INTRODUCTION

In 1991, the Texas Legislature passed the Texas Clean Rivers Act requiring basin-wide water quality assessments to be conducted for each river basin in Texas. Under this act, CRP has developed an effective partnership involving the TCEQ, other state agencies, river authorities, local governments, industry, and citizens. Using a watershed management approach, NRA and TCEQ work together to identify and evaluate surface water quality issues and to establish priorities for corrective action. Under CRP, NRA is responsible for the San Antonio – Nueces Coastal Basin, the Nueces River Basin, the Nueces – Rio Grande Coastal Basin, and the adjacent bays and estuaries. For more information, visit NRA's website at www.nueces-ra.org.

SAN ANTONIO – NUECES COASTAL BASIN

Copano Bay

TMDL Project for Bacteria in Oyster-Harvesting Waters

A preliminary model of bacteria loading into Copano Bay used historic data from CRP and SWQM stations, located in the lower portions of the Aransas and Mission Rivers. In response to stakeholder requests for additional data in the upper watershed and at WWTFs, TSSWCB contracted with NRA to conduct this monitoring to support the TMDL. This sampling will provide the project with data that will allow the development of better load estimates of bacteria to the rivers and bay system.

SWQM to Support Copano TMDL

The project will attempt to sample during 7 dry weather events, targeting July and September, and 11 wet weather events from October 2007 through November 2010. Since most of the monitoring sites for CRP or SWQM are located in the lower portions of the Aransas and Mission Rivers, this project targets sites on the upper reaches / unclassified portions of the rivers, their tributaries, and WWTF discharges. To date, 4 dry events and 3 wet events have been sampled. The WWTFs are sampled by TCEQ staff, as they have the authority to enter the facilities. Wet events are more difficult to plan for so the WWTFs are only sampled if TCEQ staff is available. The data from the project will be submitted to SWQMIS. It is being used by the University of Texas at Austin Center for Research in Water Resources to develop a model of bacterial loading in the watershed.

NUECES RIVER BASIN

2008 Lake Levels

LCC recorded 21" of rain for the entire year (average is ~30"), falling from 98.7% of capacity to 65.8%. CCR recorded 16.8" (average is ~25") for the year, falling from 97.3% of capacity to 81.2%. The LCC/CCR system received 53,043 AF of inflow, had 214,066 AF of evaporative losses, and the combined volume fell from 97.7% of capacity to 77%.

Atascosa TMDL

The TMDL Program will conduct an aquatic life UAA to assist TCEQ in determining the appropriate aquatic life use for the stream. Work also continues on the contact recreation use impairment due to elevated bacteria levels. A recreational UAA is planned to determine if the existing bacteria standard is appropriate for the Atascosa River. Scheduling of the UAAs will depend on the duration of the present drought.

Channel Loss Study on Frio and Nueces Rivers

A water management strategy identified by the Coastal Bend Regional Water Planning Group was to transfer water, for water supply purposes, from CCR to LCC via a pipeline to reduce evaporative and channel losses. Channel loss studies had been conducted in the Frio River from CCR to its confluence with the Nueces River. Extrapolating those results downstream to LCC, there was an estimated 38% loss between the two reservoirs.

Another channel loss study was conducted in March 2008. This study looked at the entire segment of the river, assuming US 59 as being the most upstream location influenced by water levels at LCC. This study concluded that channel losses above the confluence of the Frio and Nueces Rivers rejoin the Nueces River below the confluence of Sulfur Creek. In essence, the water flows underground via alluvial sands and then is forced back into the river as the sands are pinched out by a more dense clay unit. This translates to a calculated 2% to 3% channel loss as opposed to 38%. Another significant find is that the influence of LCC extends much further upstream that previously thought – at least up to Airport Road when LCC is full. Based on the results of this study, additional studies during dry times are needed to fully evaluate if a pipeline between the two reservoirs is a viable water management strategy.

ACRONYMS

AF – Acre Feet
BMP – Best Management Practice
CBBEP – Coastal Bend Bays and Estuary Program
CCR – Choke Canyon Reservoir
CRP – Clean Rivers Program
CWQM – Continuous Water Quality Monitoring
DO – Dissolved Oxygen
EPA – Environmental Protection Agency
FY – Fiscal Year
LCC – Lake Corpus Christi
RRC – Railroad Commission
SWQM – Surface Water Quality Monitoring
SWQMIS – Surface Water Quality Monitoring Information System
TCEQ – Texas Commission on Environmental Quality
TDS – Total Dissolved Solids
TMDL – Total Maximum Daily Load
UAA – Use Attainability Assessment
WWTF – Waste Water Treatment Facility

Lower Sabinal TMDL

The City of Sabinal is moving forward with plans to relocate their WWTF to a location above the flood plain. Construction of the new facility is planned to take place in 2009.

Nueces River Cleanup Project

In 2003 there were a number of reports of oil sheens on the Nueces River. TCEQ hired a diver to determine the cause of the sheen. The culprit was a tar bucket that periodically released blobs of tar. The diver removed the bucket from the river bottom and commented on the numerous other items he'd seen including boats, cars, and refrigerators.

County Road 73 runs parallel to this portion of the river located upstream of the saltwater barrier dam. The houses are in various states of disrepair. There are no public water supply nor wastewater services in part of the area. From both the river and road perspectives, there appears to be water wells that either draw directly out of the river or from the adjoining alluvium. Outhouses within a few yards from the river bank and flowing discharge pipes have also been observed. Many of the yards contain trash and debris that will be washed downstream with the next flood. At one location, a school bus is on the verge of falling into the river.

This portion of the river is the conduit for raw water from LCC to the City of Corpus Christi's O. N. Stevens Water Treatment Plant – the drinking water source for much of the area. A cleanup effort is being coordinated by Nueces County. Other participating entities include NRA, City of Corpus Christi, TCEQ, Texas A&M University – Corpus Christi, Beautify Corpus Christi, San Patricio County, and CBBEP.

SALTWATER MINIMIZATION PROJECTS

The Texas RRC, working with EPA and TCEQ, conducted well plugging activities in the CCR and Petronila Creek watersheds. The goal of the projects is to reduce TDS and chloride contamination from orphaned, abandoned and unplugged, and improperly plugged wells. The 3½ year project concluded August 2008.

For CCR, RRC plugged 153 of 228 identified wells at a cost of $1.2M. 16 of the identified wells were taken over by other operators and brought into compliance through other means. For Petronila, RRC plugged 19 of the 45 identified wells at a cost of $0.4M. 9 of the identified wells were taken over by other operators and brought into compliance. RRC intends to plug the remaining wells during FYs 2008 and 2009 with Oil Field Cleanup Funds.

NUECES – RIO GRANDE COASTAL BASIN

Arroyo Colorado

Watershed Protection Plan

Implementation of the Arroyo Colorado WPP continues to be successfully implemented. Education and outreach activities occur on a daily basis. Numerous agriculture and wastewater infrastructure BMPs have been implemented, with many more being planned – too many to be adequately described in this document. For more detailed information, visit the Arroyo Colorado Partnership website at www.arroyocolorado.org.

Arroyo Colorado Bacteria Study

TCEQ contracted with NRA to conduct a bacteria study on the Arroyo Colorado Above Tidal segment. The project will collect *E. coli*, Enterococcus, and fecal coliform at 6 sites monthly from January 2009 through August 2009.

This segment remains listed as impaired for bacteria for contact recreation based on fecal coliform data. *E. coli* has replaced fecal coliform as the indicator bacteria in fresh water streams. While still indicating a problem, the *E. coli* data seem to indicate the bacteria levels are improving. This raises several questions: Are the bacteria levels actually improving due to the BMPs that are being implemented as a result of the WPP? Are the *E. coli* bacteria dying off due to the relatively high conductivity levels of >4000 µS/cm? Would Enterococcus be a better indicator bacteria? This study will begin the data collection to assist in determining the answers to those questions.

Petronila Creek

TMDL / Continuous Monitoring

The CWQM station on Petronila Creek was installed by TCEQ in December 2006 and has been collecting data for about 2 years. There have been some occasional equipment failures, including rat-chewed cables. NRA maintains the station. The results can be viewed at www.tceq.state.tx.us/cgi-bin/compliance/monops/water_daily_summary.pl?cams=731.

Clean up by LCS Corrections Services, Inc.

A new correctional facility has been built outside the city of Robstown requiring a 150,000 gpd wastewater discharge permit. Residents along Petronila Creek objected to the permit claiming that the discharge would contribute to flooding that occurs during heavy rains. Flooding has been exacerbated by debris impeding the flow of the creek. LCS agreed to clean out the creek and the residents agreed not to protest the permit.

Oso Bay / Oso Creek Bacteria TMDL

TSSWCB projects are currently working to collect data in the Oso Creek watershed to determine more precisely the source of Enterococci from agricultural areas. Projects are examining soil, stream sediment, and groundwater. TMDL development for Oso Creek will proceed after the TSSWCB projects deliver information, anticipated to be towards the end of FY 2010. The Oso Bay TMDL was approved last year. The Water Quality Standards Team is planning for a UAA for the Blind Oso bird rookery area, which may adjust bacteria criteria in that area. TCEQ plans to develop a single Implementation Plan covering the bay and creek, after the creek information and TMDL are completed.

BAYS AND ESTUARIES

Oso Bay / Laguna Madre Low DO TMDL

TMDL studies completed circa 2005 verified low DO concentrations, but also concluded that to be due to natural characteristics of the water bodies, specifically high salinity and high seasonal temperatures. Revised criteria for Oso Bay and the Laguna Madre are being proposed based, in part, on the findings of the earlier studies.

Corpus Christi Bay

Listing

On July 17, 2008 EPA published a notice in the Federal Register providing the public the opportunity to review its decision to add Corpus Christi Bay to the Texas 2008 303(d) list as required by their public participation regulations. Based on its review of public comments received in response to this public notice, EPA decided to maintain the listing of Corpus Christi Bay on the State's 303(d) list but has amended the scope of the listing to geographically define the impairment as restricted to only the Ropes Park and Cole Park Beach portions of Corpus Christi Bay as presently delineated by the Texas Beach Watch Program. Likewise, EPA has re-categorized the listing of the Ropes Park and Cole Park Beach portions of Corpus Christi Bay in category 5c of the State's integrated report.

CBBEP project proposal

The Water and Sediment Quality Implementation Team is submitting a FY 2010 proposal to help address this issue. The objective is to identify the high bacteria level source(s), which should eventually lead to the removal of the bay from the 303(d) list and help protect human health.

Nueces Bay Zinc TMDL

The implementation strategy for the *Nueces Bay Zinc in Tissue TMDL* outlines the need to document the natural attenuation of zinc in tissues. There were no available market-size oysters in Nueces Bay in late 2008 but it is expected that work will be initiated in 2009 to determine zinc levels in oysters.

Nueces River Authority

THE TEXAS CLEAN RIVERS PROGRAM

2009 Basin Highlights Report

San Antonio – Nueces Coastal Basin

Nueces River Basin

Nueces – Rio Grande Coastal Basin

Prepared in Cooperation with the

TCEQ

Texas Commission on Environmental Quality