EXECUTIVE SUMMARY

The Tampa Bay Water-Azurix Team delivers superior quality water using proven, innovative technology by 2002. The Azurix Team exceeds the experience and capability requirements necessary to design, build and operate the Surface Water Treatment Plant Component of the Tampa Bay Water Master Water Plan. Each of your objectives is addressed in this response and positions the Team to turn on the tap in 2002.

DELIVERING WATER AT AN ACCEPTABLE COST

The Tampa Bay Water-Azurix Team will deliver superior quality water at a lower than expected cost. The Surface Water Treatment Plant will be delivered on time within budget by a nationally recognized team of experts. (ENR Breakout) Initial cost estimates for the preliminary design result in a water cost of approximately ??? cents per gallon. The City of Tampa has offered to supply water at a cost of ??? cents per gallon. The Azurix Team's Alternative Proposal will provide superior quality water at a cost of ??? per gallon.

FROM DAVE DEMME/ED COPELAND

DELIVERING SUPERIOR QUALITY WATER

A recent EPA audit found concerns with the quality of America's water supply. Accurate data and real-time reporting will keep Tampa Bay Water in compliance and above. The Azurix Team proposes to use a membrane treatment process operating in an enhanced coagulation (EC) mode. The proposed ultrafiltration (UF) membrane has been demonstrated as a positive barrier to bacteria, Giardia and Cryptosporidium, and due to its unique design, is capable of operating with the high solids loading resulting from the enhanced coagulation.

Quote/Sidebar from Zenon information supporting UF membrane water quality claims. #log, etc.

The Azurix Team's Alternative Proposal treatment process provides multiple barriers to ensure superior quality water.

QA/QC testing procedures in place to assure data accuracy and treatment monitoring mechanisms

Increased pressure from regulatory agencies creates a need for diligent monitoring of Safe Water Drinking Act (SDWA) regulations. HDR distributes more than 80,000 copies of a Safe Drinking Water Act updates poster through the American Water Works Association. (Appendix ?) HDR also uses its drinking water quality expertise to

Water Quality in the News

A USA Today investigation last October into the EPA study "found 40,000 water systems with violations of testing and purity standards. Of those, 9,500 systems serving 25 million people had violations that the EPA deemed `serious threats to public health.' The new audit suggests that the violations reported in the newspaper might reflect just 12% of what is really occurring; 88% are going unreported." (USA Today, 9/2/99

In response from the AWWA, "While EPAPA data may be flawed, the actual quality of public water remains very high," said AWWA Executive Director Jack Hoffbuhr.

Water Quality Concerns	Multiple Barriers
Total Organic Carbon (TOC) & Color	· Enhanced coagulation (EC) at low pH · Powdered Activated Carbon (PAC)
Taste and Odor	· Enhanced coagulation removes natural organic matter (NOM) · PAC · Extensive aeration membrane tanks
Disinfection	· Ultrafiltration (UF) membranes · Hypochlorite · Chloroamine
Disinfection By-products (DBP)	· EC removes most precursors · UF membranes reduce required disinfectant dosage and reaction time, chloroamine generates fewer DBPs
Turbidity	UF membranes an absolute barrier

author Guidance Documents for the EPA Office of Ground and Drinking Water. These documents assist public water suppliers in understanding and complying with the new Disinfectant/Disinfection Byproduct Rule and Enhanced Surface Water Treatment Rule.

TIMELY DELIVERY THROUGH DESIGN-BUILD-OPERATE PROCUREMENT PROCESS

Providing water to 1.8 million people in three counties and three cities is no small task. The Tampa Bay Water-Azurix All-American Team reinvests valuable resources back into one of America's premier growth communities.

Implementation schedule matrix

The Surface Water Treatment Plant is an essential component of Tampa Bay Water's infrastructure plan and must be completed on time to avoid potential fines levied by the Southwest Florida Water Management District (SWFWMD). Our aggressive project schedule and innovative approach provides a fast-track project implementation schedule. Because there are fewer and simpler structures in our alternative design, your desire for substantial benefits will be met. The project will integrate well with other components of the Tampa Bay Water system.

Azurix's designated Project Director will be completely responsible and have complete authority to carry out all decisions related to project delivery. As the Project Director, Dick Harville will coordinate with the design manager, plant operations manager and construction manager to ensure the project meets the budget and design, construction and operation milestones. He will also be the key liaison between the DBO Team and Tampa Bay Water.

ENVIRONMENTALLY-SOUND APPROACH

Our Team's approach to permitting is to use the letters obtained from the State Department of Community Affairs and Hillsborough County that state the proposed treatment plant is compliant with the zoning conditions and DRI in terms of use. The site design must comply with the County's Land Development Code (LDC). The HDR/Sverdrup team will ensure that permitting happens on-time and in-time to maintain the fast-track design-build-operate schedule, while not short-cutting the process to ensure all environmental considerations are met. The Azurix Team will be in continuous communication with Mike Allgire, the Permit Service Center Manager and his staff in order to anticipate issues or revisions that may be needed to maintain the schedule. Three primary tasks will keep permitting on track:

- Preliminary Site Development Plan
- Site Development Construction Plan (Final Site Plan)
- Natural Resources/Landscaping Permit (LAL Permit)

Ongoing communication, attention to detail, and a thorough understanding of the permitting process by the HDR/Sverdrup joint venture help them anticipate the impact design changes have on the permitting process. The site layout for our Alterntive Proposal has a lower impact or the "level on intensity is less," thereby, construction is less complicated creating fewer permitting concerns. A complete discussion of our Permitting approach in Section 2A Item M yields a comprehensive plan for accomplishing this complex series of tasks. Close communication among the HDR/Sverdrup joint venture project staff members will keep the project on the fast-track for completion in order to turn on the tap in 2002.

AZURIX TEAM QUALIFICATIONS

The proposing team for the Tampa Bay Water Surface Water Treatment Plant is led by Azurix Corp., which will act as the project guarantor and, directly or through a wholly owned subsidiary, as the DBO entity. Azurix will also provide long-term operations and maintenance of the completed facility. The team includes a joint venture consisting of HDR Engineering, Inc. and Sverdrup Civil, Inc.

Each member of the Azurix Team has the capacity to assist the others by providing additional technical resources to support the others' core competencies. In this way, we bring a depth that ensures the successful completion of the Surface Water Treatment Plant project.

Azurix is already a leader in the design-build-operate (DBO) arena with its role in the largest DBO water

treatment plant in the country, Seattle's 120-mgd Tolt Water Treatment Facility. Tampa Bay Water will lead the way in the Southeastern United States as a provider of membrane-treated water. Recent events at a Chinese delegation's visit to your seawater desalination plant highlight the importance of the Azurix Team's leadership in delivering consistent, superior water with our alternative approach. During the visit, David Fischer, St. Petersburg Mayor and Tampa Bay Water Chair remarked, "As we go about our day-to-day business, we don't usually think about the fact that international attention is focused on what we're doing." It's clear that, with your recent achievements, Tampa Bay Water is becoming a model for other nations and "that's something to be proud of." (Tampa Bay Water news release June 1999)

Tampa Bay Water sets an example for visitors from Singapore with the use of

Azurix's presence in the Americas spans from Seattle in the Pacific Northwest (another naturally beautiful area) to the sandy beaches in the resort community of Cancún. The guarantor of this project fully recognizes the vital role that this component of the system plays in the economic development of the Tampa Bay area.

As the project guarantor, Azurix will fully guarantee all obligations of the contracting party under the service agreement for the permitting, design, construction and operation of the Surface Water Treatment Plant.

Azurix's designated Project Director will remain for the duration of the project, be completely responsible and have complete authority to carry out all decisions related to project delivery. As the Project Director, Dick Harville will coordinate with the design manager, plant operations manager and construction manager to ensure the project meets the budget and design, construction and operation milestones. The Project Director will also be the key liaison between the DBO Team and Tampa Bay Water.

By forming a joint venture to design and construct the project, HDR and Sverdrup will take full advantage of the design-build concepts and economies of scale that reduce costs and save valuable time. Once the facility is complete, Azurix will provide the long-term operations, maintenance and management services.

Arriving at a mutually beneficial agreement with the Azurix team allows Tampa Bay Water to deliver superior quality water to your citizens by 2002. Working together for the greater good isn't new to Tampa Bay Water nor is it new to Azurix. We are successfully implementing the largest design-build-operate water treatment plant in the country, currently under construction in Seattle. With the recent addition of Philip Utilities Management Corporation (PUMC) to the Azurix family, we combine operations excellence with utility excellence giving the Team a head start on the aggressive schedule needed to meet the goal of delivering water by 2002.

Our Team understands the water business and utility operations so negotiating the Final Service Agreement with ease gives you peace of mind and lets you continue building toward future goals relating to system-wide projects.

Seattle's Tolt Treatment Facilities - A DBO Success Story

Seattle Public Utilities' (SPU's) highly visible development of its Tolt water treatment facility is a prime example of how taking advantage of a DBO approach can produce significant benefits. Azurix is guarantor and will provide long-term operations of the 80-mgd surface water treatment plant.

The city estimates that the final negotiated price of $101 million for the design, construction and 25 years of operations will save the taxpayers and purveyors $70 million.

The Tolt treatment facility is scheduled to be operational by October 2000. Construction is 50% and on schedule while permitting is 95% complete. The facility operations manager and staff have been selected and are providing valuable input into the construction phase. It is notable that the staff includes SPU operators who opted to join the Tolt facility organization.

UNDERSTANDING OF THE RFP

Tampa Bay Water supplies potable water to 1.8 million people in three cities within three counties. According to the *Tampa Bay Water Master Plan*, various projects will provide a new source of potable drinking water totaling an annual average permitted production capacity of at least 85 million gallons per day (mgd). These new sources are to be developed within strict timing requirements to facilitate the phased reduction

testing recently undertaken in Michigan. No other membrane system currently available offers this simple visual means of confirming membrane integrity due to their membranes being encapsulated within a vessel and not being readily visible to the naked eye.

TIMELY COMPLETION AND DELIVERY

In order to deliver superior quality water by 2002, the Azurix team is committed to an aggressive timetable that ensures compliance with Tampa Bay Water's scheduling requirements. We are confident of our ability to meet this commitment because of our:

- Permitting experience
- History of timely project completion
- Proven DBO experience

The Azurix team has extensive experience in the preparation of various permit applications and securing permits required in Florida for water treatment facilities and other public works projects. We have comprehensive experience working with many of the local permitting agencies and use a proactive approach to the permitting process. We identify all permits that may be required for a project and then immediately begin meeting with the appropriate agencies to gain input about their needs for a complete permit package.

Project	Experience	
Tampa Bay Water's Alafia River Project Water Use Permit	· Permitting · On-time	The permitting agency commented frequently on the importance and benefits of our early coordination efforts and follow-up communications. The agency issued a proposed agency action for issuance of the permit – without changes to the permit recommendations – within four months of submittal of this major surface water withdrawal permit.
Orlando Utilities Commission's Water Project 2000	· Permitting · On-time · DBO	The design-build of the 33-mgd Lake Highland and 17-mgd Kirkman facilities is substantially complete while the design is 65% complete and construction is beginning on the 5-mgd (expandable to 20 mgd) Southeast plant. The Lake Highland facility received the Florida Institute of Consulting Engineers' Grand Award, the highest award given in the state for water or wastewater treatment plants. Lake Highland building and site permits were obtained from the City of Orlando less than one month from application submittal with little or no comments. The two-stage building permit concept (one for site work and another for the building) was not typical for the City and had to be sold at all levels; however, it enabled the site portion of the project to begin four months earlier and keep the overall project on schedule. Water Management District permits and the Florida Department of Environmental Protection (FDEP) permits were also received on schedule with little or no comment.
Seattle Public Utilities' Tolt Water Treatment Facility	· On-time · DBO	The largest DBO project of its kind in North America at the time it began, this project is currently in the construction phase and will result in a 120-mgd filtration plant to provide water to Seattle and its 26 regional wholesale customers.
Cleveland's Crown Water Works	· On- time · DBO	This design-build project included rehabilitation of the existing 50-mgd water treatment plant and expansion to 125 mgd, 18-mgd finished water reservoir and 5-mile interconnect pipeline. Completed in 1998, the effort required that the existing plant remain operational at all times during the rehabilitation and expansion. This is the Cleveland Water Division's first experience with a true program management approach.

LOW COST WATER

Because Zenon's membrane technology can easily be designed using individual membrane trains with capacities of 5 MGD or larger, the number of individual membrane treatment units is minimized which, in turn, minimizes process equipment and thus initial capital and future O&M costs. Less process equipment also results in fewer maintenance requirements and, thus, reduced manpower requirements.

The system is designed for installation within adjacent rectangular concrete membrane tanks that will use common wall construction to reduce costs and minimize plant footprint.

ELIMINATES/OR/SIMPLIFIED SLUDGE REMOVAL MECHANISM - NEED MORE INFO

Finally, because of Azurix's association with Enron, Tampa Bay Water may be able to access support from Enron Capital and Trade on future electrical and/or gas pricing.

HIGH QUALITY WATER

The ZeeWeedä ultrafiltration system is able to achieve a treated water turbidity of < 0.1 NTU regardless of the raw water turbidity. The clarity of the treated water from each individual membrane treatment train is monitored continuously by both a particle counter and a turbidimeter.

The system uses particle counting as a method of ensuring continuous, on-line membrane integrity to ensure at all times that the water pumped to the distribution system meets the applicable treated water quality standards. In tests that were performed at an installation in Ontario, particle count results were significantly lower (better) than that of competitors' membrane systems that were being evaluated at the same time under the same conditions. (FLORIDA TESTS) This method of measuring membrane integrity is efficient, non-destructive to the membrane and, most importantly, is continuous, which allows any problem to be identified and responded to immediately. This, in turn, prevents any potentially contaminated water from being pumped to the reservoir and subsequently into the distribution network. A fully automated pressure decay test (PDT) can also be used to confirm the integrity of the system if high particle counts are indicated by the particle counter.

Based on the membrane's *Giardia* and *Cryptosporidium* removal capability, Azurix's approach will require considerably lower disinfectant dosages than other approaches. This will not only substantially reduce the annual disinfection chemical costs, it will also reduce the potential for the formation of disinfection byproducts, including TTHMs (total trihalomethanes). Our utilization of chlorine dioxide will also reduce disinfection byproducts.

In addition, recent research has shown that the ZeeWeed® Ultrafiltration system can remove 25.9% to 44.9% of Geosmin without pretreatment. (Geosmin, a secondary metabolite of blue green algae *Actinomycetes*, is a common concern associated surface water.) Ultrafiltration systems typically remove more Geosmin than microfiltration systems.

RESEARCH, MEMBERANES AND SDWA REQUIREMENTS

INTEGRATION INTO THE TAMPA BAY WATER SYSTEM

TREATMENT PROCESS DIAGRAM HERE

The Tampa Bay Water-Azurix Team delivers superior quality water using proven innovative technology by 2002. The alternative proposal not only meets, but exceeds the Request for Proposal requirement for innovative design. Additionally, our conceptual alternatives offer additional solutions for Tampa Bay Water's consideration. The All-American team offers innovative ideas with a performance based approach. The design-build-operate procurement process provides the All-American team with a winning strategy to stay competitive while grappling with existing and future SDWA requirements in their effort to give the region's citizens superior quality water.

The team understands the importance of an implementable project using a reliable process. At the same time we focus on a technically reliable process with operating viability the All-American team will