



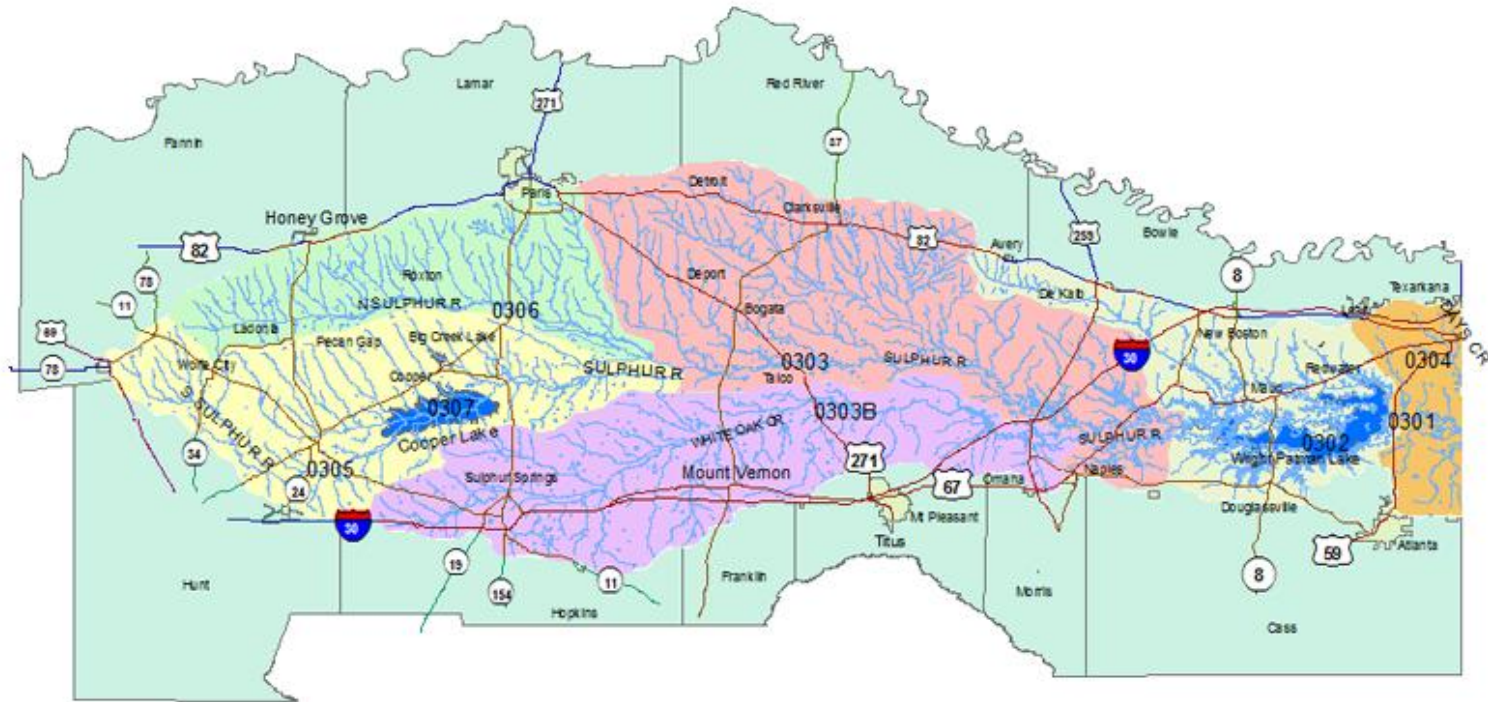
**Sulphur River Basin Clean Rivers Program Highlights Report**  
**FY 2010**

*Prepared in Cooperation with the  
Texas Commission on Environmental Quality  
Under the Authorization of the Texas Clean Rivers Act*

# **Introduction**

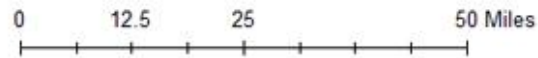
The Clean Rivers Program (CRP) is a water quality monitoring, assessment, and public outreach program administered by the Texas Commission on Environmental Quality (TCEQ), which is funded by state-collected fees. The Sulphur River Basin Authority (SRBA) coordinates the Clean Rivers Program for the Sulphur River Basin. Utilizing a watershed management approach, SRBA and TCEQ are working together to identify and evaluate water quality issues and establish priorities for any needed actions. Assisting the Sulphur River Basin Authority with the FY 2010 planning, data collection, analysis, and reporting of water quality data were the SRBA Steering Committee members, Texarkana College, TCEQ, and the United States Geological Survey (USGS). The goal of these cooperative efforts is to achieve continuing evaluation and supervision of water quality in the basin by providing appropriate, accurate, and up-to-date data. Monitoring efforts represent a large component of the CRP, providing the raw data and information required to address any concerns regarding water quality issues in the basin. The Sulphur River Basin is divided into six watersheds or areas: North Sulphur River Watershed, Sulphur River Watershed, Wright Patman Lake Watershed, Lower Sulphur River Watershed, White Oak Creek Watershed, and South Sulphur River Watershed. The streams within the basin are broken down into connected portions referred to as “segments”. Each of these segments is in one or occasionally two watersheds. A map showing the location of the segments and watersheds can be found on the following page. A detailed discussion of each of the watersheds can be found in Part I: Sulphur River Basin Highlights Report, FY 2008-2009 available at [www.sulphurr.org](http://www.sulphurr.org).

# Sulphur River Basin Watersheds and Segment Numbers



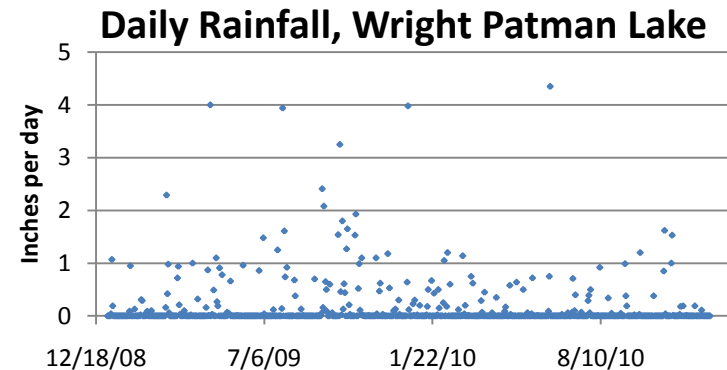
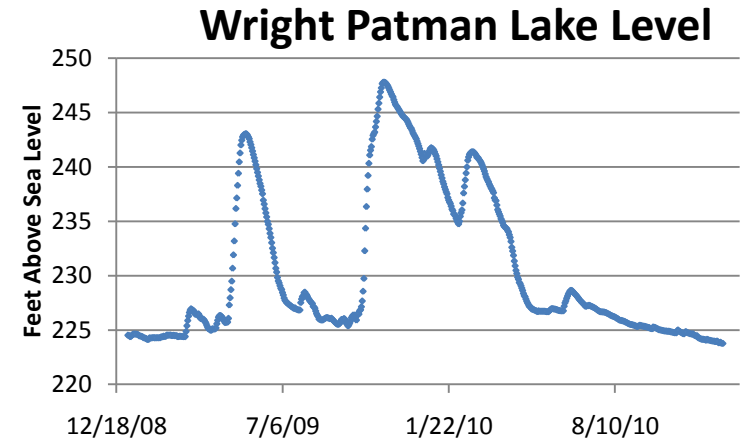
- Lower Sulphur
- Wright Patman Lake
- White Oak Creek
- Sulphur River
- North Sulphur River
- South Sulphur

Segment 0301, 0302, etc

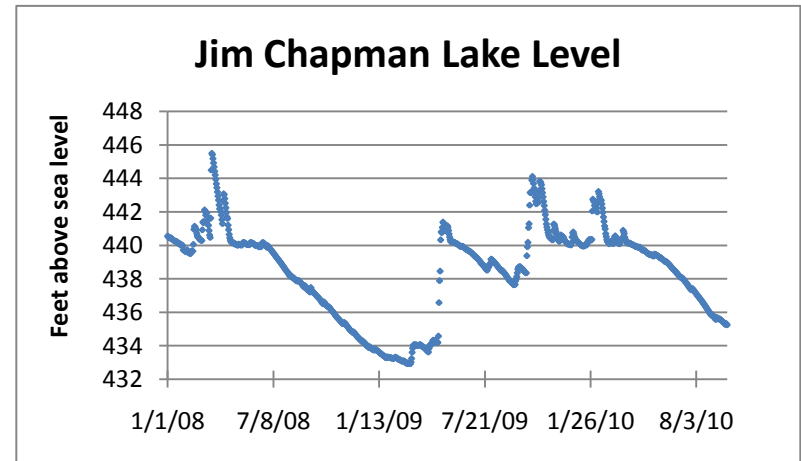
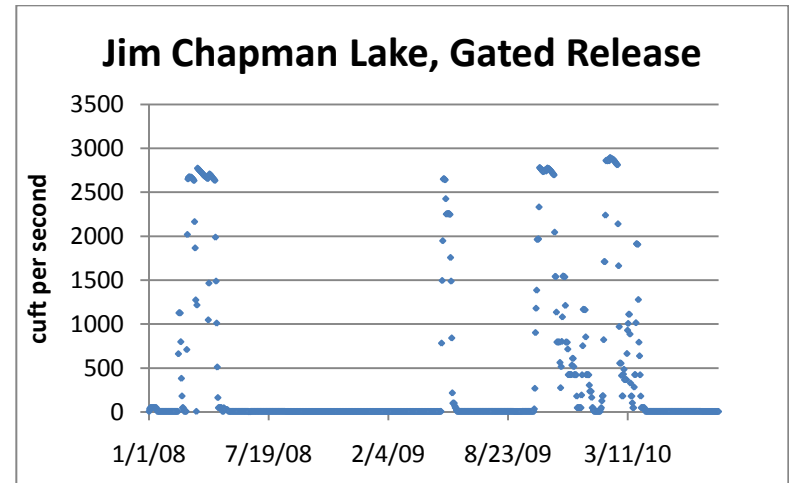


## Basin Water Conditions:

The rainfall for the Sulphur River Basin has been a tale of two halves for FY 2010. The year started following a very wet fall for 2009 that included a record October with a total of 17.62 inches as measured by the Corps of Engineers at Wright Patman Lake, WPL. The ground at the start of 2010 was saturated with water, and winter and spring rains resulted in runoff that caused WPL to stay at high levels. The Sulphur River below the dam was swelled by the continuous release of water at near 10,000 gallons per second. In early summer the rainfall diminished and WPL and the basin streams returned to more normal levels. The fall of 2010 has seen much lower rainfall than 2009. Since July the total rainfall measured at WPL has been 11.5 inches, and the lake is near its conservation pool level of 220.6 feet above sea level (November-March). Jim Chapman Lake, JCL, is located eighty-five miles to the west of WPL on South Sulphur River. Like WP (JCL) is also maintained by the Corps of Engineers. JCL started 2010 at high pool levels and the gated release rates were near its maximum (3500 gallons per second) for much of the spring. In much of the later part of 2010 the gated release rate for JCL has been at the minimum of 4 gallons per second. Rainfall, pool level, and release data for both WPL and JCL can be found at the Corps of Engineers Fort Worth District Website using the link, <http://www.swf-wc.usace.army.mil/cgi-bin/rcshtml.pl?page=Hydrologic>. A portion of the rainfall, pool level, and gated release data obtained from this site for 2009 and 2010 are summarized in adjacent graphs. These graphs typify the predictions



made by U.S. Department of Agriculture researchers who study current climate change patterns. Predictions are for an increased variance in precipitation meaning the area is going to be experiencing longer periods of dry weather interspersed by longer periods of wet weather. The extremes in rainfall and stream flow conditions make collecting and analyzing water quality data somewhat more complicated. Monitoring in low flow conditions tends to give data about point sources. Common point sources include outfalls from public waste water treatment plants and permitted industries. These releases support the base flow of many basin streams when the weather conditions are dry. Nonpoint sources are characterized by runoff after rain events and include flow from farms, timberland, building, roads and parking lots. Most of the basin monitoring is done quarterly without regard to water flow conditions. The water from point and nonpoint sources is mixed in the lakes with the nonpoint flow being the largest component when lake levels are high. When the level of WPL increases, the volume of water in the lake undergoes a dramatic increase. The average depth in the upper part of the lake, where State Hwy 8 crosses, is shallow. At normal lake levels the deepest channels are in the range of 12 to 15 feet with the flats being too shallow for boat traffic. The two pictures on the next page were taken on different days at the Hwy 8 boat ramp. Note the cypress trees next to the white truck in the parking lot. The tops of the trees are just visible in the picture on the right. Hopefully this will help put the lake level graphs in perspective.





**Normal water level at WPL Hwy 8 boat ramp**



**High water level at WPL Hwy 8 boat ramp**

## **Regional Water Plans:**

The regional water plans for both Regions C and D were extensively reviewed in the Sulphur River Basin Highlights Report for FY 2009-10. These plans are essentially unchanged at this time. Texas State Senate Bill 3 included an amendment by Senator Kevin Eltife of Tyler that required a study of Marvin Nichols' impact and its alternatives. This study was guided by a committee composed of 3 members from Region D (Paris-Texarkana) and 3 members from Region C (Dallas-Fort Worth). The committee could not agree on the contents of their report, and no report was submitted.

## **Texas Surface Water Quality Standards and the 303(d) List:**

The new Texas Surface Water Quality Standards were approved by The Commission on July 22, 2010 and are awaiting approval by the EPA. The Standards are state rules and are composed of two components: designated uses and criteria. Designated uses describe the ways a water body may be used. They include general use, aquatic life use, contact recreation use, and public water supply use. Criteria are usually numeric but are sometimes narrative or verbal. Numeric criteria are benchmarks used to evaluate water quality data or conditions.

The changes in the 2010 Texas Surface Water Quality Standard as compared to the 2000 Standard include the adoption of chloride, sulfate, and total dissolved solids standards for Jim Chapman Lake, which previously had no standards because it is a relatively new water body. The acceptable pH range for JCL and the Upper South Sulphur River was increased from 6.5-8.5 to 6.5-9.0 due to naturally occurring conditions in those segments.

The combined Texas Section 303(d) and Texas Section 305(b) Lists were prepared based on the 2000 Texas Surface Water Quality Standard. Each segment where the Standard was not met is considered to have impaired water quality and assigned to Category 5 or the Texas 303(d) List. Within Category 5, each segment was assigned to one of three subcategories to provide information about water quality status and management activities on that water body. The subcategories are defined below:

Category 5: The water body does not meet applicable water quality standards or is threatened for one or more designated uses by one or more pollutants.

*Category 5a* - A total maximum daily load study (TMDL) is underway, scheduled, or will be scheduled.

*Category 5b* - A review of the water quality standards for this water body will be conducted before a TMDL is scheduled.

*Category 5c* - Additional data and information will be collected before a TMDL is scheduled.

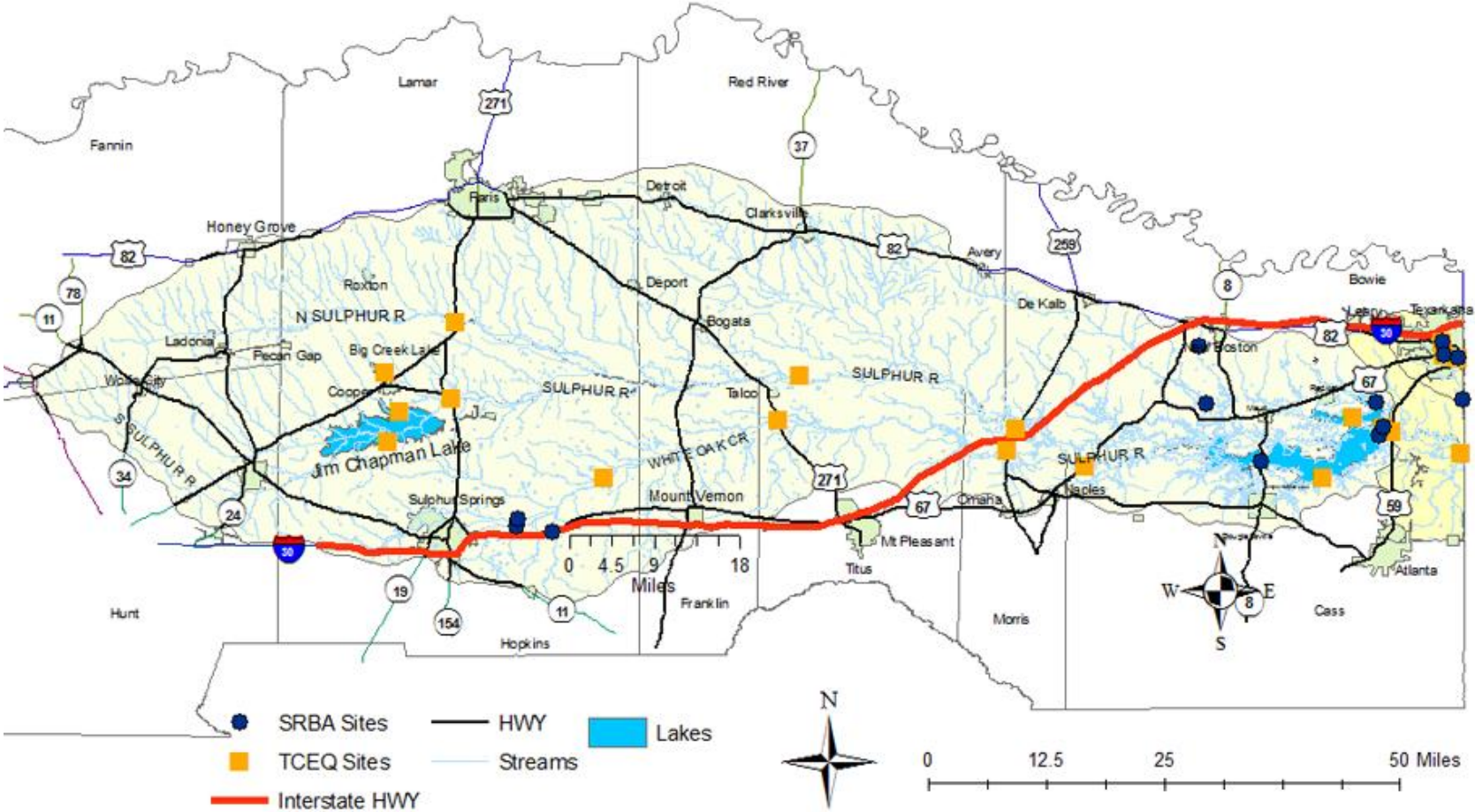
An abbreviated Texas 2008 Section 303(d) list along with discussion is included in the following table. The tables identify the water uses and supporting numerical criteria for each of the basin's classified segments. The table is ordered by the segment number and segment name.

ID and Segment	Impairment	First Year on List	Category	Discussion and Current Activity
0302, Wright Patman Lake	depressed dissolved oxygen	1996	5a	The impairments on WPL are suspected to be caused by eutrophication. In recent months the oxygen levels and pH values have been within acceptable limits. This may have been in response to higher rainfall and lake levels. Both TCEQ and SRBA are studying numerous monitoring sites to help quantify the extent of the impairments to water quality. A map of the current monitoring sites is included below this table.
	pH	2000	5a	
0303B, White Oak Creek (unclassified water body)	bacteria	2006	5b	Eutrophication is suspected of causing the depressed dissolved oxygen levels. The low DO levels are likely caused by an inflow of water that is rich in nitrates and phosphates. These can be from both point and nonpoint sources. The high bacteria counts can be caused from inflows from confined animal feeding operations (CAFO), nonpoint sources, wildlife, and other sources. The TCEQ is currently collecting data on White Oak Creek (three sites), and SRBA is studying three tributaries of White Oak Creek. The sites can be found on the map that is included.
	depressed dissolved oxygen	2000	5b	
0304A, Swampoodle Creek (unclassified water body)	impaired fish community	2006	5b	Swampoodle Creek, as is any stream that is perennial or flows all year, is assumed to have a “high” aquatic life use. In 2006, the fish and benthic data did not support the high aquatic life assignment. The stream has been assigned to category 5b and Aquatic Life Assessment (ALA), is being conducted to see if the stream standards merit changing. The ALA field work should be completed in August, 2011.
	impaired macrobenthic community	2006	5b	
0304B, Cowhorn Creek (unclassified water body)	impaired fish community	2006	5b	Cowhorn Creek has the same status as Swampoodle Creek and is also the subject of an ALA. Both are intercity streams that drain the center of Texarkana, Texas. The

	<b>impaired macrobenthic community</b>	2006	5b	watersheds have been impacted by rapid development of the area along Interstate 30 between Richmond Road and State Line Avenue. The number of new buildings, parking lots, and streets is large. The flow regimen for both streams has been changed.
<b>0306, Upper South Sulphur River</b>	<b>pH</b>	2008	5b	The high pH values have been determined to be natural for the Upper South Sulphur River. The cause is thought to be the backland soil and the limestone that crops out near the surface. The proposed acceptable range for the pH has been extended to include a high of 9. The stream is not included of the Draft Texas 2010 Section 303(d) list.
<b>0307, Cooper Lake (Jim Chapman Lake)</b>	<b>pH</b>	2000	5b	The streams that flow into Jim Chapman Lake tend to have pH values that exceed the normal pH range of 5.6-8.5, similar to the Upper South Sulphur River. The proposed acceptable range for the pH has been extended to include a high pH of 9. The reservoir is not included on the Draft Texas 2010 Section 303(d) List.

The sites monitored by both TCEQ and SRBA during FY 2010 are located on the map found on the following page. For detailed information about the monitoring activities see the URL, <http://cms.lcra.org/schedule.aspx?basin=3&FY=2010>, or access the SRBA website at <http://www.sulphurr.org/FY2010.htm>.

# Sulphur River Basin Monitoring Sites FY 2010



## TP Lake

The SRBA Steering Committee suggested a monitoring site on TP Lake, a small reservoir in New Boston, Texas. Members of the steering committee were concerned about the impact of the land fill north of the lake. The site will be monitored four times during FY 2011. Two of the monitoring events will include diurnal studies to aid in the evaluation of nutrient loading in the lake. TP Lake is also known as “Scout Lake” and “Texas Pacific Lake”. It was built before 1950 and is found on the oldest maps available from the National Resource Conservation Service. It was most likely built to support the needs of the Texas Pacific Railroad which was extended from Marshall, Texas to Texarkana, Texas in 1873. See the pictures below.



TP Lake view from the north



TP Lake view from the south

## Public Outreach:

Volunteer monitoring activities, events, newsletters, special studies activities, and meeting dates with agendas are posted regularly on the public outreach webpage. Increased public involvement can result in more public awareness and a larger sense of community responsibility. Members of the Texarkana College Chemistry Club are currently active in the monitoring for SRBA and presented posters at the American Chemical Society national convention in the spring. Ms. Delores McCright of the Texarkana College Biology Department is a trainer and quality assurance officer for the Texas Stream Team Program. She holds training sessions at TC twice a year and quality assurance sessions as necessary. The training is open to the public. Ms. McCright can be reached at [delores.mccright@texarkanacollege.edu](mailto:delores.mccright@texarkanacollege.edu). Nick Barber and Judith Easterling of the TC Earth Club are currently studying Waggoner Creek water quality. The pictures below are of Nick conducting Texas Stream Team training and collecting water samples on Waggoner Creek.



## Ark-Tex Council of Governments

The Ark-Tex Council of Governments (ATCOG) sponsors area water quality monitoring. In addition they are active in a number of other outreach activities that are important to the basin. With funding from the Texas Commission on Environmental Quality (TCEQ) 604(b) grant program, ATCOG helps to educate citizens about the urgent need to protect our water resources and is assisting in the development of a regional Water Quality Management Plan (WQMP). ATCOG ensures that any proposed project complies with the WQMP by providing assistance to applicants seeking State Revolving Fund (SRF) loan projects. Additionally, ATCOG is providing water quality education and outreach to the citizens living within the region by conducting presentations, distributing outreach materials, and updating our website to include links to numerous water quality programs containing essential information. ATCOG has also developed a targeted education and outreach program which addresses the most significant water quality issues within the region. The primary focus is on water conservation methods, lawn care techniques, proper disposal of household chemicals, pet waste management practices, and non-point source pollution. Mr. Paul Prange is the Environmental Resource Planner for ATCOG and can be reached at 903-832-8636 or emailed at [pprange@atcog.org](mailto:pprange@atcog.org) (See picture).



## **Sulphur River Basin Authority Board:**

The Sulphur River Basin Authority is composed of seven local citizens appointed by the Texas Governor to serve terms of six years. Only 6 Board Member are appointed at this time with the seventh awaiting an appointment. The Board is pleased to be able to join with TCEQ in the Clean Rivers Program and sponsor basin monitoring that is used to help preserve the water quality in the Sulphur River Basin.



SRBA Board Members (left to right): Michael Russell, President, Patricia Wommack, David Neeley, Brad Drake, Kirby Hollingsworth, and Borden Bell, Vice President



THE TEXAS **C**LEAN  
**R**RIVERS PROGRAM



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