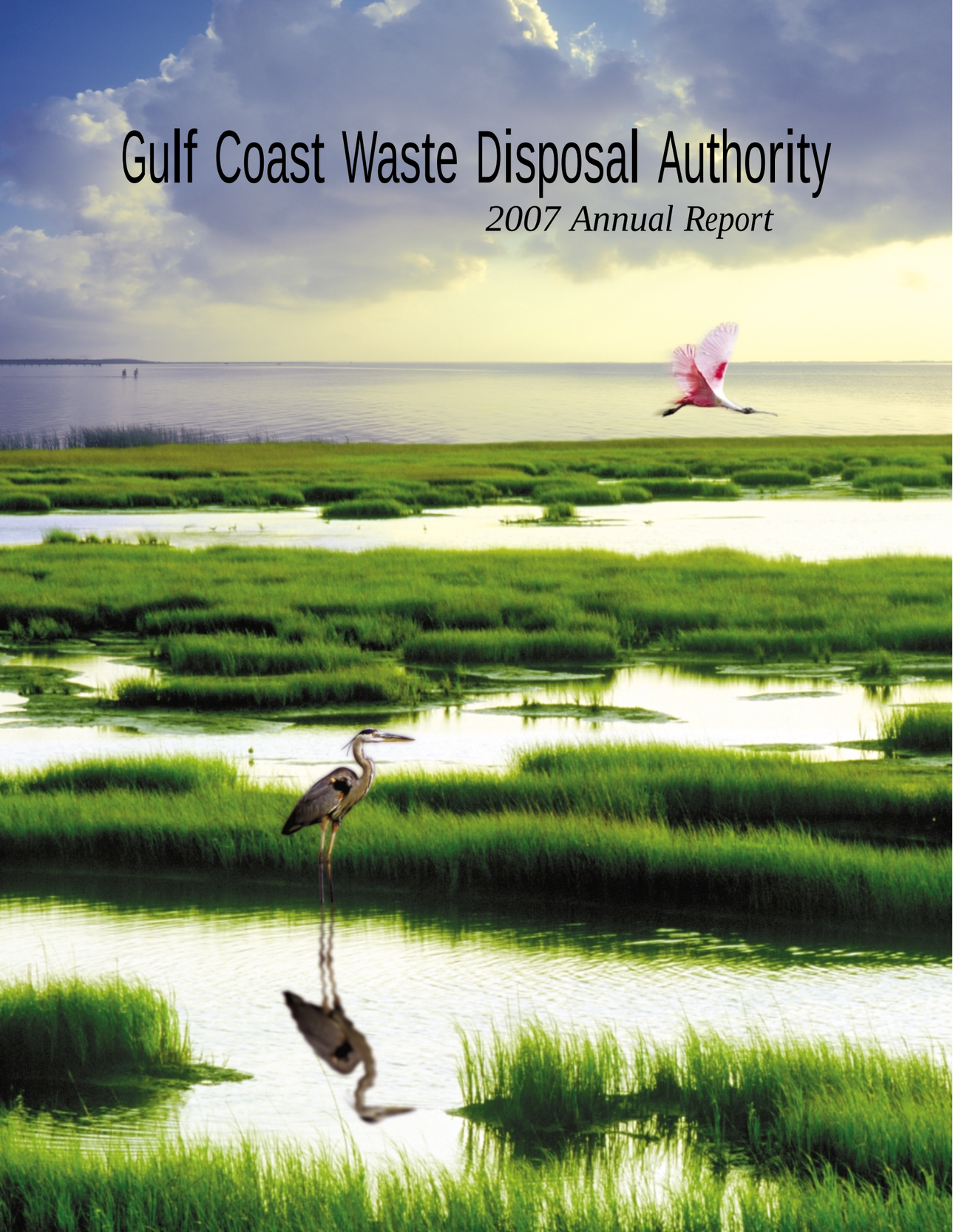
Gulf Coast Waste Disposal Authority

2007 Annual Report



It is the mission of Gulf Coast Waste Disposal Authority to protect the waters of the State of Texas through regional waste management practices which are environmentally sound and economically feasible.

Foreword

Process Improvement Projects

Those of you who regularly receive the Gulf Coast Waste Disposal Authority Annual Report know that for several years now we have been hard at work on new construction at each of our Greater Houston Area Industrial Wastewater Treatment Facilities. The changes are unique to each location but all have the goal of improving our ability to perform effective and efficient treatment.

Completion and Start-Up

Over the last two years, and especially over the last year and extending into 2008, most of these improvement projects will be finished. In some cases the plant staff is already well into learning and fine tuning the new equipment, including new treatment tanks and changes such as pure oxygen injection. The effort to document, train and design new safety protocols for these new plant processes has been extensive.

Cooperation

Supported by the industries for which it treats wastewater, GCA has spent between $20 and $30 million dollars building plant improvements. With the advice of our Participant Industries, the expertise offered by third party consultants, and the coordination of all these efforts by the Authority's own Industrial Support Group and Technical Services Group, these projects have been or soon will be completed.

Who and Where We Are

GCA's three industrial facilities in the general Gulf Coast Area are the Bayport Facility in Pasadena, Texas; the 40-Acre Facility in Texas City, and the Washburn Tunnel Facility which is located along the Houston Ship Channel, also in Pasadena. GCA also operates a Central Laboratory on the Bayport Site and another industrial treatment facility in Odessa, Texas. In addition, GCA owns and operates a non-hazardous industrial landfill and a regional municipal wastewater treatment facility. This report features Washburn Tunnel Facility, but much work has also been done at the other two Houston area industrial locations. The task of completing and starting up major improvements is not yet completely accomplished, but it is well begun.

Review

Please page through this report to see what GCA and its participating industries have been doing to pursue overall improvement of the treatment processes. We think it's a great story.

Odessa Facility

The staff at Gulf Coast Authority is often asked why a “Gulf Coast” operation has a facility in Odessa, Texas. That’s a long way from the beach. The answer: because we were asked to come.

As a special district of the State of Texas, GCA has the Legislatively-granted authority to operate anywhere within the borders of the State. When the industrial community and the local officials in the Odessa area asked whether GCA could operate a wastewater treatment plant to serve both the City of Odessa and several industries, the answer was “yes,” and the treatment plant became the Odessa South Regional Wastewater Treatment Facility.

Now in operation for 10 years, the Odessa Facility provides treatment services to multiple wastestreams from the area’s industrial park and from municipal communities, as well as accepting trucked-in wastewater.

Odessa Facility treats three million gallons of wastewater per day. Currently, customers include Flint Hills Resources (formerly Huntsman Polymers), Odessa/Ector Power Partners and Orrex, LLC, Navasota Energy L.P., and of course the City of Odessa, along with several commercial customers and trucked-in waste from Champion Technologies, Inc., AAA Affordable Vacuum Truck Service, B&W Chemical Toilets and Crown Equipment.

Bayport Facility

In 2007 the Bayport Industrial Wastewater Treatment Facility wound up a major improvement project and began a new one.

The final components of the improvements to Bayport’s first-step treatment system were completed and put into operation during 2007. The improvements included an additional tank, plus related control equipment, and the addition of a pure oxygen aeration system. The six-year project totaled $20 million. By September, the new units were up and running.

From planning to completion, the project involved plant staff, outside specialty consultants and GCA’s own Technical Services Group. It’s fair to say that teamwork was a major contributing factor to the project’s success.

During 2007 focus shifted to design of new belt presses at the Facility. All treatment plants generate sludges, which are composed largely of the excess bacteria that do the work of digesting contaminants, and also of grit or sand which is not consumed in the treatment process. This non-hazardous sludge must be removed on a regular basis. Before sludge is hauled to permitted disposal sites, the water must be squeezed out of it so it’s lighter to transport. That’s what belt filter presses do. Bayport’s solids have increased steadily over the years.

The new presses will allow Bayport Facility to more efficiently handle the solids load. Currently, Bayport treats wastewater for 63 industries in the Bayport Industrial District and two municipalities, The Facility processes an annual total of some 15,700,000 tons of dry solids and treats an average of 13 million gallons of wastewater per day. The Bayport Facility is located at the intersection of Bay Area Blvd. and Port Road in Pasadena, Texas.

40-Acre Facility

Major improvements at 40-Acre Facility will be complete sometime during the summer of 2008. The Oxygenated Activated Sludge (OAS) Unit is being constructed in a space formerly occupied by an extra impoundment area at the Facility and effectively adds an activated sludge plant to the aerated lagoon system which has been in use since the inception of 40-Acre in the mid '70's.

Wastewater will first be treated in a pure oxygen-boosted aeration basin and a clarifier prior to entering the pre-existing lagoons. Work on the new system began with planning and engineering in 2003.

Currently, 40-Acre processes between seven and eight million gallons per day of industrial wastewater. Participating customers at 40-Acre are Union Carbide Corporation, a subsidiary of The Dow Chemical Co., U.S.A., Sterling Chemical and Oiltanking Texas City, L.P. A small stream from the nearby GCA landfill is also treated at the Facility. The 40-Acre Facility actually sits on a 160 acre site.

Campbell Bayou Facility

Campbell Bayou Facility is located just off Highway 197, near its intersection with Highway 146 and Interstate 45. It is situated strategically to serve the industries of Texas City, Texas. The industrial landfill does not accept household waste but is designed specifically to manage the construction debris and other non-hazardous solid industrial waste common to the petrochemicals industry.

The operation received its first truckload of waste in late 1979 and has since completed and sealed nine waste cells and one land treatment unit. Each of these cells was closed to the standards imposed by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

Currently, the GCWDA staff has begun work on planning the next developmental stage for the site. CBF is expected to serve its industrial customers well into the future. The landfill is available by contract only and is currently used by UCC/DOW and Sterling LLC.

During 2007, the landfill received monthly disposal amounts ranging from 145 tons to 894 tons. All waste is received by transfer truck.

2007 Feature

Washburn Tunnel Facility

Creation of an improved treatment system at Washburn Tunnel Facility (WTF) came to a close in early 2007. The $3 million project began operation in February of ‘07 and utilized a basin which had previously been used as a clarifier, a part of the plant where heavier solid materials settle out of the water before treatment. The T-110 Clarifier was converted in this project into a First-Step Aeration Tank.

In the newly configured tank, the injection of pure oxygen boosts the ability of naturally-occurring bacteria to consume organic compounds.

“The installation of a First-Step Aeration Tank has improved the options for our operators to fine tune the treatment process,” said Greg Seay, Operations Supervisor. Selected incoming streams are now routed into the new aeration basin for treatment prior to moving through the rest of the plant. The bacteria, boosted by pure oxygen, eliminate a high percentage of the organic compounds before they have a chance to enter the main part of the treatment plant.

Facility Manager Gordon Pederson explained that “the first step aeration has dramatically changed the way our operators view the treatment process. They track overall treatment performance in each step of the aerated system. Using oxygen in the process raised the training for safety in material handling and requires a higher level of attention from the operators. Overall VOC (volatile organic compounds) emissions were reduced from WTF with the change in treatment configuration.” Pederson also voiced his appreciation for the work done by the industrial Participants who pay for the operation of the Facility. “This is a co-operative process,” he said. “The Industrial Advisory Committee was involved in the new design every step of the way, meeting long hours with plant staff and our Technical Services Group.”

The Tunnel Facility processes some 15.5 million gallons of wastewater per day. As any treatment plant operates, the bacteria that do the work of cleaning the water eventually complete their life cycle. These excess bacteria, along with solids such as grit or sand that don't break down in treatment, form what operators call sludge. The non-hazardous sludge is disposed of in a permitted landfill.

WTF is located off North Richey in Pasadena, along the shores of the Houston Ship Channel.

Blackhawk Facility

Blackhawk Regional Wastewater Treatment Facility is situated on West Bay Area Blvd. between FM 528 and FM 518 in Friendswood, Texas. Blackhawk has twice won the Platinum Award, the highest award granted by the National Association of Clean Water Agencies. The City of Friendswood is the largest contributor to the treatment plant. Other partners sending flows are Harris County Municipal Utility District (MUD) 55, Baybrook MUD 1, the City of Houston and, through agreement with Friendswood, the City of League City.

The Blackhawk Facility has seen a number of upgrades over the years to increase both treatment capacity and efficiency. Currently, average flow through the process has reached five million gallons per day (mgd). Blackhawk is permitted to treat 9.25 mgd. Wastewater receives tertiary levels of treatment, which means the water goes through primary, secondary and advanced treatment prior to discharge to Clear Creek. The final steps in the process are filtering through sand and charcoal and treatment with ultraviolet light. Jerald Landis, Superintendent of Municipal Services, noted that the staff and the Blackhawk Advisory Committee have to keep a careful watch on accelerating development in the area. Both commercial development and housing have been growing at a fast pace. The Blackhawk Committee is composed of representatives from the Participant users of the plant. “The Committee takes a real interest in how things are going with the treatment plant and provides valuable input as we work to keep Blackhawk current both from a technical standpoint and the ability to treat the incoming flow,” said Landis.

Central Lab

Almost all laboratory work for GCWDA is conducted at a single facility located on the same site as the Bayport Industrial Wastewater Facility. Central Laboratory opened in April 1991 to meet the demand for increasingly complex, and expensive, lab equipment needed to provide the information demanded by regulations on wastewater treatment. The Lab also combined the staff support which had previously been divided among as many as four separate lab operations. Bringing the expertise of the various labs together with the necessary equipment proved an immediate success.

Since that time, lab space has more than doubled and the well-trained staff has grown to more than 30 employees, led by Lab Manager Diane Maloy.

Central Lab is a service group within the overall organization and provides high quality data for regulatory reporting and for process control to both the Industrial and Municipal sides of the GCA waste management program. Tests run the gamut from relatively routine wet chemistry analyses such as pH, Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) to sophisticated analysis of metals, volatile and semi-volatile organic compounds and pesticides.

In 2007, Central Lab analyzed more than 280,000 samples from GCA operations. As part of its continuing commitment to quality and customer service, the Lab has applied to the Texas Commission for Environmental Quality (TCEQ) for environmental laboratory accreditation. This accreditation is required for all laboratories that perform regulatory analyses for outside customers after June 30, 2008. “Application for certification by TCEQ is no easy task,” said Ms. Maloy. “The accreditation process requires that the quality system encompass every facet of the laboratory.”

The quality system requirements are set by the National Environmental Laboratory Accreditation Program (NELAP). “Central Lab has incorporated all these requirements into its Quality Manual,” Maloy said. She said the manual and an application are submitted to TCEQ which reviews all phases of the program.

The TCEQ not only reviews these documents very carefully, said Maloy, they also perform an on-site visit. After the paper review and on-site visit, and assuming a good outcome, TCEQ issues certificates for all analytical fields for which the lab applied.

“I said earlier that earning TCEQ accreditation is not easy,” said Maloy, “but we do quality work at our facility, and we intend to become a certified lab.”

Vince Bayou

Located just outside of the Washburn Tunnel Facility (WTF), Vince Bayou Receiving Station (VBRS) provides additional capability for WTF with the acceptance of trucked-in chemical toilet waste, septic tank waste, nonindustrial wastewater and Class I and Class II non-hazardous industrial wastewater. Wastestreams delivered to VBRS are metered, tested, and then pumped to WTF for treatment.

Presently, 20 portable toilet companies, 17 septic tank cleaning companies, three non-industrial companies, and six industrial companies deliver approximately 1.165 million gallons of waste to VBRS each month.

GULF COAST WASTE DISPOSAL AUTHORITY

PROTECTING THE WATERS OF TEXAS

Created by the Texas Legislature in 1969, Gulf Coast Waste Disposal Authority (GCA) is a non-tax-supported unit of local government dedicated to waste management activities. The Authority's primary jurisdiction, and the area from which the nine member Board of Directors is selected, is comprised of Harris, Chambers and Galveston counties. The Authority may provide services in any part of the State of Texas but coordinates its activities with any other authorities or districts in those areas.

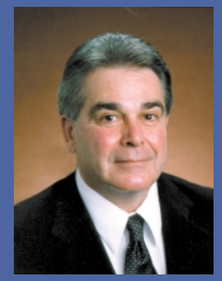
Board of Directors

J.M. "Mark" Schultz
Chairman of the Board,
Chambers County

Rita E. Standridge
Vice Chair,
Chambers County

Sam Dell'Olio
Secretary,
Galveston County

Franklin D.R. Jones, Jr.
Member,
Harris County



James A. Matthews, Jr.
Member,
Galveston County

Ron Crowder
Member,
Galveston County

Dr. Irvin Osborne-Lee
Treasurer,
Harris County

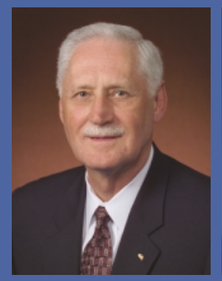
Zoe Barinaga
Member,
Harris County

Lamont Meaux
Member,
Chambers County

Shirley Seale
Former Member,
Chambers County

Mrs. Seale was honered at a dinner, February 2008 for her 10 years of service on the GCA Board. She resigned due to an appointment to the Trinity River Authority Board.

Senior Managers



Charles Ganze
General Manager

Ricky Clifton
Manager of Industrial Operations

Lori Gernhardt
Manager of General Operations

Jim Cooksey
Manager of Financial Services

GCA

Gulf Coast Waste Disposal Authority

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