# GULF COAST WASTE DISPOSAL AUTHORITY

## 2012 ANNUAL REPORT

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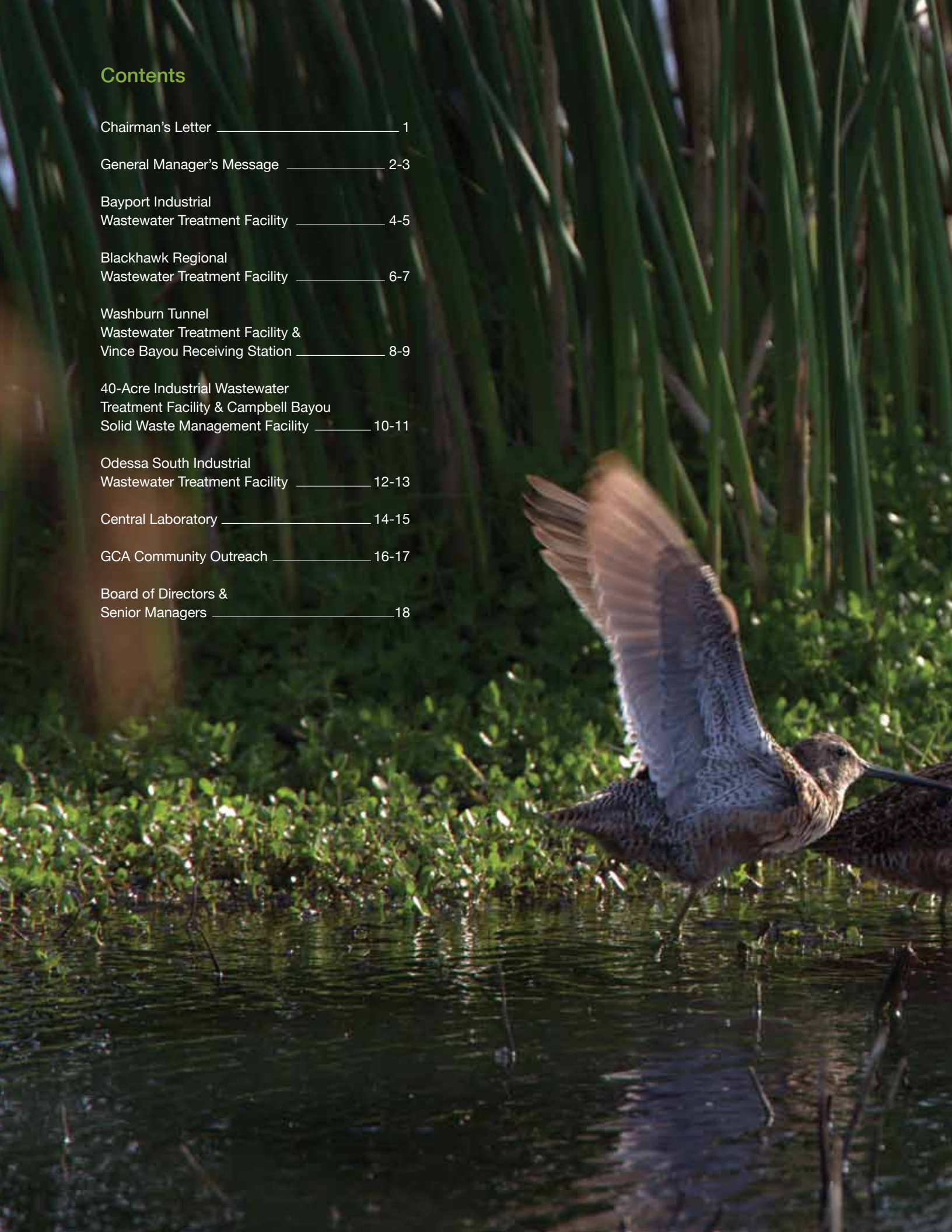

# Chairman's Letter

It is both an honor and a pleasure to continue to serve as Chairman of the Board of the Gulf Coast Waste Disposal Authority (GCA).

When the Texas Legislature created the Authority in 1968, Galveston Bay, the Houston Ship Channel and many other waterways in Galveston, Harris and Chambers Counties were in pretty bad shape—polluted, littered with trash and increasingly inhospitable to wildlife. When GCA was created, wastewater treatment on a regional scale was an untested, untried idea. We acquired an old treatment facility from Champion Paper Company, modified and improved it to become the Washburn Tunnel Wastewater Treatment Facility—GCA's first regional plant—and began proving the regional treatment concept. Other GCA facilities followed, and today, forty-five years later, we see the results in our healthy, reinvigorated bay environment: The waters are cleaner; wildlife has rebounded and flourished; and our economy has benefited from the industrial and municipal growth GCA continues to help make possible.

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

The Authority has been so successful that our operations have expanded beyond the tri-county Gulf Coast area. In the late 1990s, Odessa was faced with constrained economic development due to the city's inability under environmental regulations to combine municipal wastewater with industrial streams that had not undergone pretreatment. The city invited GCA to propose a regional solution, and the Odessa South Industrial Wastewater Treatment Facility was born.

In May of this year, the Texas Legislature, responding to continuing drought conditions, expanded GCA's role to enable us to provide a wider array of water resource solutions. We look forward to meeting that challenge with the same degree of professionalism, commitment and financial responsibility GCA and our people have demonstrated since the Authority's inception four and a half decades ago.

What makes GCA function so well is our people, the dedicated employees, managers and board members who do their very best, every day, to protect the waters of the State of Texas and to work with our customers and government officials to help foster economic development that is the envy of the nation.

Sincerely,

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BELLA RAE

# General Manager's Message

I am pleased to report that 2012 was another successful year for the Gulf Coast Waste Disposal Authority (GCA) as we continue to fulfill our mission of protecting the waters of the State of Texas through environmentally sound and economically feasible regional waste management practices.

Employees at every level of the organization are committed to GCA's mission in their professional as well as their private lives. This commitment shows in the way they perform their jobs—their willingness to make suggestions for operational improvements, cost savings and business development activities—and their inherent understanding that the work we do is important. It shows in their community involvement, from providing facility tours for government officials, civic organizations and students, to serving on economic development councils and community advisory panels, to participating in events such as the annual River, Lakes, Bays 'N Bayous Trash Bash®. To give you a better feel for our people, each facility section in this year's Annual Report is presented as a report from that Facility Manager.

**GCA's operations comprise:**

- Four regional industrial wastewater treatment facilities located in the tri-county Gulf Coast area and in the City of Odessa;
- One regional municipal wastewater treatment facility serving the cities of Friendswood and Houston and two Municipal Utility Districts and two small municipal wastewater treatment plants serving the Port of Houston and the Cedar Bayou Park Utility District;
- A landfill for non-hazardous solid waste:
- A receiving station for trucked-in non-hazardous wastewater;
- A Central Laboratory accredited by the National Environmental Laboratory Accreditation Program (NELAP);
- A financing arm that supports economic development and environmental protection in Texas by issuing private activity bonds for solid waste projects and industrial wastewater treatment equipment for industries operating in the state and industrial development bonds for manufacturers in Galveston, Harris and Chambers counties.

Our wastewater treatment activities employ pollutant-consuming, naturally occurring microbes, clarifiers and settlement ponds to remove organic pollutants and suspended solids so that the treated water may be discharged into the environment in clean condition.

Although the bulk of our operations are in the tri-county Texas Gulf Coast area, we are authorized to provide wastewater treatment services in other parts of the state, upon invitation by local authorities as was the case with our regional wastewater treatment facility in Odessa.

Prompted by the prolonged drought, the Texas Legislature in its 2013 session passed a bill that expands GCA's purview to enable the Authority to pursue water projects. The bill authorizes the Authority to have the same powers with regard to the acquisition, construction, and operation of a water system that it has with regard to disposal systems. Water systems covered by the legislation include pipelines, conduits, canals, pumping stations, force mains, plants, storage, and other water treatment, collection, disposal or distribution facilities.

In 2011, we initiated a Business Strategy designed to train and empower our employees to participate in GCA's business development by recognizing, identifying and communicating to GCA management potential business opportunities. The implementation of the program is ongoing and especially timely in light of the new legislation. As a result of an employee suggestion last year we posted a sign on the ship channel at our Washburn Tunnel Facility to alert ship traffic to our wastewater treatment operation and services.

Our Finance Department issued $275 million in private activity bonds in 2012 for Hurricane Ike damage repairs at a Baytown petrochemical plant. Outstanding Private Activity Bonds issued by GCA currently total $1.77 billion. The Authority has issued over $3 billion in these bonds since 1979.

GCA's Core Values underpin all of our operations and the way we expect all employees to conduct our business:

- *Stewardship* of the environment and of the health and safety of our employees and neighbors;
- *Communication*—open, honest, frequent—with all stakeholders;
- *Reliability* of our facilities, systems, processes and people;
- *Integrity* of our staff who operate in a simple, clear, transparent and honest manner;
- *Planning* to ensure continuity of service, innovation, sustainability and financial responsibility; and
- *Teamwork* to foster trust, commitment, enthusiasm and innovation.

We're proud of the work we do and our ongoing contribution to the environment and the economy of the great State of Texas. Thank you for your continued support.

Sincerely,

**Ricky Clifton**
General Manager

# Bayport Industrial Wastewater Treatment Facility

The year 2012 was one of transition for Bayport, as we experienced several significant personnel changes, including a new facility manager, maintenance supervisor, compliance coordinator and process engineer.

Bayport is GCA's largest facility and has the most diverse wastewater stream, serving more than 60 industrial customers and two municipalities via a BioSan pipeline. Our customers include petrochemical plants, warehouses, transportation cleaning stations and two communities. After treatment, disinfection and removal of solids, the treated water is discharged into the Bayport Ship Channel and dewatered solids are shipped to a municipal landfill.

Safety, reliability, continuous improvement and customer satisfaction are all part of the GCA culture, reflective of the important environmental charge we have of protecting the waters of the State of Texas.

In 2012, we completed an evaluation of the plant cooling system, continued to improve troubleshooting procedures and conducted infrastructure upgrades designed to enhance plant reliability. We also participated in a GCA-wide safety program that achieved a 10 percent reduction in vehicle incidents. And our wastewater compliance earned Bayport a Silver Peak Performance Award from the National Association of Clean Water Agencies (NACWA).

Business was steady through much of 2012, but in the fourth quarter we began to see increased interest among current and potential industrial customers in utilizing our facility.

Our facility is an active participant in the Bay Area Community Advisory Panel and the Economic Alliance Business Development Task Force.

"I particularly enjoy managing the Bayport facility because we have the most diverse wastewater stream in the entire GCA system, with more than 60 industrial and two municipal customers. It's a pleasure working with our experienced, talented and committed staff, who are up to any challenge."

—Scott Harris, *Bayport Facility Manager*

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|---|---|
| **Location:** | Bayport Industrial District, Pasadena, Texas |
| **Process:** | Activated sludge with both conventional aeration and pure oxygen infusion |
| **Treatment Capacity:** | 30 million gallons/day |
| **Avg. Vol. Treated:** | 18 million gallons/day |
| **Staff:** | 33 |

# Blackhawk Regional Wastewater Treatment Facility

GCA's Blackhawk Facility provides municipal sewage treatment for the City of Friendswood, Harris County Municipal Utility District (MUD) 55, Baybrook MUD 1, and parts of League City and the City of Houston. Our personnel also operate a small wastewater treatment plant near the City of Baytown for the Cedar Bayou Park Utility District and two small wastewater treatment plants serving offices and warehouses at the Port of Houston.

To ensure reliability and stay abreast of evolving compliance regulations, GCA proactively manages maintenance and equipment upgrades at all our facilities. Last year, we began a rehab project at the Blackhawk Facility, replacing three pumps that feed the dewatering belt presses, which prepare solids removed from the treated water stream for landfill disposal.

The project continues in 2013 with upgrades to our ultraviolet (UV) light disinfection system and backwash sand filters. We also plan to replace the headworks, where wastewater enters the plant for treatment, and three additional biosolids pumps with two more energy-efficient pumps and motors. On the agenda as well is improvement of our aeration system.

"As part of our community outreach activities, we conduct tours of our facility on a regular basis for government officials, students, civic clubs and other organizations. Our visitors are always amazed at the absence of odors at a municipal wastewater treatment plant. I tell them, 'that's the way it should be and one of the reasons we are so committed to regular maintenance and equipment upgrades."

—Jerald Landis, *Blackhawk Facility Manager*

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| **Location:** | Friendswood, Texas |
| **Process:** | Activated sludge with atmospheric aeration |
| **Treatment Capacity:** | 9.25 million gallons/day |
| **Avg. Vol. Treated:** | 4.5-5 million gallons/day |
| **Staff:** | 6 |

# Washburn Tunnel Wastewater Treatment Facility & Vince Bayou Receiving Station

Washburn Tunnel (WT), GCA's first wastewater treatment facility, was purchased in 1973 from Champion Paper Company, upgraded and brought back on line to serve customers along the Houston Ship Channel. The facility demonstrated the viability of regional wastewater treatment, paving the way for subsequent GCA operations.

We manage and operate the nearby Vince Bayou Receiving Station, which takes in wastewater transported by truck from various non-hazardous wastewater sources in and around the City of Houston. The wastewater is screened for acceptability before being transported to Washburn Tunnel for treatment.

Washburn Tunnel treats a diverse and complex wastewater stream, serving refineries, petrochemical plants and bulk storage facilities on the industrial side, as well as municipal wastewater from the City of Pasadena and volumes from Vince Bayou. Wastewater with high organic content undergoes a two-step activated sludge treatment process involving both oxygenation and aeration. Low-strength streams are mixed in at the aeration stage and the combined treated stream is then run through secondary clarifiers to remove additional solids before the effluent is discharged into the Ship Channel.

During 2012, we completed a number of upgrades and repairs to our solids handling equipment, gear boxes and various water transfer pumping systems. For 2013, we are upgrading the facility's chemical storage area, disinfection and clarification systems and have completed engineering and design plans for a new, state-of-the-art control room building.

Washburn Tunnel also saw a changing of the guard as longtime GCA employee Jack Wahlstrom retired after 39 years of service, most recently as WT Facility Manager. "I was delighted to have been hired to fill the vacancy and am extremely grateful to Jack and the entire organization for helping make the transition a smooth one," said Kelly Nidini, current WT Facility Manager.

"Though a relative newcomer to the GCA family, I was very familiar with the Authority, having worked with the Washburn Tunnel staff as a customer and a member of the facility's Industrial Advisory Committee. I cannot say enough about the dedication and work ethic of our employees at every level of the organization."

—Kelly Nidini, *Washburn Tunnel Facility Manager*

In addition to facility improvements, our goals for 2013 include zero environmental, health and safety incidents, implementation of GCA's cross-functional safety auditing program and implementation of Washburn Tunnel's Goals and Initiatives Plan, which focuses on Environment, Health & Safety (EH&S), community outreach, operations, reliability, personnel, cost effectiveness and business development. As always, we will be active participants in the Pasadena Outreach Group, which meets monthly to address community concerns and issues affecting the area.

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| **Location:** | Pasadena, Texas, on the Houston Ship Channel |
| **Process:** | Activated Sludge with atmospheric aeration and pure oxygen infusion |
| **Avg. Vol. Treated:** | 12-15 million gallons/day (Washburn Tunnel)<br>1.4 million gallons/month (Vince Bayou) |
| **Staff:** | 29 (Washburn Tunnel)<br>2 (Vince Bayou) |

GCA

# 40-Acre Industrial Wastewater Treatment Facility & Campbell Bayou Solid Waste Management Facility

GCA's 40-Acre Facility has provided regional wastewater treatment services since 1974. Its name was derived from the size of mitigation wetlands created at the time of the facility's construction. Today, we serve two chemical plants and a marine terminal operation, in addition to treating storm water and carriage water from our nearby Campbell Bayou Solid Waste Management Facility.

Wastewater is transported by pipeline to the 40-Acre Facility where it is treated with oxygenated sludge, a slurry of microorganisms that consume pollutants. The treated stream is then polished in a series of retention ponds where solids settle out before being discharged into the Hurricane Canal, which is connected to the Texas City ship turning basin.

Jointly managed by 40-Acre personnel, Campbell Bayou is a landfill that currently receives non-hazardous industrial solid waste from two local chemical plants. Campbell Bayou occupies a strategic position as a grandfathered facility since landfills are no longer permitted within 75 miles of coastal areas.

In 2012 at 40-Acre, a cable safety system was installed for use in cleaning clarifiers, a polishing basin isolation valve was replaced and an inspection was conducted on Clarifier 402 that found only minimal wear after five years of service. At Campbell Bayou, a leachate tank was refurbished which collects water that has percolated through the landfill and is sent for treatment at the 40-Acre plant. We also implemented three new safety programs at both facilities. This year's 40-Acre facility improvements include stabilizing the oxygen-activated sludge north bank, rebuilding one of our north roads and adding safety bollards (posts) to slow and direct vehicles as part of our safety goal of eliminating vehicle accidents.

We continued our community outreach program working with Scenic Galveston, participating in community advisory council meetings in Texas City, and coordinating the annual River, Lakes, Bays 'N Bayous Trash Bash® at the Virginia Point cleanup site.

"I am so proud of the work we perform at GCA protecting our beautiful coastal environment. The success of our efforts may be seen in the bird watchers who regularly visit our facilities to see the wildlife. Our processes may appear industrial in nature, but our product is clean, treated water."

—Terri Strachan, *40-Acre/Campbell Bayou Facility Manager*

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|---|---|
| **Location:** | Texas City Area |
| **40-Acre Process:** | Oxygen-activated sludge |
| **40-Acre Treatment Capacity:** | 15.7 million gallons per day |
| **Avg. Vol. Treated:** | 5-6 million gallons per day |
| **Campbell Bayou Vol. Received:** | 2,370 tons |
| **Staff:** | 13 |

# Odessa South Industrial Wastewater Treatment Facility

GCA has operated the Odessa South Industrial Wastewater Treatment Facility since 1997. The City of Odessa asked the Authority to step in because economic growth was being constrained by environmental regulations that prohibited the combination of municipal and industrial wastewater without pretreatment. Under our charter, GCA is permitted to do exactly that; we rebuilt and upgraded the city's old municipal plant to provide a regional solution to the industrial, commercial, and municipal customers we serve today.

Via pipeline, our facility receives industrial wastewater streams from electric generating companies, a chemical manufacturing plant and other area industries, and flows from the City of Odessa. Wastewater from municipal septic systems and portable toilets is trucked to our facility, along with suitable non-hazardous industrial wastewater. All the material is treated using the activated sludge process with atmospheric aeration. Our facility saw increases in municipal volumes from the City of Odessa last year as well as in the volume of trucked-in wastewater.

GCA is committed to strict adherence to both the spirit and the letter of regulations governing our operations. We're all proud of the fact that Odessa South has operated for a decade without any compliance violations. Our experienced operating staff and regular maintenance and facility upgrades have a lot to do with that enviable record.

Last year, we refurbished the facility's clarifiers, holding tanks and valves in anticipation of recycling treated water for use in hydraulic fracturing operations. Fracking is an enhanced petroleum recovery technique that has helped significantly expand the nation's oil and gas resource base in recent years. Reuse of effluent from wastewater treatment facilities will help promote conservation during the current drought and into the future. We have received the necessary approvals to move ahead with supplying 2 million gallons per day to an energy company for use in that company's fracking operations.to do the same. Goals for the current year include continued improvements in plant operations, and employee teamwork as well as continued community outreach through organizations such as our Local Emergency Planning Committee, the Odessa Chamber of Commerce and the Permian Basin Restaurant Association."

"Our facility is a prime example of how GCA can help communities throughout Texas promote growth and a cleaner environment through regional wastewater treatment. The frac water re-use project illustrates how we try to think outside the box when it comes to such important economic development."

—Charles Harris, *Odessa South Facility Manager*

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| **Location:** | Odessa, Texas |
| **Process:** | Activated sludge with atmospheric aeration |
| **Treatment Capacity:** | 7 million gallons/day |
| **Avg. Vol. Treated:** | 2.8 million gallons/day |
| **Staff:** | 10 |

# Central Laboratory

GCA's Central Laboratory plays a key role in ensuring, through various lab analysis methods, that incoming wastewater streams may be treated effectively—without damaging our facilities' pollutant-consuming microorganisms. The Lab also performs analysis used for regulatory reporting. We also perform testing for a number of external municipal and industrial organizations. The Central Lab is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and the Texas Commission on Environmental Quality (TCEQ).

We employ the latest technology in our testing regime: Spectrometry; mass spectrometry; electron capture detection; flame ionization; atomic absorption; and inductively coupling plasma. Many of these processes are automated. The new Laboratory Information Management System (LIMS) we installed last year is being implemented throughout GCA and is working well. It provides GCA's facilities with quick Internet access to test results and provides automated quality assurance for sample analysis.

We completed construction of new laboratory facilities in November 2012 after a full two years of working in cramped quarters. Among our accomplishments last year were halving instrument time required to conduct ammonia analysis to two hours from four hours, improving our ion chromatography test efficiency to enable us to perform seven different analyses on a single sample, and switching from helium cylinder tanks to gas generators for our electron capture chromatograph.

This year, our goals include attaining NELAC accreditation for all permit renewal parameters, completing implementation of our new laboratory information management system throughout the Authority, switching all gas chromatographs to gas generators and purchasing two new hydrogen generators. Advantages of switching from cylinder gas to generators include reduced need for storage space and significant cost savings over time.

"In the Central Laboratory as everywhere in GCA, we pride ourselves on striving for continuous improvement, cost-effectiveness, satisfying our customers and doing the very best job we can without compromising on safety, regulatory requirements and workplace satisfaction among our employees."

—Diane Maloy, *Central Laboratory Manager*

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|---|---|
| **Location:** | Bayport Industrial District, Pasadena, Texas (on-site at GCA's Bayport Facility) |
| **Operation:** | Full-service NELAP-accredited testing laboratory |
| **Avg. Vol.:** | 400 samples/day |
| **Staff:** | 27 |

# Community Outreach

GCA's commitment to community and the environment extends far beyond the business of wastewater treatment. Our people provide facility tours for schools, civic groups, American and foreign dignitaries, service clubs and government officials; participate in customer and community advisory and economic development organizations; are members of environmental and governmental associations and boards; and sponsor educational eventssuch as the Texas Envirothon, an extra-curricular environmental and natural resource education program and competition designed for high school students.

Our most visible outreach effort is our support of the largest lake and river clean up in the state – the annual River, Lakes, Bays 'N Bayous Trash Bash® (Trash Bash). Trash Bash is held the end of March every year in the greater Houston-area and is organized by the Texas Conservation Fund. The Houston –Galveston Area Council is the regional coordinator for the event.

GCA has been involved in Trash Bash for more than 20 years, since the event started, and is a Platinum Sponsor. Along with thousands of area residents, our employees volunteer for Trash Bash year in and year out. In addition to willing volunteers, we provide management and logistical support for Trash Bash.

In 2012, we helped clean up 176 miles of shoreline along rivers, lakes, bays and bayous at 17 sites in the Houston Metropolitan Area—from Lake Conroe all the way down to Galveston Bay in Texas City—removing 61,452 pounds of trash.That's nearly 31 tons of debris. The trash collected runs the gamut, from paper and plastic to enough vehicle tires to equip thousands of cars.

GCA sponsors and manages two Trash Bash clean-up sites: Virginia Point, located along Interstate 45, between Bayou Vista and the Tiki Island turnoff; and Sims Bayou, encompassing Glenbrook, Reveille and Sim Woods parks just inside Houston's southern boundary.

***"GCA's participation in Trash Bash demonstrates our commitment to a cleaner, healthier environment and helps make the public we serve more aware of our presence."***

—**Lori Traweek,** ***GCA Manager of Operations***
***President, Texas Conservation Fund***

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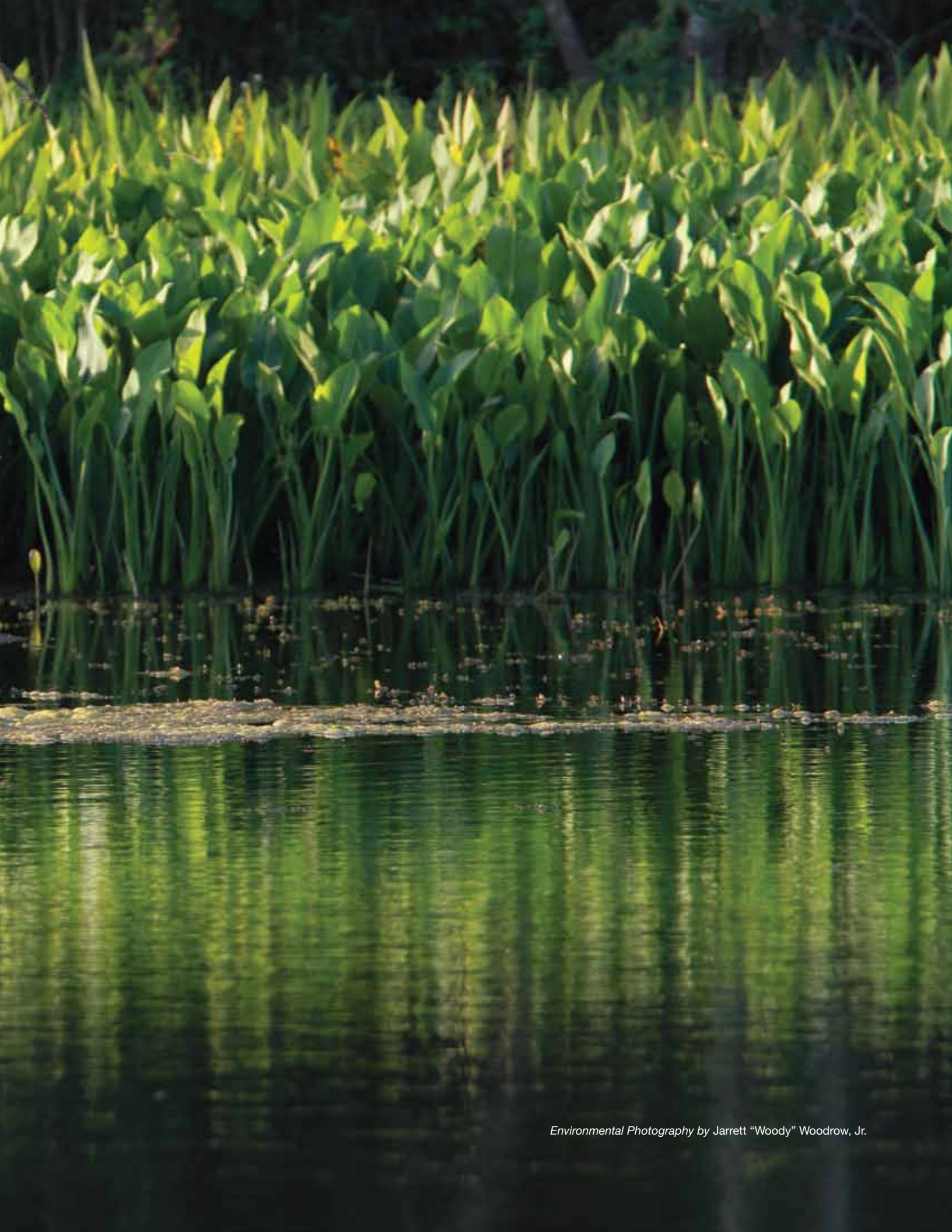
# Senior Managers

Ricky Clifton
General Manager

Lori Traweek
Manager of Operations

Jim Cooksey
Financial Services Manager

Gordon Pederson
Manager of Facility Services



*Environmental Photography by* Jarrett "Woody" Woodrow, Jr.

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Protecting the waters of the State of Texas through environmentally sound and economically feasible regional waste management practices