and aquifer properties of each aquifer or confining unit that define the amount of leakage that occurs. “Inflow” to an aquifer from an overlying or underlying aquifer will always equal the “Outflow” from the other aquifer.

The information needed for the district’s management plan is summarized in tables 1 through 2. It is important to note that sub-regional water budgets are not exact. This is due to the size of the model cells and the approach

used to extract data from the model. To avoid double accounting, a model cell that straddles a political boundary, such as district or county boundaries, is assigned to one side of the boundary based on the location of the centroid of the model cell. For example, if a cell contains two counties, the cell is assigned to the county where the centroid of the cell is located (see figures 1 to 2).

The areas from which water budgets were extracted were different for each layer of the groundwater availability model for the Seymour and Blaine aquifers. In layer 1, all active model cells within the district were used, representing the Seymour Aquifer. In Layer 2, only those active cells within the district representing the Blaine Aquifer were used. Active model cells within the district representing other Permian sediments were excluded in Layer 2. Net flows within the district from the Blaine to the other Permian sediments and from the other Permian sediments to the Blaine are included in the last row of table 2.

Table 1: Summarized information required for the Rolling Plains Groundwater Conservation District's groundwater management plan for the Seymour Aquifer. All values are reported in acre-feet per year. All numbers are rounded to the nearest 1 acre-foot. Reported flow estimates include both fresh and brackish waters present in the aquifers.

Management Plan requirement	Aquifer or confining unit	Results[1]
Estimated annual amount of recharge from precipitation to the district	Seymour Aquifer	105,272
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Seymour Aquifer	16,266
Estimated annual volume of flow into the district within each aquifer in the district	Seymour Aquifer	98
Estimated annual volume of flow out of the district within each aquifer in the district	Seymour Aquifer	1,769
Estimated net annual volume of flow between each aquifer in the district	Net flows leaving Seymour Aquifer and entering underlying Permian Units	7,259

Note 1: A mass balance error of one percent or less is normally considered acceptable for water budgets extracted from numerical flow models (Anderson and Woessner, 1992); however, the water budgets for some stress periods of the groundwater availability model for the Seymour and Blaine aquifers exceeded one percent. After investigating the cause and several alternative approaches to defining the water budget it was determined that, after averaging all 240 stress periods together, the results are reasonable and appropriate for the purposes of the district's management plan.

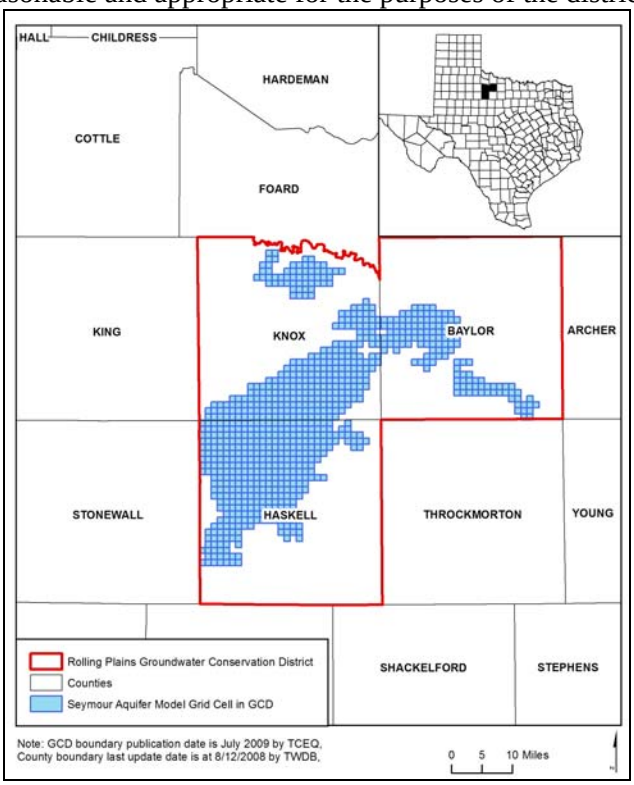

Figure 1: Area of the groundwater availability model for the Seymour Aquifer from which the information in Table 1 was extracted (the aquifer extent within the Rolling Plains Groundwater Conservation District boundary).

Table 2: Summarized information required for the Rolling Plains Groundwater Conservation District's groundwater management plan for the Blaine Aquifer. All values are reported in acre-feet per year. All numbers are rounded to the nearest 1 acre-foot. Reported flow estimates include both fresh and brackish waters present in the aquifers.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Blaine Aquifer	642
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Blaine Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Blaine Aquifer	1,467
Estimated annual volume of flow out of the district within each aquifer in the district	Blaine Aquifer	261
Estimated net annual volume of flow between each aquifer in the district	Net flows leaving Blaine into the Permain Unit	4,119

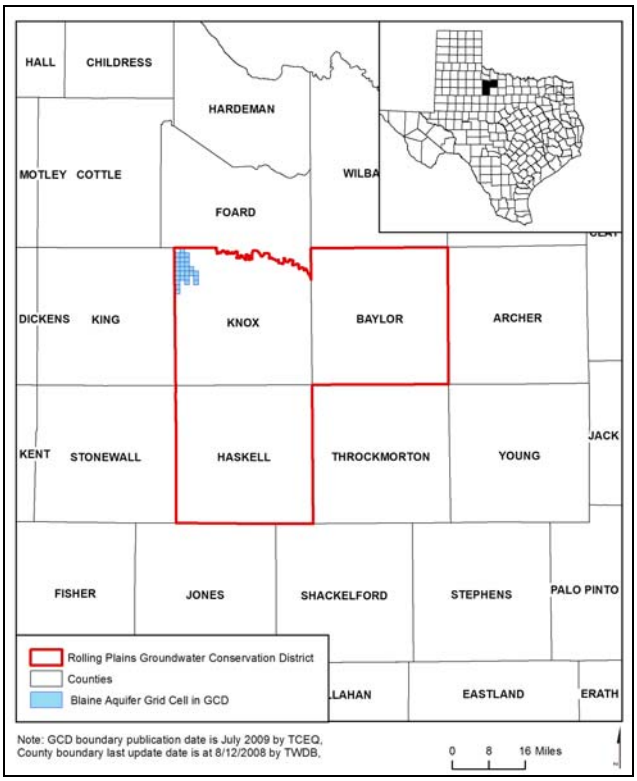

Figure 2: Area of the groundwater availability model for the Blaine Aquifer from which the information in Table 2 was extracted (the aquifer extent within the Rolling Plains Groundwater Conservation District boundary).

REFERENCES:

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Rules of the Rolling Plains Groundwater Conservation District

ORIGINALLY ADOPTED: January 18, 2001

REVISED: July 19, 2001

REVISED: December 19, 2002

REVISED: April 17, 2003

REVISED: September 18, 2003

The rules of the Rolling Plains Groundwater Conservation District, as amended, are hereby published, as of September 18, 2003:

In accordance with Section 59 of Article XVI of the Texas Constitution; Chapter 36 of the Texas Water Code; Haskell/Knox Underground Water Conservation District Enabling Act, 73rd Leg., R.S., ch. 1028, 1993 Tex. Gen. Laws 4435; Act of April 24, 2001, 77th Leg., R.S., ch. 38, 2001 Tex. Gen. Laws 68; and Act of May 30, 2003, 78th Leg., R.S., ch. 992, 2003 Tex. Gen. Laws 2896, the following rules are hereby ratified and adopted as the rules of this District by its Board. Each rule as worded herein has been in effect since the date of passage and as may be hereafter amended. All rules or parts of rules, in conflict with these rules, are hereby repealed. Rolling Plains Groundwater Conservation District first adopted rules on January 18, 2001, and adopted amendments to its rules on July 19, 2001, December 19, 2002, April 17, 2003, and September 18, 2003.

The rules, regulations, and modes of procedure herein contained are and have been adopted to simplify procedures, avoid delays, and facilitate the administration of the water laws of the State and the rules of this District. To the end that these objectives are attained, these rules will be so construed.

These rules may be used as guides in the exercise of discretion, where discretion is vested. However, under no circumstances and in no particular case may these rules be construed as a limitation or restriction upon the exercise of powers, duties, and jurisdiction conferred by law. These rules will not limit or restrict the amount and accuracy of data or information that may be required for the proper administration of the law.

ROLLING PLAINS

GROUNDWATER CONSERVATION DISTRICT

DISTRICT RULES

SECTION 1. DEFINITIONS AND CONCEPTS

Rule 1.1 Definitions of Terms

In the administration of its duties, the Rolling Plains Groundwater Conservation District follows the definitions of terms set forth in the District Act, Chapter 36 of the Texas Water Code, and other definitions as follows:

1) "Acre-foot" means the amount of water necessary to cover one acre of land one foot deep, or about 325,000 gallons of water.

2) "Agriculture" has the meaning assigned by Chapter 36, Texas Water Code.

3) "Board" means the Board of Directors of the District.

4) "Commission" means the Texas Commission on Environmental Quality and its successor agencies.

5) "Deteriorated well" means a well, the condition of which will cause, or is potentially likely to cause, pollution of any water in the District.

6) "De-watering well" means a well used to remove water from a construction site or excavation, or to relieve hydrostatic uplift on permanent structures.

7) "District" means the Rolling Plains Groundwater Conservation District.

8) "District Act" means the Haskell/Knox Underground Water Conservation District Enabling Act, 73rd Leg. R.S., ch. 1028, 1993 Tex. Gen. Laws 4435 as amended by Act of April 24, 2001, 77th Leg., R.S., ch. 38, 2001 Tex. Gen. Laws 68 and Act of May 30, 2003, 78th Leg., R.S., ch. 992, 2003 Tex. Gen. Laws 2896; and the non-conflicting provisions of Chapter 36, Texas Water Code.

9) "District office" means the office of the District as established by resolution of the Board.

10) "Drilling permit" means a permit for a water well issued or to be issued by the District allowing a water well to be drilled.

11) "Existing well" means a well drilled and completed on or before December 19, 2002.

12) "Groundwater" means water percolating below the surface of the earth, but does not include water produced with oil in the production of oil and gas.

13) "Hearing body" means the Board, any committee of the Board, or a Hearing Examiner at any hearing held under the authority of the District Act.

14) "Injection well" includes:

   a) An air conditioning return flow well used to return water used for heating or cooling in a heat pump to the aquifer that supplied the water;

   b) A cooling water return flow well used to inject water previously used for cooling;

   c) A drainage well used to drain surface fluid into a subsurface formation;

   d) A recharge well used to replenish the water in an aquifer;

e) A saltwater intrusion barrier well used to inject water into a freshwater aquifer to prevent the intrusion of salt water into the freshwater;

f) A sand backfill well used to inject a mixture of water and sand, mill tailings, or other solids into subsurface mines;

g) A subsidence control well used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water; or

h) A closed system geothermal well used to circulate water, other fluids, or gases through the earth as a heat source or heat sink.

15) "Landowner" means the person who bears ownership of the land surface.

16) "Leachate well" means a well used to remove contamination from soil or groundwater.

17) "Monitoring well" means a well installed to measure some property of the groundwater or aquifer it penetrates, and does not produce more than 5,000 gallons of groundwater per year.

18) "New well" means a well that was not yet drilled and completed on or before December 19, 2002.

19) "Open meetings law" means Chapter 551, Texas Government Code.

20) "Person" includes corporation, individual, organization, government or governmental subdivision or agency, business trust, estate, trust, partnership, association, or any other legal entity.

21) "Pollution" means the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the District that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or public enjoyment of the water for any lawful or reasonable use.

22) "Presiding officer" means the President, Vice-President, Secretary, or other Board member presiding at any meeting, hearing, or other proceeding.

23) "Rules" means the rules of the District compiled in this document and as may be supplemented or amended from time to time.

24) "Section" means the land designated by a survey number found in the Baylor, Haskell and Knox County Survey Maps, Texas General Land Office - Archives Division, Austin, Texas.

25) "Texas Public Information Act" means Chapter 552, Texas Government Code.

26) "Use for a beneficial purpose" has the meaning assigned by Chapter 36, Texas Water Code.

27) "Waste" has the meaning assigned by Chapter 36, Texas Water Code.

28) "Water meter" means a water flow-measuring device that can accurately record the amount of groundwater produced during a measured time.

29) "Well" shall mean a water well, injection well, recharge well, dewatering well, or monitoring well used to withdraw groundwater from the groundwater supply within the District.

30) "Well owner" or "well operator" means the person who owns the land upon which a well is located or is to be located or the person who operates a well or a water distribution system supplied by a well.

31) "Well system" means a well or group of wells tied to the same distribution system.

32) "Withdraw" means extracting groundwater by pumping or by another method.

33) "Windmill" means a wind-driven or hand-driven device that uses a piston pump to remove groundwater.

Rule 1.2 Purpose of Rules

These rules are adopted to achieve the provisions of the District Act and accomplish its purposes.

Rule 1.3 Use and Effect of Rules

The District uses these rules as guides in the exercise of the powers conferred by law and in the accomplishment of the purposes of the District Act. They may not be construed as a limitation or restriction on the exercise of any discretion nor be construed to deprive the District or Board of the exercise of any powers, duties or jurisdiction conferred by law, nor be construed to limit or restrict the amount and character of data or information that may be required to be collected for the proper administration of the District Act.

Rule 1.4 Amending of Rules

The Board may, following notice and hearing, amend these rules or adopt new rules from time to time.

Rule 1.5 Headings and Captions

The section and other headings and captions contained in these rules are for reference purposes only. They do not affect the meaning or interpretation of these rules in any way.

Rule 1.6 Construction

A reference to a title, rule or section without further identification is a reference to a title, chapter or section. Construction of words and phrases is governed by the Code Construction Act, Subchapter B, Chapter 311, Government Code.

Rule 1.7 Methods of Service Under the Rules

Except as otherwise expressly provided in these rules, any notice or documents required by

these rules to be served or delivered may be delivered to the recipient, or the recipient's authorized representative, in person, by agent, by courier receipted delivery, by certified mail sent to the recipient's last known address, or by telephonic document transfer to the recipient's current telecopier number. Service by mail is complete upon deposit in a post office or other official depository of the United States Postal Service. Service by telephonic document transfer is complete upon transfer, except that any transfer occurring after 5:00 p.m. will be deemed complete on the following business day. If service or delivery is by mail, and the recipient has the right, or is required, to do some act within a prescribed time after service, three days will be added to the prescribed period. Where service by one of more methods has been attempted and failed, the service is complete upon notice publication in a newspaper of general circulation in Haskell, Knox and Baylor Counties.

Rule 1.8 Severability

If any one or more of the provisions contained in these rules are for any reason held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability may not affect any other rules or provisions of these rules, and these rules must be construed as if such invalid, illegal or unenforceable rules or provision had never been contained in these rules.

SECTION 2. BOARD

Rule 2.1 Purpose of Board

The Board was created to determine policy and regulate the withdrawal of groundwater within the boundaries of the District for conserving, preserving, protecting, and recharging the groundwater within the District, and to exercise its rights, powers, and duties in a way that will effectively and expeditiously accomplish the purposes of the District Act. The Board's responsibilities include, but are not limited to, the adoption and enforcement of reasonable rules and other orders.

Rule 2.2 Board Structure and Officers

The Board consists of the members appointed and qualified as required by the District Act. The Board will elect one of its members to serve as President, to preside over Board meetings and proceedings; one to serve as Vice President, to preside in the absence of the President; and one to serve as Secretary, to keep a true and complete account of all meetings and proceedings of the Board. The Board will elect officers every other year. Members and officers serve until their successors are appointed and sworn in accordance with the District Act and these rules.

Rule 2.3 Meetings

The Board will hold a regular meeting at least once quarterly as the Board may establish from

time to time by resolution. At the request of the President, or by written request of at least three members, the Board may hold special meetings. All Board meetings will be held according to the Texas Open Meetings Law.

Rule 2.4 Committees

The President may establish committees for formulation of policy recommendations to the Board and appoint the chair and membership of the committees. Committee members serve at the pleasure of the President.

Rule 2.5 Ex Parte Communications

a) Board members may not communicate, directly or indirectly, about any issue of fact or law in any contested case before the board, with any agency, person, party, or their representatives except on notice and opportunity for all parties to participate.

b) Notwithstanding Subsection (a) of this Rule, a Board member may communicate ex parte with other members of the Board, the General Manager, employees, or attorneys of the District as long as such communication does not violate other applicable law. Subsection (a) of this Rule does not apply to a Board member who abstains from voting on any matter in which ex parte communications have occurred.

SECTION 3. DISTRICT STAFF

Rule 3.1 General Manager

The Board may employ a person to be the General Manager of the District, who is the District's chief administrative officer. The General Manager shall have full authority to manage and operate the affairs of the District subject only to the direction given by the Board through policies and orders adopted by it. The Board will determine the salary and review the position of General Manager each year at the beginning of the third quarter of every fiscal year. The General Manager, with approval of the Board, may employ all persons necessary for the proper handling of the business and operation of the District. Employee salaries shall be set by the Board with recommendations from the General Manager.

Rule 3.2 Delegation of Authority

The General Manager may delegate duties as may be necessary to effectively and expeditiously accomplish those duties, provided that no such delegation may relieve the General Manager from the General Manager's responsibilities under the Texas Water Code, the District Act, and the policies, orders, and permits promulgated by the Board. To the extent not otherwise prohibited by law, the Board may delegate its duties as may be necessary to effectively and expeditiously accomplish those duties.

SECTION 4. DISTRICT RECORDS

Rule 4.1 Minutes and Records of the District

All documents, reports, records, and minutes of the District are available for public inspection and copying under the Texas Public Information Act. Upon written application of any person, the District shall furnish copies of its public records that are not otherwise exempt from disclosure under the Texas Public Information Act or other law. A reasonable copying charge may be assessed pursuant to policies established by the District. A list of the charges for copies shall be furnished by the District.

Rule 4.2 Certified Copies

Requests for certified copies must be in writing. Certified copies will be made under the direction of the Board of Directors. A certification charge and copying charge may be assessed, pursuant to policies established by the Board of Directors. A list of the charges for copies shall be furnished by the District.

SECTION 5. SPACING AND LOCATION REQUIREMENTS

Rule 5.1 Spacing Requirements

a) Except as provided under Rule 11.1, a well to be drilled subsequent to December 19, 2002 shall not be drilled:

   1) within 50 feet from the property line of any adjoining landowner; or

   2) within 100 feet of any existing well.

b) Wells drilled prior to December 19, 2002 shall be drilled in accordance with the rules in effect, if any, on the date such drilling commenced.

c) A well exempt from permitting under Rule 10.5(a)(3) is exempt from the spacing requirements under Rule 5.1. Other wells exempt from permitting under Rule 10.5 shall comply with the spacing and location requirements under Rules 5.1 and 5.2.

Rule 5.2 Location Requirements

a) All new wells must comply with the location requirements set forth under this rule, except that leachate wells, monitoring wells, and de-watering wells may be located where necessity dictates.

b) A well must be located a minimum horizontal distance of **50 feet** from any water-tight sewage facility and liquid-waste collection facility.

c) A well must be located a minimum horizontal distance of 150 feet from any contamination, such as existing or proposed livestock or poultry yards, privies, and septic system absorption fields.

d) A well must be located at a site not generally subject to flooding; provided, however, that if a well must be placed in a flood prone area, it must be completed with a watertight sanitary well seal and steel casing extending a minimum of **24 inches** above the known flood level.

e) No well may be located within five-hundred (500) feet of a sewage treatment plant, solid waste disposal site, or land irrigated by sewage plant effluent, or within three-hundred (300) feet of a sewage wet well, sewage pumping station, or a drainage ditch that contains industrial waste discharges or wastes from sewage treatment systems.

f) After an application for a well permit has been granted, the well, if drilled, must be drilled within ten (10) yards (30 feet) of the location specified in the permit, and not elsewhere. If the well should be commenced or drilled at a different location, the drilling or operation of such well may be enjoined by the Board pursuant to Chapter 36, Texas Water Code, and these Rules. As described in the Texas Water Well Drillers and Pump Installers Rules, all well drillers and persons having a well drilled, deepened, or otherwise altered shall adhere to the provisions of these Rules prescribing the drilling location and proper completion of wells, as well as the spacing and location requirements set forth under this section.

SECTION 6. PRODUCTION LIMITATIONS

Rule 6.1 Maximum Allowable Production

Subject to Subsections (b) and (c) of this Rule, a well or a well system shall not be operated such that the total annual production from the well or well systems exceeds three (3) acre feet of water per surface acre of land. Only land that is contiguous to the acre where the well is located and owned by the same person that owns the acre where the well is located shall be included in such calculation.

b) Notwithstanding Subsection (a) of this Rule and because of the isolated, localized, and discontinuous nature of the aquifer throughout the District, no person shall be entitled to claim as surface acreage for purposes of calculating the maximum allowable production of a well or well system any land that is located in a separate Section than the Section on which the well or well system is located. To the extent that wells comprising a well system are located on more than one Section, the wells located on a particular Section shall be considered as a separate well system from any wells physically located on another Section or Sections for all purposes under these Rules, including the calculation of the appropriate production limitation for a particular well or well system.

c) In the event that the well owner does not own the tract of land on which the well is located and no other wells are located on the tract of land, the well owner shall provide evidence to the District of the well owner's authority to claim the production rights for the surface acreage of the tract of land on which the well is located. In the event that the well owner does not own the tract of land on which the well is located and where other wells owned by persons other than such well owner are located on the same tract of land, such well owner or the owner of the land shall provide written evidence to the District establishing how the total right of groundwater production associated with the acreage included in the tract of land is to be allocated amongst the

various wells or well systems located on the land. Failure to provide evidence of such allocation to the satisfaction of the District shall result in all wells located on the tract being shut down by order of the District to cease production for the remainder of the calendar year once the three acre-feet of water per surface acre limit set forth under Subsections (a) and (b) of this Rule has been reached in a given year by the aggregate production of all wells located on the tract.

SECTION 7. OTHER DISTRICT ACTIONS AND DUTIES

Rule 7.1 District Management Plan

The District Management Plan specifies the acts, procedures, performance and avoidance necessary to prevent waste, the reduction of artesian pressure, or the draw-down of the water table.

The District shall use the Rules of the District to implement the Management Plan. The Board will review the plan at least every fifth year. If the Board considers a new plan necessary or desirable, based on evidence presented at hearing, a new plan will be adopted. A plan, once adopted, remains in effect until the adoption of a new plan.

Rule 7.2 Aquifer Storage and Recovery (ASR)

No ASR project shall be operated within the District, unless such person has obtained a permit authorizing the project from the commission and a copy of such permit has been filed with the District prior to the commencement of injection or recovery operations associated with the ASR project. A person applying for a permit from the commission to authorize an ASR project involving an aquifer within the boundaries of the District shall file a copy of the notice of such application and a copy of the application with the District within ten (10) days of publication of notice or of filing of the application with the commission, whichever is earlier.

SECTION 8. TRANSFER OF GROUNDWATER OUT OF THE DISTRICT:

Rule 8.1 Permit Required

a) No person shall produce groundwater within the District and transport such water for use outside of the district under the following conditions unless the person producing and transporting the water across the boundaries of the District shall obtain a permit to do so from the District:

1) to increase, on or after March 2, 1997, the amount of groundwater to be transferred under a continuing arrangement in effect before that date; or

2) to transfer groundwater out of the district on or after March 2, 1997, under a new arrangement.

b) The permit to produce water for transport outside of the District shall be applied for and considered by the Board in the same manner as applications for permits for groundwater use inside of the District, except that:

1) a person transporting groundwater outside of the District shall be subject to payment of the Groundwater Transport Regulatory Fee under Rule 8.2; and

2) the Board shall also consider the following additional criteria in reviewing applications for permits to transport water outside of the District:

a) the availability of water in the district and in the proposed receiving area during the period for which the water supply is requested;

b) the projected effect of the proposed transfer on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the district; and

c) the approved regional water plan and certified district management plan.

Rule 8.2 Groundwater Transport Regulatory Fee

a) A person transporting groundwater outside of the District shall be subject to payment of the Groundwater Transport Regulatory Fee. The Groundwater Transport Regulatory Fee shall be paid to the District on a monthly basis for water produced from wells located within the District for use outside of the District, which fee shall be established by resolution of the Board and paid to the District no less than 30 days after the end of the given reporting month. In no case shall the Board establish a fee in an amount that exceeds: $1 per acre-foot of water used for agricultural use; or 17 cents per thousand gallons of water used for any other purpose.

b) An exempt well is not excused from payment of the Groundwater Transport Regulatory Fee if the groundwater produced from the exempt well is subsequently transported for use outside of the District. The owner of such an exempt well shall identify to the District the amount of water exported from the District on a monthly basis and pay the Groundwater Transport Regulatory Fee to the District in an amount equal to the fee for a non-exempt well for any water actually transported outside of the District.

c) All owners of non-exempt wells who begin transporting water for use outside of the District before October 1, 2003 shall report to the District the amount of water produced and the amount of water actually exported on a monthly basis. All owners of non-exempt wells who begin transporting water for use on or after October 1, 2003 shall report to the District the amount of water produced and the amount of water actually exported on a monthly basis and shall file annual reports with the District describing the amount of water transported and used. The report shall be filed with the District no later than February 15 of each year on the appropriate form provided by the District and shall state the following:

1.) the name of the owner;

2.) the well, permit or registration numbers of each well that is producing water for transport;

3.) the total amount of groundwater produced from each well or well system during the immediately preceding calendar year;

4.) the total amount of groundwater transported outside the district from each well or well system during each month of the immediately preceding calendar year;

5.) the purposes for which the water was transported;

6.) the amount and source of any surface water transported; and

7.) any other information requested by the District.

d) Groundwater that is discharged pursuant to a permit issued by the commission and not sold is not considered to have been transferred from the District unless the discharge is part of an overall water transfer and sale.

e) All groundwater produced within the District that is subsequently transported across the boundaries of the District for use outside of the District shall be metered as set forth under Section 15 of these Rules.

SECTION 9. DEPOSITS FOR WELL DRILLING PERMITS

Rule 9.1 Deposits

a) Each application for a permit to drill a well or any other activity permitted by the District for which a driller's log (State Well Report) is required to be completed by state law must be accompanied by a $250.00 deposit, which will be accepted and deposited by the District staff. The deposit shall be returned to the applicant by the District if: (1) the application is denied; (2) the application is granted, upon the receipt of a correctly completed driller's log of the well; or (3) the permit location is abandoned without having been drilled or altered or results in a dry hole, upon return and surrender of the permit marked "abandoned" by the applicant.

b) In the event that neither the driller's log of the well nor the permit marked "abandoned" is returned to the District office within eight (8) months after the application date of the permit, the deposit shall become the property of the District.

SECTION 10. REGISTRATION AND PERMITS

Rule 10.1 Registration and Grandfathering of Existing Wells

a) It is a violation of these rules for a well owner or operator to produce water from any well within the District, except leachate wells, monitoring wells, and de-watering wells, without a valid well registration or well permit from the District. Owners and operators of wells that were drilled and completed on or before December 19, 2002, shall have until January 1, 2004, to register their wells with the District on forms to be provided by the District upon request by the owner or operator.

b) The District shall register such an existing well upon receipt from the owner or operator of the

following information on a form to be provided by the District, to the extent that such information is requested on the form:

1) the name and address of the owner of the land on which the well is located;

2) if different from owner, the name and address of the applicant and documentation establishing authority to operate the well;

3) a statement of the nature and purpose of use of the water produced from the well, and the amount to be used for each purpose;

4) a declaration that the applicant will comply with the district's management plan, rules, and production limitations;

5) the location of the well and the estimated rate at which water will be withdrawn;

6) the location of use of the water, including a legal description of tracts to be irrigated with water from the well if the well is used for irrigation; and

7) a water well closure plan or declaration that the applicant will comply with well plugging guidelines and report closure to the commission and the District.

c) Existing wells registered in accordance with this section shall not be required to obtain a drilling permit from the District, nor shall they be subject to the District's spacing requirements under Rule 5.1, unless the registration is revoked for violation of registration conditions, District rules, or other applicable law.

d) Failure by the owner or operator of a well that was drilled and completed prior to December 19, 2002 to register such well with the District by January 1, 2004:

1) shall be a violation of these rules if the well is operated after January 1, 2004;

2) shall result in the owner forfeiting the ability to register the well under this Rule and, instead, shall result in the owner or operator being required to obtain a registration or permit for the well under Rule 10.2; and

3) shall create a rebuttable presumption that the well was not an existing well, which, among other things, will subject the well to enforcement of the District's well spacing requirements under Rule 5.1 and subject the well to potential enforcement for failure to comply with the permitting requirements of these Rules.

e) Any person who becomes the owner of a registered well must, within 60 calendar days from the date of the change in ownership, notify the District to change the name on the registration.

Rule 10.2 Registration and Permitting of New Wells

a) Except as otherwise provided under these Rules, it is a violation of these Rules for any person, including a well owner, well operator, or water well driller, to drill, equip, or complete any well in the District or to substantially alter the size of a well or well pump in any well in the District without first filing either an administratively complete well registration or an administratively complete permit application, as appropriate for the type of well, with the District.

b) All new wells, except leachate wells, monitoring wells, and de-watering wells, must be registered with the District by the well owner, well operator, or water well driller prior to being drilled,

equipped, completed, or substantially altered in accordance with the application procedure set forth for existing wells under Rule 10.1(b). The General Manager shall review the registration and make a preliminary determination on whether the well qualifies under the exemptions from permitting provided under Rule 10.5. Providing the preliminary determination is ruled the well is exempt, the registrant may begin drilling immediately upon receiving the approved registration. If the preliminary determination by the General Manager is that the well is not exempt from permitting, the owner, operator, or driller shall submit a well permit application before proceeding with drilling, equipping, completion, or alteration.

Rule 10.3 General Permitting Policies and Procedures

a) **Permit Requirement:** The well owner, well operator, or any other person acting on behalf of the well owner, must file a completed well application for a water well permit before a new, non-exempt well may be drilled, equipped, completed, or substantially altered. Providing the application for a permit is deemed administratively complete, meaning that it meets all of the guidelines and requirements of these rules and contains all of the required information, the applicant may thereupon proceed at his own risk to drill, equip, complete, or alter such well. This application for a permit shall not, however, be officially granted until the opportunity for a due process public hearing has been satisfied and the Board has approved the permit.

b) **Permit Applications:** Each original application for a water well permit or permit renewal requires a separate application. Application forms will be provided by the District and furnished to the applicant upon request. Applications shall contain all of the information set forth under Rule 10.1(b) for well registrations and shall be submitted on a form to be provided by the District, to the extent that such information is requested on the form. The District may at its discretion utilize the same form for permit applications as it does for well registrations.

c) **Notice of Permit Hearing:** Once the District has received an administratively complete original application for a permit, the General Manager shall issue written notice indicating a date and time for a hearing on the application in accordance with these Rules. The District may schedule as many applications at one hearing as deemed necessary.

d) **Decision and Issuance of Permit:** In deciding whether or not to issue a permit, and in setting the terms of the permit, the Board must consider whether the application complies with the District Rules.

e) **Duration of Permits**: Unless specified otherwise by the Board or these Rules, permits to drill, equip, complete, or substantially alter a well or pump size are effective for those purposes for a term ending 120 calendar days after the date the permit was issued.

f) **Permit Provisions**: The permit shall contain the standard provisions listed in Rule 10.4. The permit may also contain provisions relating to the means and methods of transportation of water produced within the District.

g) **Aggregation of Withdrawal:** In issuing a permit, the authorized withdrawal for a given well may be aggregated with the authorized withdrawal from other permitted wells designated by the District. District Rules 5 & 6 shall be considered in determining whether or not to allow aggregation of withdrawal. For the purpose of categorizing wells by the amount of groundwater production, where wells are permitted with an aggregate withdrawal, the total authorized

withdrawal may be assigned to the wells in the aggregate, rather than allocating to each well its pro rata share of production, except as otherwise provided in these Rules.

h) **Effect of Acceptance of Permit:** Acceptance of the permit by the person to whom it is issued constitutes acknowledgment of and agreement to comply with all of its terms, provisions, conditions, limitations, and restrictions.

Rule 10.4 Permit Provisions

All permits are granted subject to these Rules, orders of the Board, and the laws of the State of Texas. In addition to any special provisions or other requirements incorporated into the permit, each permit issued must contain the following standard permit provisions:

a) This permit is granted in accordance with the provisions of the Rules of the District, and acceptance of this permit constitutes an acknowledgment and agreement that the permittee will comply with the Rules of the District.

b) This permit confers only the right to use the permit in compliance with the terms of the permit and the Rules of the District, including but not limited to the production limitations under Rule 6.1, and its terms may be modified or amended pursuant to the provisions of Rule 6.1 and the other Rules of the District as Rule 6.1 and the other Rules of the District may be amended in the future. To protect the permit holder from illegal use by a new landowner, within 60 days after the date of sale, the permit holder must notify the District in writing of the name of the new owner. Any person who becomes the owner of a currently permitted well must, within 60 calendar days from the date of the change in ownership, file an application for an amendment to effect a transfer of the permit.

c) The operation of the well for the authorized withdrawal must be conducted in a non-wasteful manner.

d) At the time a water meter is required under Section 15 of the District's Rules, it shall be installed to accurately record gallons produced during a specified period of time.

e) The well site must be accessible to District representatives for inspection, and the permittee agrees to cooperate fully in any reasonable inspection of the well and well site by the District representatives.

f) The application pursuant to which this permit has been issued is incorporated in this permit, and this permit is granted on the basis of and contingent upon the accuracy of the information supplied in that application. A finding that false information has been supplied is grounds for immediate revocation of the permit.

g) Violation of a permit's terms, conditions, requirements, or special provisions, including pumping amounts in excess of authorized withdrawal, is punishable by civil penalties as provided by the District's Rules and other enforcement.

Rule 10.5 Exemptions

a) The requirement to obtain a permit under Section 10 of these Rules does not apply to:

1) a well used solely for domestic use or for providing water for livestock or poultry on a tract of land larger than 10 acres that is either drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day;

2) the drilling of a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig; or

3) the drilling of a water well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production from such a well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.

b) A well originally exempt under Subsection (a) is not exempt under this rule if it is subsequently used for a purpose or in a manner that is not exempt under Subsection (a).

c) An entity exempt under Subsection (a)(3) of this Rule shall report monthly to the District:

1) the total amount of water withdrawn during the month;

2) the quantity of water necessary for mining activities; and

3) the quantity of water withdrawn for other purposes.

d) A water well exempted under Subsection (a) shall:

1) be registered in accordance with Rule 10.1; and

2) comply with the location, completion, and re-completion requirements of Section 12 and Rule 5.2 of these Rules.

e) The driller of a well exempted under Subsection (a) shall file the drilling log with the District.

f) Notwithstanding Subsection (a), a well to supply water for a subdivision of land for which a plat approval is required by Chapter 232, Local Government Code, is not exempt under Subsection (a).

g) Groundwater withdrawn from a well exempt from permitting under Subsection (a) and subsequently transported outside the boundaries of the District is subject to the Groundwater Transport Regulatory Fee under Section 8 of these Rules.

SECTION 11. REWORKING AND REPLACING A WELL

Rule 11.1 Procedures

a) An existing well or permitted new well may be reworked, re-drilled, or re-equipped in a manner that will not increase the production capacity of the well by increasing the size of the column pipe or pump without the need for the owner or operator to obtain a permit under Rule 10.2. Such a well shall maintain the existing well or new permitted well status of the original well.

b) A permit must be applied for and obtained under Rule 10.2, if a party wishes to increase the rate

of production of an existing well or permitted new well by increasing the size of the column pipe or pump size when reworking, re-equipping, or re-drilling such well.

c) A permit must be applied for and granted by the Board if a party wishes to replace an existing well or permitted new well with a replacement well.

d) A replacement well, in order to be considered such, must be drilled within ten (10) yards (30 feet) of the well to be replaced. The replacement well shall not be drilled nearer the property line if the original well was "grandfathered" from otherwise violating the spacing requirements of Rule 5.1.

e) In the event a permit application submitted in accordance with this Rule meets the spacing requirements of these Rules, the Board may grant such application without further notice or hearing.

SECTION 12. WELL COMPLETION

Rule 12.1 Standards of Completion for All Wells

a) All wells must be completed in accordance with the following specifications and in compliance with local county or incorporated city ordinances. All wells must also be completed in compliance with the rules and regulations of the Texas Department of Licensing and Regulation related to Water Well Drillers and Pump Installers.

b) The annular space between the borehole and the casing shall be filled from the ground level to a depth of not less than 10 feet below the land surface or well head with cement slurry.

c) All wells shall have a concrete slab or sealing block above the cement slurry around the well at the ground surface.

d) The slab or block shall extend at least **two (2) feet** from the well in all directions and have a minimum thickness of **four inches** and shall be separated from the well casing or mastic coating or sleeve to prevent bonding of the slab to the casing.

e) The surface of the slab shall be sloped to drain away from the well. The casing shall extend a minimum of one foot above the original ground surface.

f) A slab or block as described in Subsections (c) – (e) of this Rule is required above the cement slurry except when a pitless adapter is used. Pitless adapters may be used in such wells, provided that:

    1) the pitless adapter is welded to the casing or fitted with another suitably effective seal; and

    2) the annular space between the borehole and the casing is filled with cement to a depth not less than 15 feet below the adapter connection.

g) All wells, especially those that are gravel packed, shall be completed so that aquifers or zones containing waters that are known to differ significantly in chemical quality are not allowed to commingle through the borehole-casing annulus or the gravel pack and cause quality degradation of any aquifer or zone.

h) The well casing shall be capped or completed in a manner that will prevent pollutants from entering the well.

i) Water well drillers shall indicate the method of completion performed on the Well Report (TDLR Form #001 WWD, Section 10, Surface Completion).

Rule 12.2 Re-completions

a) The landowner shall have the continuing responsibility of insuring that a well does not allow commingling of undesirable water and fresh water or the unwanted loss of water through the wellbore to other porous strata.

b) If a well is allowing the commingling of undesirable water and fresh water or the unwanted loss of water, and the casing in the well cannot be removed and the well re-completed within the applicable rules, the casing in the well shall be perforated and cemented in a manner that will prevent the commingling or loss of water. If such a well has no casing, then the well shall be cased and cemented or plugged in a manner that will prevent such commingling or loss of water.

c) The Board may direct the landowner to take steps to prevent the commingling of undesirable water and fresh water or the unwanted loss of water.

SECTION 13. PROHIBITION AGAINST WASTE AND POLLUTION

Rule 13.1 Prohibition Against Waste and Pollution

a) No person shall allow, cause, suffer, permit, or commit "waste" as that term is defined in Rule 1.1.

b) Groundwater shall not be produced in or used within or without the District, in such a manner as to constitute waste as defined in Rule 1.1.

c) No person shall cause "pollution" of the groundwater reservoir or aquifer in the District as defined in Rule 1.1.

d) No person shall allow the continued existence of a deteriorated well.

e) Groundwater produced in the District shall be used for a beneficial purpose.

SECTION 14. HEARINGS

Rule 14.1 Types of Hearings

The District conducts two general types of hearings: (1) Permit hearings involving permit matters, in which the rights, duties, or privileges of a party are determined after an opportunity for an adjudicative hearing, and (2) rulemaking hearings involving matters of general applicability that

implement, interpret, or prescribe the law or District policy, or that describe the procedure or practice requirements of the District. All hearings shall be held before a quorum of the Board.

a) **Permit Hearings:**

1) Permit Applications, Amendments, and Revocations: The District shall hold hearings on permit applications, permit renewals or amendments, and permit revocations or suspensions.

2) Hearings on Motions for Rehearing: Motions for Rehearing will be heard by the Board pursuant to Rule 14.3.

b) **Rulemaking Hearings:**

1) Rules and District Management Plan: The Board may hold a hearing, after giving notice, to consider adoption of a new District Management plan or revising an existing District Management Plan or to amend the District Rules or adopt new District Rules.

2) Other Matters: A public hearing may be held on any matter within the jurisdiction of the Board if the Board deems a hearing to be in the public interest or necessary to effectively carry out the duties and responsibilities of the District.

Rule 14.2 Notice and Schedule of Hearings

a) Notices of all hearings of the District shall be prepared by the General Manager. For all rulemaking hearings, the notice shall include the subject matter of the hearing, the time, date, and place of the hearing, and any other information deemed relevant by the General Manager or the Board. For all permit hearings, the notice shall, at a minimum, state the following information:

1) the name of the applicant;

2) the address or approximate proposed location of the well;

3) the time, date, and location of the hearing; and,

4) any other information the Board or General Manager deem appropriate to include in the notice.

b) For permit hearings, not less than 72 hours prior to the time of the hearing, notice shall be:
(1) posted by the General Manager at a place convenient to the public in the District Office; and
(2) provided by the General Manager to the county clerk of each county in the District, whereupon such county clerk shall post the notice on a bulletin board at a place convenient to the public in the county courthouse.

c) For rulemaking hearings, not less than five days prior to the date of the hearing, notice shall be:
(1) posted by the General Manager at a place convenient to the public in the District Office;
(2) provided by the General Manger to the county clerk of each county in the District, whereupon such county clerk shall post the notice on a bulletin board at a place convenient to the public in the county courthouse; and

(3) published by the General Manager once in a newspaper of general circulation in each county in the District.

d) Hearings may or may not be scheduled during the District's regular business hours, Monday through Friday of each week, except District holidays. All hearings shall be held at the District Office unless the Board directs otherwise. The District may schedule as many applications for consideration at one hearing as deemed desirable. Hearings may be continued from time to time and date to date without additional notice after the initial notice. The General Manager shall set a hearing date within 30 calendar days of a determination that the application is administratively complete. The hearing shall be held within 35 calendar days after the setting of the date.

Rule 14.3 General Procedures for Permit Hearings

a) Authority of Presiding Officer: The presiding officer may conduct the hearing or other proceeding in the manner the presiding officer deems most appropriate for the particular hearing. The presiding officer has the authority to:

1) set hearing dates, other than the initial hearing date for permit matters, which shall be set by the General Manager in accordance with Rule 14.2;

2) convene the hearing at the time and place specified in the notice for public hearing;

3) rule on motions and on the admissibility of evidence;

4) establish the order for presentation of evidence;

5) administer oaths to all persons presenting testimony;

6) examine witnesses;

7) ensure that information and testimony are introduced as conveniently and expeditiously as possible, without prejudicing the rights of any party to the proceeding;

8) conduct public hearings in an orderly manner in accordance with these rules;

9) recess any hearing from time to time and place to place; and,

10) exercise any other appropriate powers necessary or convenient to effectively carry out the responsibilities of presiding officer.

b) Hearing Registration Forms: Each person attending and participating in a hearing of the District must submit a form providing the following information: the person's name; the person's address; who the person represents if other than himself; whether the person wishes to testify; and any other information relevant to the hearing.

Rule 14.4 Appearance; Presentation; Time for Presentation; Ability to Supplement; Conduct and Decorum; Written Testimony

a) Any interested person, including the General Manager, may appear at a hearing in person or may appear by representative provided the representative is fully authorized to speak and act for the principal. Such person or representative may present evidence, exhibits, or testimony, or make an

oral presentation as determined by the Board. Any partner may appear on behalf of a partnership. A duly authorized officer or agent of a public or private corporation, political subdivision, governmental agency, municipality, association, firm, or other entity may appear on behalf of the entity. A fiduciary may appear for a ward, trust, or estate. A person appearing in a representative capacity may be required to prove proper authority.

b) After the presiding officer calls a hearing to order, the presiding officer shall announce the subject matter of the hearing and the order and procedure for presentations.

c) The presiding officer may prescribe reasonable time limits for the presentation of evidence and oral argument.

d) In the discretion of the presiding officer, any person who appears at a hearing and makes a presentation before the Board may supplement that presentation by filing additional written evidence with the Board within 10 days after the date of conclusion of the hearing. Cumulative, repetitive, and unduly burdensome evidence filed under this subsection will not be considered by the Board.

e) Every person, party, representative, witness, and other participant in a proceeding must conform to ethical standards of conduct and must exhibit courtesy and respect for all other participants. No person may engage in any activity during a proceeding that interferes with the orderly conduct of District business. If in the judgment of the presiding officer, a person is acting in violation of this provision, the presiding officer will first warn the person to refrain from engaging in such conduct. Upon further violation by the same person, the presiding officer may exclude that person from the proceeding for such time and under such conditions as the presiding officer deems necessary.

f) Written testimony: When a proceeding will be expedited and the interest of the parties will not be prejudiced substantially, testimony may be received in written form. The written testimony of a witness, either in narrative or question and answer form, may be admitted into evidence upon the witness being sworn and identifying the testimony as a true and accurate record of what the testimony would be if given orally.

Rule 14.5 Evidence; Broadening the Issues

a) The presiding officer may admit evidence if it is relevant to an issue at the hearing.

b) The presiding officer may exclude evidence that is irrelevant, immaterial, or unduly repetitious.

c) No person will be allowed to appear in any hearing or other proceeding whose appearance, in the opinion of the presiding officer, is for the sole purpose of unduly broadening the issues to be considered in the hearing or other proceeding.

Rule 14.6 Recording

Hearings and other proceedings shall be recorded on audio cassette tape.

Rule 14.7 Continuance

The presiding officer may continue hearings or other proceedings from time to time and from place to place without the necessity of publishing, serving, mailing, or otherwise issuing a new notice. If a hearing or other proceeding is continued and a time and place (other than the District Office) for the hearing or other proceeding to reconvene are not publicly announced at the hearing or other proceeding by the presiding officer before it is recessed, a notice of any further setting of the hearing or other proceeding will be delivered at a reasonable time to persons who submitted a hearing registration form under Rule 14.3(b), and any other person the presiding officer deems appropriate, but it is not necessary to post a notice at the county courthouses or publish a newspaper notice of the new setting.

Rule 14.8 Filing of Documents; Time Limit; Computing Time

a) Any papers or documents required to be filed under these rules or by law must be received in hand at the District Office within the time limit, if any, set by these rules or by the presiding officer for filing. Mailing within the time period is insufficient if the submissions are not actually received by the District within the time limit.

b) In computing any period of time specified by these rules, by a presiding officer, by Board orders, or by law, the day of the act, event, or default after which the designated period of time begins to run is not included, but the last day of the period computed is included, unless the last day is a Saturday, Sunday, or legal holiday as determined by the Board, in which case the period runs until the end of the next day which is neither a Saturday, Sunday, nor legal holiday.

Rule 14.9 Report

Within 14 days after the date the hearing is finally concluded, the Presiding Officer must submit a hearing report to the Board. The report must include a summary of the subject matter of the hearing, the evidence or public comments received, and the Presiding Officer's recommendations for Board action on the subject matter of the hearing. Any person who participated in the hearing may review a copy of the hearing report and submit to the Board written exceptions to the hearing report. The Presiding Officer may direct the General Manager to prepare the hearing report and recommendations required by this Rule.

Rule 14.10 Board Action

Within 35 days after the final hearing date is concluded, the Board must take action on the subject matter of the hearing.

Rule 14.11 Request for Rehearing and Appeal.

A decision of the Board concerning a hearing matter may be appealed by requesting a rehearing before the Board within 20 calendar days of the date of the Board's decision. Such a rehearing request must be filed at the District Office in writing and must state clear and concise grounds for the request. Such a rehearing request is mandatory with respect to any decision or action of the Board before any appeal to District Court may be brought. The Board's decision is final if no request for rehearing is made within the specified time, upon the Board's denial of the request for rehearing, or upon rendering a decision after rehearing. If the rehearing request is granted by the Board, the date of the rehearing will be within 45 calendar days thereafter. The failure of the Board to grant or deny the request for rehearing within 90 calendar days of the date of submission shall constitute a denial of the request.

Rule 14.12 Rulemaking Hearings Procedures

a) General Procedures: The presiding officer will conduct the rulemaking hearing in the manner the presiding officer deems most appropriate to obtain all relevant information pertaining to the subject of the hearing as conveniently, inexpensively, and expeditiously as possible. In conducting a rulemaking hearing, the presiding officer may elect to utilize procedures set forth in these Rules for permit hearings to the extent that and in the manner that the presiding officer deems most appropriate for the particular rulemaking hearing.

b) Submission of Documents: Any interested person may submit written statements, protests, or comments, briefs, affidavits, exhibits, technical reports, or other documents relating to the subject of the hearing. Such documents must be submitted no later than the time of the hearing, as stated in the notice of hearing given in accordance with Rule 14.2; provided, however, that the presiding officer may grant additional time for the submission of documents.

c) Oral Presentations: Any person desiring to testify on the subject of the hearing must so indicate on the registration form provided at the hearing. The presiding officer establishes the order of testimony and may limit the number of times a person may speak, the time period for oral presentations, and the time period for raising questions. In addition, the presiding officer may limit or exclude cumulative, irrelevant, or unduly repetitious presentations.

d) Conclusion of the Hearing: At the conclusion of the hearing, the Board may take action on the subject matter of the hearing, take no action, or postpone action until a future meeting or hearing of the Board.

SECTION 15. METERING

Rule 15.1 Metering Required

a) Notwithstanding any provision in these Rules to the contrary, to the extent that these Rules require meters to be installed on wells in existence before and on December 19, 2002 , such

meters shall be installed by the District at the District's expense. Notwithstanding any provision in these Rules to the contrary, to the extent that these Rules require meters to be installed on wells that come into existence after December 19, 2002, such meters shall be installed by the well owner at the well owner's expense.

b) All owners of wells required under Section 15.2 to equip such wells with a meter shall do so with a flow measurement device meeting the specifications of these Rules and shall operate the meters on such wells to measure the flow rate and cumulative amount of groundwater withdrawn from the well.

c) Approved Meters: A mechanically driven, digital, totalizing water meter is the only meter acceptable. The digital totalizer must not be resetable by the permittee and must be capable of a maximum reading greater than the maximum expected pumpage during the permit term. Battery operated registers must have a minimum five (5) year life expectancy and must be permanently hermetically sealed. Battery operated registers must visibly display the expiration date of the battery. All meters must meet the requirements for registration accuracy set forth in the American Water Works Association standards for cold-water meters

d) A meter shall be installed by the owner of a well, as required under Rule 15.2, no later than four (4) months after December 19, 2002. The water meter must be installed according to the manufacturer's published specifications in effect at the time of the meter's installation, or its accuracy must be verified by the permittee in accordance with Rule 15.5. If no specifications are published, there must be a minimum length of five pipe diameters of straight pipe upstream of the water meter and one pipe diameter of straight pipe downstream of the water meter. These lengths of straight pipe must contain no check valves, tees, gate valves, back flow preventers, blow-off valves, or any other fixture other than those flanges or welds necessary to connect the straight pipe to the meter. In addition, the pipe must be completely full of water throughout the region. All installed meters must measure only groundwater.

e) Each meter shall be installed, operated, maintained, and repaired in accordance with the manufacturer's standards, instructions, or recommendations and shall ensure an error of not greater than plus or minus five percent.

f) The owner of a well shall be responsible for the installation, operation, maintenance, and repair of the meter associated with that well.

Rule 15.2 Wells Subject to Metering

a) Persons producing or transporting groundwater within the District or transporting water across the District's boundaries shall install meters, if required, as set forth under this Section.

b) The installation of meters shall be mandatory in the following situations and locations:

   1) If water is being produced from a well or well system located on a tract of land in one Section and any of such water produced is being used on a different Section of land, a meter shall be installed at the wellhead(s) and/or at a distribution point or points capable of ensuring an accurate accounting for the District of all water produced from the tract of land or Section and all water transported for use at a location outside of that Section;

   2) If water is being produced from a well or well system located within the boundaries of the District and any of such water produced is being transported across the District's boundaries

for use outside of the District, a meter shall be installed at the wellhead(s) and/or at a distribution point or points, including at any point at which water is finally transported across the District's boundaries, capable of ensuring an accurate accounting for the District of all water produced from such well or well system and all water transported across the District's boundaries for use outside of the District;

3) If a person has been under enforcement by the District for violation of District Rules or Chapter 36, Texas Water Code, and has been determined by the Board to have violated the same, all wells owned or operated by such person and located within the District shall have meters installed at the wellheads, unless a variance is granted by the Board for just cause at its sole discretion; or

4) If the Board by order determines, for good cause, that a well or distribution system should be metered to further the purposes of these Rules, the District Act, or the District's groundwater management plan, the well or distribution system shall be metered in accordance with the Order of the Board.

Rule 15.3 Types of Meters

a) The types of meters approved for installation are:
    1) Internal Impeller;
    2) Magnetic;
    3) Time-Delay Ultrasonic; and
    4) Any flow measurement method approved in writing by the General Manager.

b) All meters must be equipped with a non-resettable mechanical or electronic flow volume accumulator that reads in acre-feet.

c) Types of flow meters prohibited by the District are:
    1) Doppler Ultrasonic;
    2) Pitot Tube; and
    3) Open Discharge.

d) No metering method may be installed or modified prior to written approval given by the General Manager pursuant to an application filed with the District.

e) The General Manager shall approve an application to install a metering method if the General Manager finds the application shows the following:
    1) the meter has a certified error of not greater than plus or minus five percent;
    2) for a meter, it meets the American Water Works Association design and operation standards for design, materials, and accuracy;
    3) the meter has a non-resettable totalizer, or lock box with resettable digital readout;
    4) the totalizing register of the meter has the capacity to record the total quantity of groundwater withdrawn from the aquifer for at least one full year; and

5) the meter, if used for the distribution of potable water, shall be American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 certified.

g) The owner of the meter shall give written notice to the District of the intended start date of the installation or modification 30 days prior to the installation or modification to allow the District to inspect and approve the meter installation or modification.

Rule 15.4 Pre-Existing Meters and Alternative Measuring Methods

a) Within four (4) months of December 19, 2002, the owner of a meter or alternative measuring method shall register the meter or method with the District.

b) All meters existing on the December 19, 2002 shall be inspected by the District for compliance with the meter specifications set forth in these Rules. If the meter complies with these specifications, the General Manager shall approve the meter in writing and advise the owner of the approval. If the meter does not comply with these specifications, the General Manager will issue a notice of deficiency and direct the owner of the meter to install a new meter or modify the existing meter in compliance with Section 15 of these Rules.

c) If at any time the owner of a well has reason to believe that a condition, of any kind whatsoever, may exist that affects the accuracy of a meter, then the owner of the well shall, within seven (7) days of learning of the fact(s), notify the General Manager that the accuracy of the meter may be in question. Such notification shall be in writing on a form provided by the District.

d) The General Manager may conduct an investigation and, if facts warrant, direct the owner of the meter, at the owner's cost, to evaluate and test the accuracy of the meter and take appropriate corrective action, including replacement, to restore the accuracy and proper working condition of the meter as specified in these Rules.

Rule 15.5 Accuracy Verification

a) The General Manager may require the permittee, at the permittee's expense, to test the accuracy of the water meter and submit a certificate of the test results. The certificate shall be on a form provided by the District. The General Manager may further require that such test be performed by a third party qualified to perform such tests. The third party shall be approved by the General Manager prior to the test. Except as otherwise provided herein, certification tests will be required no more than once every three years for the same meter and installation. If the test results indicate an accuracy outside the range of 95% to 105% of the actual flow, then appropriate steps shall be taken by the permittee to repair or replace the water meter within 90 calendar days from the date of the test. The District, at its own expense, may undertake random tests and other investigations at any time for the purpose of verifying water meter readings. If the District's tests or investigations reveal that a water meter is not registering within the accuracy range of 95% to 105% of the actual flow, or is not properly recording the total flow of groundwater withdrawn from the well or wells, the permittee shall reimburse the District for the cost of those tests and investigations, and the permittee shall take appropriate steps to remedy the problem within 90 calendar days from the date of the tests or investigations. If a water meter or related piping or equipment is tampered with or damaged so that the measurement accuracy is impaired, the

District may require the permittee, at the permittee's expense, to take appropriate steps to remedy any problem, and to retest the water meter within 90 calendar days from the date the problem is discovered and reported to the permittee.

b) Meter Testing and Calibration Equipment: Only equipment capable of accuracy results of plus or minus two percent of actual flow may be used to calibrate or test meters.

c) Calibration of Testing Equipment: All approved testing equipment must be calibrated every two years by an independent testing laboratory or company capable of accuracy verification. A copy of the accuracy verification must be presented to the District before any [further] tests may be performed using that equipment.

Rule 15.6 Removal and Disabling of Meters

a) A meter may not be removed or otherwise disabled, including for routine maintenance, unless the owner gives the District notice in writing on a form provided by the District of the intent to remove or disable the meter. Except in cases of routine maintenance, such notice must be approved in writing by the General Manager before the meter is removed or disabled.

b) The readings on the meter must be recorded prior to removal and again upon reinstallation. The monthly record of pumpage will include an estimate of the amount of groundwater withdrawn during the period the meter was not installed and operating.

c) A meter may be removed or otherwise disabled only by the owner of the meter or the owner's authorized representative.

Rule 15.7 Meter Reading and Groundwater Use Reporting

Owners of wells defined under Rule 15.2 must read each water meter and record the meter readings and the actual amount of pumpage in a log at least monthly. The logs containing the periodic recordings shall be available for inspection by the District at reasonable business hours and copies of such logs must be furnished to the District upon request.

Rule 15.8 Prohibition and Enforcement

a) Except as otherwise provided by District Rule or Board Order, no person my take any action that disables or impairs a meter from accurately measuring and recording the flow rate and cumulative amount of groundwater withdrawn from a well.

b) If the withdrawals are not being metered in accordance with this Section, the Board may issue an order:

   1) suspending the right to make withdrawals from a well; and

   2) requiring corrective action to bring the operation of the well into compliance with this Section.

Rule 15.9 Location of Meters

The location of meters required under this Section shall be determined by the General Manager.

SECTION 16. INVESTIGATIONS AND ENFORCEMENT

Rule 16.1 Right to Inspect and Test Wells

Any authorized officers, employees, agent, or representative of the District shall have the right at all reasonable times to enter upon lands upon which a well or wells may be located, within the boundaries of the District, to inspect such wells or well and to install, read, or interpret any meter, weir box, or other instrument for the purpose of measuring production of water from said well or wells or for determining the pumping capacity of said well or wells; and any authorized officer, employee, agent, or representative of the District shall have the right at all reasonable times to enter upon any lands upon which a well or wells may be located, within the boundaries of the District, for the purposes of testing the pump and the power unit of the well or wells and of making any other reasonable and necessary inspections and tests that may be required or necessary for the ensured compliance or enforcement of the Rules and regulations of the District. The operation of any well may be enjoined by the Board immediately upon the refusal to permit the gathering of information from such well as provided above. Inhibiting or prohibiting access to any Board Member or District agent or employee who is attempting to conduct an investigation under the District Rules constitutes a violation of these Rules and subjects the person who is inhibiting or prohibiting access, as well as any other person who authorizes or allows such action, to the penalties set forth in § 36.102 of the Texas Water Code.

Rule 16.2 Conduct of Investigation

Investigations or inspections that require entrance upon property must be conducted at reasonable times, and must be consistent with the establishment's rules and regulations concerning safety, internal security, and fire protection. The persons conducting such investigations must identify themselves and present credentials upon request of the owner, lessee, operator, or person in charge of the well.

Rule 16.3 Rule Enforcement

If it appears that a person has violated, is violating, or is threatening to violate any provision of the District Rules, the Board of Directors may institute and conduct a suit in the name of the District for enforcement of the Rules pursuant to the provisions of § 36.102 of the Texas Water Code.

Rule 16.4 Sealing of Wells

a) Following due process, the District may, upon order from a judge of a court of law, seal wells that are prohibited from withdrawing groundwater within the District by the District Rules to ensure that a well is not operated in violation of the District Rules. A well may be sealed when: (1) no application has been made for a permit to drill a new water well which is not exempted; (2) no application has been timely made for registration of an existing well; or (3) the Board has denied, canceled, or revoked a permit or registration.

b) A well may be sealed by physical means and tagged to indicate that the well has been sealed by the District. Other appropriate action may be taken as necessary to preclude operation of the well or to identify unauthorized operation of the well.

c) Tampering with, altering, damaging, or removing the seal of a sealed well, or in any other way violating the integrity of the seal, or pumping groundwater from a well that has been sealed constitutes a violation of these Rules and subjects the person performing that action, as well as any well owner or primary operator who authorizes or allows that action, to such penalties as provided by the District Rules.

Rule 16.5 Covering of Wells

a) In this Rule, "open or uncovered well" means an artificial excavation that is dug or drilled for the purpose of exploring for or producing water from the underground water reservoir and is not capped or covered as required.

b) Every owner or operator of any land within the District upon which is located any open or uncovered well is, and shall be, required to close or cap the same permanently or temporarily as set forth below and in accordance with Chapter 36, Texas Water Code, and subsequent changes thereto.

c) Except when the well is in actual use, the District may require the owner or lessee of land on which an open or uncovered well is located to keep the well permanently closed or capped with a covering capable of preventing surface pollutants from entering the well and capable of sustaining weight of at least 400 pounds.

d) If an owner or lessee fails or refuses to close or cap a well in compliance with this Rule within 10 days after being requested to do so in writing by an officer, agent, or employee of the District, any person, firm, or corporation employed by the District may go on the land and close or cap the well safely and securely according to this Rule.

e) Reasonable expenses incurred by the District in closing or capping a well under this Rule constitute a lien on the land on which the well is located.

f) The lien is perfected by filing the following in the deed records of the county where the well is located:

   1) the existence of the well;

   2) the legal description of the property on which the well is located;

   3) the approximate location of the well on the property; and

4) an affidavit stating:

   A) the failure or refusal of the owner or lessee, after notification, to close or cap the well within 10 days after the notification;

   B) that the well was closed or capped by the District or by an authorized agent representative, or employee of the District; and

   C) the expense incurred by the District in closing the well.

g) Nothing in this Rule affects the enforcement of Subchapter A, Chapter 756, Health and Safety Code.

SECTION 17. FEES

Rule 17.1 Fees of the District

The Board, by resolution, may establish the following fees:

1) fees for administrative acts of the District, including fees for the cost of reviewing and processing permits and the cost of hearings for permits; such administrative fees shall not unreasonably exceed the cost to the District for performing such administrative acts;

2) a fee for the transportation of groundwater out of the District;

3) a fee for checks returned to the District for insufficient funds, account closed, signature missing, or any other reason causing a check to be returned by the District's depository;

4) a fee for tampering with a meter of a permittee or registrant of the District;

5) a fee for failing to install a meter when required to do so by District Rule; and

6) any other fee determined necessary by the Board.

Rule 17.2 Payment of Fees

All fees are due at the time of application, permitting, or assessment, as applicable, and are late after 30 days beyond the date of application, permitting, or assessment, as applicable.

Rule 17.3 Failure to Make Fee Payments

Payments received within 30 days following the due date will not be subject to a late payment fee. Failure to make complete and timely payment of a fee as required by these Rules or Board Order shall automatically result in a late payment fee of ten percent of the amount not paid. The fee payment plus the late payment fee must be made within 30 days following the date of the assessment of the late payment fee, otherwise any associated permit or registration may be declared void by the Board.

Rule 17.4 Enforcement

After a permit or registration is declared void pursuant to Rule 17.3 for failure to make payment of a fee, all enforcement mechanisms provided by law and these Rules shall be available to prevent unauthorized use of the well and may be initiated by the General Manager without further authorization from the Board.