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WEF HIGHLIGHTS

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News for Members of the Water Environment Federation

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# Pilot Utilities Find Guidance in Water Is Life, and Infrastructure Makes It Happen™

*Water Is Life, and Infrastructure Makes It Happen™ is a public education program that aims to inform elected officials, the media, and the general public about the growing need to update America's water and wastewater infrastructure.*

*Following are case studies profiling two wastewater treatment systems that have implemented Water Is Life, and Infrastructure Makes It Happen.*

## City of Tulsa (Okla.)

Clayton Edwards, deputy director of environmental operations for the City of Tulsa, believes water quality professionals are facing a tough challenge.

"People rely on us for dependable water and wastewater services but don't really think about how it's done," Edwards said. "Nowadays with additional expenses and challenges, it's more critical that the public understand what we're facing and get a better understanding of what we have to do to provide these services."

Tulsa's wastewater system dates back to the 1950s, and much of its water system is from the 1920s. Facing increased operating costs, aging infrastructure, and stringent regulations, the wastewater utility also has been hit with consent orders to address sanitary sewer overflows.

"After 20 years and about $500 million just to address consent orders, our wastewater treatment plants have suffered," said Edwards. "In the next 5 years we have a number of projects planned for repairs and equipment replacement, but will need to increase rates to help with costs."

Although the average increase would amount to approximately 13 cents per day, the proposed 9% increase for wastewater and 7% increase for water faced strong opposition from the city council.

"Within a week or so after the announcement of the budget, a number of council members came out against any rate increases," said Edwards. "We had to quickly educate council members on the issue and were fortunate that the Water Is Life,

*A manhole in need of rehabilitation: This photo of a deteriorating manhole shows missing grout between bricks. Photo provided by Pima County Wastewater Management (Tucson, Ariz.).*

*continued on page 4*

Water Environment Federation®
Preserving & Enhancing the Global Water Environment

# WEFTEC®.06 Is Around the Corner

Following are key deadlines and tips to keep in mind as WEFTEC®.06 (Oct. 21–25) approaches:

- Super Saver Deadline: Sept. 15
- Housing Deadline: Sept. 22
- Cancellation/last day to pre-register in order to get badge in mail/substitution deadline: Sept. 29
- Attendees and exhibitors can register online up to and during the conference dates, and pick-up badge up onsite.
- WEFTEC.06 offers 25 workshops, 94 tech sessions, 8 tours, and a special session on EDCs and CECs.
- More than 900 exhibitors will be at WEFTEC.06 showcasing the latest products, services, & technology
- Please note: WEFTEC has streamlined its system to improve service for attendees. Instead of presenting a coupon to receive the proceedings on CD-ROM, attendees will now have their badge scanned at the proceedings counter in the WEFTEC bookstore. Also, in the past attendees were required to use the same badge scanner upon entering and exiting the exhibit hall in order to receive Professional Development Hours (PDHs) for being in the Exhibit. This no longer applies. Attendees may use any badge scanner upon entering and exiting the exhibit hall to receive PDHs.

# WEF Publications Booth

***Open During Exhibit Hall Hours***
***Dallas Convention Center, Hall C, Booth 3930***

*WE&T*, "The Official Publication of WEFTEC" is now online. Visit the WEF Publications Booth to experience the new Web site, www.wef.org/magazine. You'll also have the opportunity to meet the WEF Editorial Staff and receive complimentary editions of WEF's renowned periodicals and newsletters. Plus, the WEF Publications Booth is hosting the WEFTEC.06 Exhibit Hall Scavenger Hunt. Participants will have a chance to win an iPod nano!

OSCAR EINZIG

*The WEFTEC® exhibit floor draws people by the thousands with its interactive demonstrations and detailed displays.*

# WEFTEC®.06 Exhibit Hall Scavenger Hunt

***Put Your Exhibition Savvy to the Test***

Find the clues on the exhibit floor in Dallas and you could win an iPod nano. For more details, see the September issue of *WE&T* or visit the WEF Publications Booth (#3930, Hall C) at WEFTEC®.06 in Dallas.

WEF HIGHLIGHTS

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*Preserving & Enhancing the Global Water Environment*

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# World Water Monitoring Day Moves to the Water Environment Federation

The Water Environment Federation (WEF; Alexandria, Va.) adopted World Water Monitoring Day™, an international outreach program that builds public awareness and involvement in protecting water resources around the world. Held annually Sept. 13–Oct. 18, the program engages communities in monitoring the condition of local rivers, streams, estuaries, and other water bodies.

"As an international water quality organization, part of WEF's mission is to educate the public about the importance of protecting our water resources," said WEF Executive Director Bill Bertera. "This unique and exciting program not only allows us to broaden our reach and scope but is a wonderful complement to the Federation's current public education programs."

The international program was created in 2003 to introduce the importance of water monitoring, encourage a connection between communities and their watersheds, and expand the base of information about the health of individual watersheds over time. An easy-to-use test kit allows everyone from children to adults to sample local water bodies for a core set of water quality parameters including temperature, acidity (pH), clarity (turbidity), and dissolved oxygen (DO). Field results are then put into an international database and summarized on the program's Web site.

The kit ($13 plus shipping and handling within the United States; international costs may vary) contains a step-by-step instruction booklet, one set of hardware (collection jar, pH test tube, DO vial, Secchi Disk decal, and a thermometer), pH and dissolved oxygen reagent tablets for 50 tests, and a material safety data sheet.

Originally a national event, the program was founded in 2002 by Robbi Savage, executive director of America's Clean Water Foundation, in celebration of the U.S. Environmental Protection Agency's Year of Clean Water. October 18 was selected as World Water Monitoring Day in recognition of the U.S. Clean Water Act — a milestone in efforts to restore and protect U.S. water resources — enacted by Congress in 1972. To expand its reach, World Water Monitoring Day became an international program the following year.

*"This unique and exciting program not only allows us to broaden our reach and scope but is a wonderful complement to the Federation's current public education programs."*

*— Bill Bertera*
*WEF Executive Director*

"We see this as a tremendous opportunity for WEF," said WEF President J. Michael Read. "The Federation embraces this program wholeheartedly and we look forward to growing it in years to come."

Registration is open for the 2006 monitoring period. WEF and its primary international partner, the International Water Association (London), are inviting citizens and organizations from around the globe to share in this unique experience of water quality monitoring. A special launch event is expected to be held in Washington, D.C. later this year.

For more information and to register, visit www.worldwatermonitoringday.com.

# WEF Webcast To Address Compounds of Emerging Concern

The Water Environment Federation (WEF; Alexandria, Va.) WEF® Distance Learning Webcast Series presents Compounds of Emerging Concern — Present State of Knowledge & Future Challenges on Oct. 4. Listen to industry experts speak on compounds of emerging concern (CECs) through your telephone and view the presentation via the web on your computer.

The webcast will run from 1 to 3 p.m. Eastern Standard Time.

Speakers include Mark LaGuardia of the Virginia Institute of Marine Science, College of William & Mary (Williamsburg, Va.); Linda Macpherson of CH2M Hill (Englewood, Colo.); Octavia Conerly of the U.S. Environmental Protection Agency; and Jay Witherspoon of CH2M Hill, chair of the WEF CEC (Compounds of Emerging Concern) Community of Practice and chair of the WEFTEC®.06 session, Compounds of Emerging Concern. The moderator is Sam Jeyanayagam of Malcolm Pirnie, Inc. (White Plains, N.Y.).

The registration deadline is Sept. 27. The cost is $155 for WEF members, and $195 for nonmembers. For complete details and to register online, go to "Conferences & Training" at www.wef.org. Call WEF Member Services for more information at (800) 666-0206, or e-mail conferences@wef.org.

and Infrastructure Makes It Happen program materials came out just as we were getting ready to start our efforts."

Boosted by the support of program materials, the council later approved the budget which included the proposed increases.

### Pima County Wastewater Management (Tucson, Ariz.)

Pima County Wastewater Management (PCWM) manages more than 3400 linear miles of conveyance systems and is responsible for providing wastewater services for the entire Tucson Basin (Ariz.). The system, which dates back to 1900, has grown along with the population, but now needs significant upgrades to meet today's regulatory requirements and tomorrow's sustainability issues. The Tucson community has prided itself on the appeal of low water and wastewater rates to attract business and new residents, but PCWM is facing its biggest challenge yet: getting government and community buy-in of rate increases to generate the needed $1.2 billion over the next 20 years.

> *"Rates have to be increased to do the things we need to do."*
>
> *— John D. Warner, manager of the Wastewater Management-Field Operations Division for Pima County (Tucson, Ariz.).*

"Rates have to be increased to do the things we need to do," said John D. Warner, manager of the Wastewater Management–Field Operations Division for Pima County. "We've got to be very innovative in dispersing the cost of reinvestment in our infrastructure. A large part of our success will depend on building partnerships with local officials rather than acting as adversaries across the table."

That's where Water Is Life, and Infrastructure Makes It Happen, is able to offer guidance. Through the program utilities and member associations can use materials and advice from WEF to assist in educating and garnering support from the public, ratepayers, and elected officials regarding the nation's water and wastewater infrastructure.

"The big milestone this year is to go to our state legislature and present the program, explain the importance of it, and the partnering that can come out of it," explained Warner. "Hopefully, the outcome of our efforts will build a stronger alliance and increase public awareness of the issue."

Warner said he also plans to use the WEF program to help defuse public opposition. "Over the past 2 years, the department has done a very good job of explaining and establishing why the rates have to be increased," said Warner. "But as rates continue to grow over the next several years, we'll probably experience more adamant opposition. That's why we need to beef up our local public education efforts with Water Is Life, and Infrastructure Makes It Happen."

Encouraged by the results of the program in their communities, Pima County and the City of Tulsa have stated they will continue to employ Water Is Life, and Infrastructure Makes It Happen with plans for bill stuffers, magazine articles, opinion editorials in community newspapers, press conferences with city officials, and the creation of speakers bureaus.

### Water Is Life at WEFTEC®.06

Both pilot utilities will share first-hand accounts of their experiences at WEFTEC®.06 during the Water Is Life, and Infrastructure Makes It Happen event on Tuesday, Oct. 24 from 8:30 a.m. to 12 p.m. For more information, visit www.weftec.org.

***—Lori Burkhammer***

### All the Tools to Get Started: The Water is Life, and Infrastructure Makes It Happen™ Online Members' Toolkit

Created by the Water Environment Federation (WEF; Alexandria, Va.) with the assistance of a national advisory committee, Water is Life, and Infrastructure Makes It Happen™ provides all the tools necessary to implement a public education program in any community.

The program's Web site, www.waterislife.net, provides an online toolkit full of downloadable press releases, fact sheets, talking points, sample letters to the editor, PowerPoint presentations, frequently asked questions, and other documents that WEF members can download at no charge.

Also available on the site is a full suite of promotional materials for purchase including media folders, bill stuffers, public brochures, buttons, bookmarks, and pens. WEF is completing several public service announcements and display ads for local use, as well a survey template that utilities can use to assess their public education needs and track their progress with the Water is Life, and Infrastructure Makes It Happen program.

The survey allows utility managers to assess the current knowledge level in their communities, explained Linda Kelly, managing director of public communications for WEF.

"It gives them a baseline to see how they're making a difference," Kelly said.

A year later, the utilities administer the survey again after implementing Water Is Life, and Infrastructure Makes It Happen to measure increased awareness, explained Kelly. For more information, e-mail info@waterislife.net.

***—Meghan H. Oliver***

# Maryland Student to Represent U.S. in International Stockholm Junior Water Prize Competition

*Emily Brownlee, U.S. winner of the Stockholm Junior Prize.*

Emily Brownlee of Prince Frederick, Md., was named the U.S. winner of the Stockholm Junior Water Prize (SJWP) — an international competition for water-related research. At press time, the international winner had not yet been announced.

The student's work, "A Tale of Two Oysters," discusses the controversial proposal to introduce an Asian species, *Crassostrea ariakensis*, into the Chesapeake Bay to counteract the decline of the region's native oyster, *Crassostrea virginica*, and examines the effect of algal blooms — long recognized in the Bay and symptomatic of poor water quality — on the growth rates of the native and non-native species. Brownlee's project was selected from a pool of 44 state SJWP winners at the national competition held in Atlanta, June 22–24.

"The degradation of the quantity of native oysters in the Chesapeake Bay has been of considerable concern," explained Charles Sorber, SJWP nominations chair. "Emily's study provides another approach to solving this challenge."

The Calvert High School student (Prince Frederick, Md.) was awarded $3000 and an all-expense-paid trip to Stockholm, where she competed against more than 30 countries for the international honor during World Water Week in August. The school will receive a $1000 grant toward enhancing water science education, and Brownlee will present her research to more than 16,000 water quality professionals at WEFTEC®.06, the annual technical exhibition and conference of the Water Environment Federation (WEF; Alexandria, VA.), this October in Dallas.

WEF and its member associations, with support from ITT Industries (White Plains, N.Y.) and The Coca-Cola Company (Atlanta), organized the three-level (regional, state, national) competition in the United States. ITT Industries is also the international sponsor. The Georgia Association of Water Professionals, with local sponsor Delta Air Lines (Atlanta), and other environmental organizations, hosted this year's national competition.

For more information, visit www.StockholmJuniorWaterPrize.org.


WEFTEC®.06

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Water Environment Federation

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Telephone: +1 703 684-2452

# Dreaming in Color

## *A boy's dream to solve his hometown's water problem comes true*

In the 1940s, as a little boy living in the town of Vizianagaram in southern India's Andhra Pradesh region, I wondered why my aunt had legs like those of an elephant. Often times I heard my relatives and others commenting that it had to do with her karma. It appears as though there were many in Vizianagaram born with similar karma, because they also suffered from the same malady.

It was not until I went to the Maharajah College High School in Vizianagaram, located next to Pedda Cheruvu, a 70 ha (170 ac) manmade lake, that I learned from my science teacher that the source of that "karma" were the mosquitoes that bred in the lake.

Culex mosquitoes transmit a parasite known as *Wucheraria bancrofti*, which causes elephantitis or filariasis in humans. Pedda Cheruvu has gained notoriety as the breeding waterbody for these mosquitoes and for the foul odors that emanate from it during summer. We used to get "bad weather holidays" from school because of the unbearable smell. And although we had beautiful sunsets, they often were masked by huge swarms of mosquitoes flying out of their nests in Pedda Cheruvu.

The elephant legs, the stench, and the enteric diseases endemic to Vizianagaram have been a constant concern to me. It has been one of my dreams since childhood to find out if something could be done to improve public health in Vizianagaram by improving the conditions of Pedda Cheruvu.

### Dreaming Continues

At the age of 19 I had a master's degree in biochemistry and a dream to change the environment of Vizianagaram. A job offer from Professor Frederick Erickson of the All India Institute of Hygiene and Public Health (Calcutta) led me to a research position to work on rural sanitation problems of West Bengal. Erickson told me how I could change the environment in India and eradicate waterborne diseases by learning the fundamentals of environmental science and engineering. Although I was unaware as to what environmental science and engineering entailed, Erickson's inspiration, my dream about relieving the grotesque ele-

*continued on page 7*

# Upcoming WEF Pretreatment and FOG Workshops

**Pretreatment**: ***Sept. 26–29, 2006; Hilton Houston Westchase; Houston***

Since 1997, the Water Environment Federation (WEF; Alexandria, Va.) and the U.S. Environmental Protection Agency have offered a series of training courses related to pretreatment program implementation. The current courses are a continuation and update of this series.

The Introduction course is designed and recommended for environmental professionals responsible for developing and implementing the pretreatment program at the local level, industrial dischargers, consultants, and especially individuals with less than 2 years in a pretreatment program.

The Intermediate course provides the framework for collecting, managing, and applying the information necessary to develop and issue individual control mechanisms (permits) to industrial dischargers. The course includes extensive discussion of the process for reviewing industrial information to determine appropriate categorization of the industry and subsequent effluent limit derivation.

The Advanced course is designed and recommended for environmental professionals responsible for developing and implementing the pretreatment program at the local level, industrial dischargers, and consultants.

Please choose the course that best suits your needs and experience. It is essential that each participant bring a calculator to these courses.

### Management of Fats, Oils, and Grease (FOG): *Sept. 12–13; Chicago City Centre – Holiday Inn; Chicago*

WEF, in partnership with EPA, has developed a Fats, Oils, and Grease (FOG) Management Training Course and has been conducting workshops at various locations across the country. Utilizing the knowledge of experts already involved in the management of fats, oils, and grease, this course presents implementation details for a variety of control options for fats, oils, and grease.The purpose of the training course is to present a well-developed approach that can be used by utilities to design and implement their own site-specific FOG management programs for preventing or eliminating the entry of FOG into the collection system. Topics include Operation & Maintenance Issues, Enforcement, and Effective Inspection Training.

***Course instructors:***

- Jack Dickinson, *City of San Jose, Calif.*
- Roy Herwig, *Brown and Caldwell (Walnut Creek, Calif.)*
- Leon Holt, *Town of Cary, N.C.*
- John Parnell, *Pretreatment Solutions Inc. (Safety Harbor, Fla.)*
- John Shaffer, *Environmental Engineering and Contracting Inc. (Santa Ana, Calif.)*

For more information, contact Lara Hughes at lhughes@wef.org or (703) 684-2442.

phantiasis and endemic waterborne disease prevalent in Vizianagaram, and my fascination of rural West Bengal (based on the writings of Indian author Sarat Chandra Chatterjee) made me accept the job.

During the next 7 years working in villages in India on their sanitation and water supply problems I gained a grasp of the problems associated with water and air pollution.

It is clear in my mind how simple the Pedda Cheruvu problem is, and yet how complex it is to resolve it. The solution is complex and difficult not because of the lack of an affordable and appropriate technological solution, but because of the recalcitrance and apathy of the municipality and the community's administrators.

Although Vizianagaram eruditely sings of its cultural, educational, and artistic past, it is paradoxical that the community's lack of resolve to improve water and air conditions further exacerbates the underdeveloped state of this otherwise culturally advanced town.

I earned my doctoral degree from Rutgers University (Newbrunswick, N.J.) in 1966, and from that point my dream continued with much more clarity. I continued to make strides in the field of environmental science and engineering by teaching and conducting research at universities such as Cornell University (Ithaca, N.Y.) and the Illinois Institute of Technology (Chicago); consulting with international agencies such as the United Nations, U. S. Agency for International Development, World Bank, and the National Academy of Sciences; and directing the Environmental Monitoring and Research Division of the Metropolitan Water Reclamation District of Greater Chicago.

### Sustaining the Dream

After much persuasion over many years, I was able to convince my mother to leave Vizianagaram and come to live with her only son and his family in Chicago. Although she arrived in 1979 to live with us, she returned to India the same year because of her continued poor health and her utmost dislike for the cold weather of Chicago. I promised her that I would visit her in Vizianagaram annually. These annual pilgrimages gave me many opportunities to witness the progressive deterioration of Pedda Cheruvu.

*Although Vizianagaram eruditely sings of its cultural, educational, and artistic past, it is paradoxical that the community's lack of resolve to improve water and air conditions further exacerbates the underdeveloped state of this otherwise culturally advanced town.*

During these visits to India, I met with people at the Rotary Club, Chamber of Commerce, Lions Club, and local colleges — whoever was willing to listen and invited me to talk about how one could go about mediating the pollution of Pedda Cheruvu. During meetings with local community members, what pained me most were the discouraging comments and unsolicited suggestions by some that I should not waste either my time or money on the lake.

The assumption was that it would be next to impossible to move the district and municipal administration to do anything with regard to purifying the water in Pedda Cheruvu. Such adverse and discouraging comments challenged me and gave me even more of an impetus to tighten my resolve. Although I received some positive responses from an official or two at the Vizianagaram administration, it was difficult to validate their gestures because most of the administrative personnel came and went like autumn clouds due to unpredictable movements and transfers.

Nevertheless, my dream continued. Many times, in my mind's eye, I even saw the Pedda Cheruvu in glowing color with snow-white swans nimbly making ripples by paddling in the clear and placid water with their webbed yellow feet, and tourists peddling their colorful boats. What a great feeling it was!

### Visualizing the Dream

There is some truth to the old adage, "persistence pays off." It was in February 2003 when the U.S. Asia Environmental Partnership (USAEP) invited me to participate in a workshop on decentralized wastewater treatment systems conducted in the four major cities of India. During this sojourn I took the opportunity to meet the very dynamic and mission-oriented District Collector of Vizianagaram, Dr. Rajat Kumar.

I categorically asked Kumar whether he would do something to mediate the pollution of Pedda Cheruvu, or would he leave Vizianagaram like his predecessors — without making a significant impact. I told him he would leave an indelible impression were he to solve the pollution problem of Pedda Cheruvu, eliminate the mosquito and odor nuisance, and beautify the area. He readily endorsed my suggestion, and commented that it was unfortunate that the "eyesore" of the lake was never given any attention.

When I met with Kumar, it had been more than a century since the lake was first designed, supposedly, by a French architect. The lake was commissioned by the then maharaja of Vizianagaram as a multipurpose waterbody for recreational use, irrigation,

*continued on page 8*

and for the maintenance of watertables of the wells in its vicinity. But an increase in population led to about 1 million gal. of wastewater per day, from about 45,000 people, to continuously pollute the lake.

During this visit, the USAEP and the U.S. Trade Development Authority were in the process of sponsoring an orientation visit of a delegation of senior Indian Administrative Service officials to the United States to see water conservation and reuse projects in the arid states. Dr. Rajat Kumar was included in this delegation based on my recommendation. Due to his mechanical engineering background, high level of motivation, and quick grasp of technical matters, he gained a good understanding of the issues related to water management and wastewater treatment during his visit.

His trip included 5 days in Chicago, where we discussed what could be done to improve the environment of Vizianagaram. He promised me that he would readily undertake the mission of cleaning the Pedda Cheruvu and beautifying its surroundings if I gave him the technical guidance, designs, and an operational and maintenance manual for an appropriate treatment system that I could recommend. I was convinced of his commitment and zeal when he declined financial assistance from any source after I suggested we obtain funding from the U.S. government. He believed that such efforts would only delay the execution of our commitment, and our common dream might not be realized.

## Realizing the Dream

On the shelves of the Visakha Urban Development Authority, there were plans to divert the sewage flow to the Pedda Cheruvu to another area and treat it in a highly mechanized sewage treatment plant. I was able to convince this organization and the Vizianagaram administration that this plan was extremely expensive and inappropriate because of its complexity. I indicated that the project could be completed perhaps at one-third the cost by building a more appropriate and effective waste stabilization pond system, which operates on natural forces independent of electric power, which is not dependable in Vizianagaram. Also, Vizianagaram lacks the technically competent and trained operators to maintain such a complex treatment system.

In order to keep the promise made to the District Collector, and to realize my dream, I designed the treatment system, got the drawings prepared, and received the approval of the technical advisory committee appointed by the Vizianagaram administration, all in about 3 months.

The design consists of screening and grit chambers upstream of the Pedda Cheruvu to remove coarse objects — sticks and rags and inert material like sand — from the wastewater discharged via a large drain into the Pedda Cheruvu. Next, an interceptor sewer was designed to connect all the outlets discharging wastewater into the Pedda Cheruvu and transport it by gravity into a waste stabilization pond system, which consists of a series of four ponds (a facultative pond, a high-rate algal pond, an algae settling pond, and a maturation pond) in two parallel trains. The pond system was designed to be built as part of the Pedda Cheruvu, taking up about 9% of the lake. The stabilized biosolids deposited at the bottom of the first pond of each treatment train can be harvested every 10 years and used as an excellent fertilizer and soil conditioner.

Although the monsoon of 2003 slowed/hindered the construction of the pond system, Kumar kept pressure on the contractors to complete its construction at somewhat less than the estimated cost of U.S. $500,000. The previously proposed highly-mechanized designs would have cost roughly three times as much.

The treatment system was commissioned in mid-April 2004, and has been producing a clean effluent, which is recycled back into the Pedda Cheruvu.

## Epilogue

It is generally believed that to follow a worthwhile idea with passion and persistence will lead to its fruition. This has indeed proven to be true in the case of the construction of a wastewater treatment system in Vizianagaram. As long as this system is maintained and operated properly by the municipal administration, it should yield an effluent that meets the irrigation water quality standards; eliminates odors, mosquitoes, and pathogens; and provides an esthetically pleasing environment for recreational activities in and around this precious waterbody.

As an optimist, I hope that the municipal administration of Vizianagaram will properly maintain and operate the system, and that the occurrence of elephantiasis, such as my aunt had, and other waterborne diseases will be eradicated.

---

*Prakasam Tata, Ph.D., QEP, retired in 2002. In 1974 he joined the Research and Development Department of the Metropolitan Water Reclamation District of Greater Chicago. He was part of the faculty at Cornell University where he worked 1966–1974 on water quality and animal waste management problems. He published several papers and reports and coauthored four books.*

*This article was originally published in American Telugu Association Souvenier 2004. Re-published and edited with the permission of author.*

**What's Your Story?**

Members who would like to submit essays based on their personal experiences in the water and wastewater fields may e-mail them to moliver@wef.org.