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May 6, 2010

HAND DELIVERY

Ann Cole, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

Re: Docket No. 090349-WS; Cypress Lake Utilities, Inc.'s Application for a Limited Proceeding Water and Wastewater Rate Increase in Polk County, Florida
Our File No. 30057.182

Dear Ms. Cole:

This correspondence is in further response to the March 30, 2010 letter from Jennifer Brubaker regarding the Utility's compliance with Order No. PSC-07-0199-PAA-WS. At the outset, it should be noted that Cypress Lakes Utilities, Inc. (the "Utility") filed a letter on January 15, 2010, addressing the Utility's compliance with Order No. PSC-07-0199-PAA-WS, and another letter was submitted on April 6, 2010.

Attached please find the previously submitted water quality evaluation report that was prepared by TBE Group in September 2007. This report reflects the evaluation of the Cypress Lakes water system that was generated in response to the Commission's directive contained in Order No. PSC-07-0199-PAA-WS, issued March 5, 2007. Cypress Lakes Utilities provided TBE Group with a copy of the Order so that our engineering consultant would be fully aware of the context in which the Commission directed the Utility to examine operational issues raised in Docket No. 060257-WS. Customers in that docket had registered a variety of water quality complaints including water odor, low pressure, low chlorine, no water, and black residue in toilets. Specifically, TBE was required to address the following tasks:

- Conduct a site visit to evaluate the existing conditions and determine if there are any operational issues that might be causing odors to be generated.
- Collect and review water treatment equipment data, system distribution data, and water quality data.
- Review water industry Best Management Practices (BMPs) for applicability in this instance.

- Prepare a summary report with recommendations including budget estimates.

The Utility's goal, which was imparted to TBE Group, was to identify and evaluate physical and operational improvements that would result in a reduction or elimination of odors as well as improve overall water quality. The Utility's staff fully supported TBE Group's efforts and provided the consultant with facility access, operational data, and anything else that was requested. The resulting evaluation report identified four tasks that addressed the most expedient and cost effective means of improving water quality as well as optimizing operational efficiency. These tasks included:

1. Make piping modifications in the plant yard so that the Utility could consistently feed chlorine and minimize the fluctuation of chlorine residual values in the distribution system. The consultant estimated this cost at $15,000.

2. Mark up a distribution system map to show the location of low chlorine residual values in order to correlate low values with geographical distribution. Because the Utility has up to date distribution system maps and the work could be done with existing staff, there was no estimated cost to accomplish this task. In addition, the Utility continued to execute its flushing program throughout the system in order to meet regulatory requirements.

3. Verify that all water distribution system valves are fully open and functional. The Utility's staff completed this task in conjunction with its valve exercise program. No valves were found to be closed or partially closed. There was no cost associated with completing this task.

4. In the event that Tasks Nos. 1-3 are not effective in reducing or eliminating water quality complaints, install automatic blow-off devices in select locations in order to automate the flushing of some dead end lines. The estimated cost to install these devices was $1,500 each. Included in the design and construction of Phase 12 was the requirement by the Utility for the developer to install automatic blow-off valves at no cost. However, the Utility's success in improving chlorine residual after executing Task No. 1 precluded the need to install additional blow-off valves at that time.

The TBE Group's evaluation report thoroughly identified the operational conditions of the Cypress Lakes water system that were evident at that time. The Utility relied upon the competency and training of our engineering consultant to provide recommendations that would be cost effective and prudent with respect to the Cypress Lakes system. The Utility

accepted at face value the fact that the implementation of the noted tasks would result in improved water quality and operational performance. In addition, there were no recommendations made to consider alternative water treatment methodologies. This implies that it would have been imprudent to consider more costly treatment options in order to achieve satisfactory results. Thereafter, Cypress Lakes Utilities, Inc. implemented the recommendations as outlined in the report and saw immediate improvements. It was and still is the Utility's position that no further consideration of alternatives was warranted or prudent at that time.

The Utility understands the frustration voiced by the Cypress Lakes Community Association with respect to water quality issues. We would be pleased to discuss those issues with the members of the board in an effort to explore any additional operational or treatment enhancements available. It is critically important in that process; however, for the Community Association to agree to support the Utility's subsequent cost recovery of any capital and operational costs associated with implementing those enhancements. That discussion would also need to include agreement on how to objectively evaluate the effectiveness of those improvements and not rely solely on subjective criteria.

Should you or the Staff have any questions regarding this filing, please do not hesitate to give me a call.

Very truly yours,

CHRISTIAN W. MARCELLI
For the Firm

CWM/tlc
Enclosure

cc: Steven M. Lubertozzi, Executive Director of Regulatory Accounting and Affairs (w/o enclosure) (via e-mail)
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John Williams, Director of Governmental Affairs (w/o enclosure) (via e-mail)
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Jennifer Brubaker, Esq., Office of General Counsel (w/enclosure) (via U.S. Mail)
Stephen Reilly, Esq., Office of Public Counsel (w/enclosure) (via U.S. Mail)

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CYPRESS LAKES WATER QUALITY EVALUATION

Prepared for

Cypress Lakes Utilities, Inc.
200 Weathersfield Avenue
Altamonte Springs, FL 32714

Prepared by

TBE GROUP

September 2007

TBE Project Number 00025-003-00

DAVID A. O'CONNOR
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No. 56803
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STATE OF FLORIDA
PROFESSIONAL ENGINEER
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TABLE OF CONTENTS

SECTION		PAGE
1.0	**BACKGROUND AND SCOPE OF WORK**	**1**
1.1	BACKGROUND AND PURPOSE	1
1.2	SCOPE OF WORK	1
2.0	**EXISTING CONDITIONS**	**3**
2.1	EXISTING PHYSICAL SITE	3
2.2	EXISTING WATER TREATMENT FACILITY	4
2.3	EXISTING DISTRIBUTION SYSTEM	8
2.4	EXISTING OPERATIONAL MAINTENANCE	9
2.5	CUSTOMER SERVICE	9
2.6	SYSTEM EXPANSION	9
3.0	**ANALYSIS AND RECOMMENDATIONS**	**10**
3.1	WATER TREATMENT FACILITY	10
3.2	DISTRIBUTION SYSTEM	10
3.3	OPERATIONAL MAINTENANCE	11
3.4	CUSTOMER SERVICE	12
4.0	**COST ESTIMATE**	**13**
5.0	**IMPLEMENTATION STRATEGY**	**14**

LIST OF FIGURES

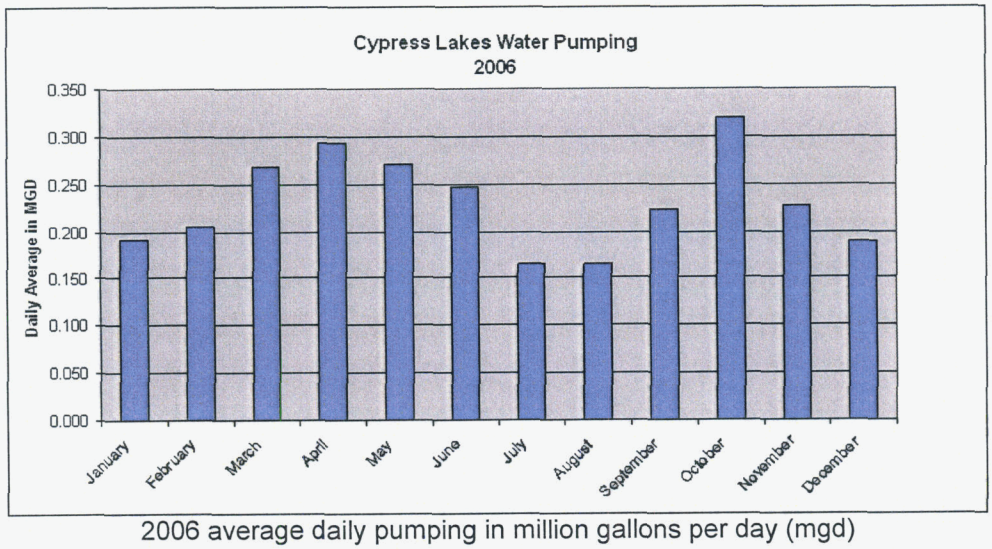
Figure 1	Cypress Lakes Aerial and Vicinity Map
Figures 2 – 5	Cypress Lakes Water Distribution System

1.0 BACKGROUND AND SCOPE OF WORK

1.1 Background and Purpose

Cypress Lakes Utilities, Inc. owns and operates a water treatment and distribution facility at Cypress Lakes in Lakeland, Florida. The attached **Figure 1** includes an aerial and vicinity map of the Cypress Lakes development and water treatment facility. The water production and distribution facilities consist of two on-site groundwater production wells, a sodium hypochlorite chlorination system, two 10,000-gallon above ground hydropneumatic tanks, backup power generation, and a community wide distribution system.

Residents have cited odor problems within their homes from the potable water. The development experiences significant population fluctuations, with two distinct summer-season /winter season fluctuations. The higher demands during the winter have not historically caused any discernable complaint pattern, however the summer low-flow period is the time of heaviest complaint volume.



2006 average daily pumping in million gallons per day (mgd)

1.2 Scope of Work

TBE was contracted by Utilities, Inc. of Florida to provide professional engineering services in connection with a Cypress Lakes water quality evaluation.

Specifically, TBE was tasked to:

1. Conduct a site visit/kick-off meeting to evaluate the existing system and to determine if there are any operational issues that might be leading to odor issues

2. Data Collection and review
   - Collect water treatment equipment data, system distribution data, and water quality data

3. Review Industry Best Management Practices (BMPs) for Applicability

4. Prepare a summary report with recommendations including budget estimates

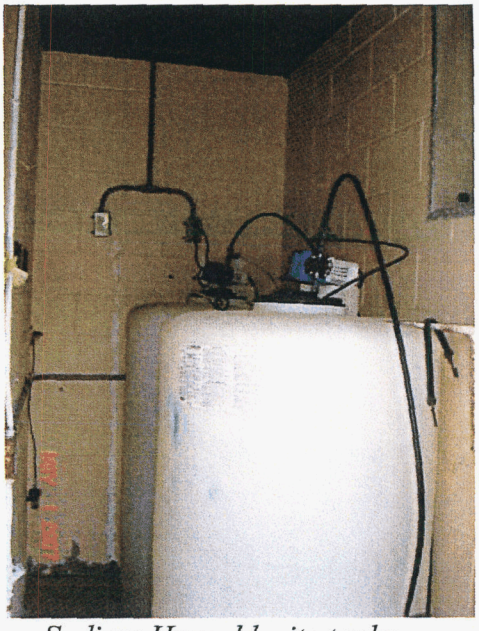
The goal of this document is to provide Cypress Lakes Utilities, Inc. with an engineering evaluation that addresses physical and operational improvements to reduce or eliminate odors and improve overall water quality.

2.0 EXISTING CONDITIONS

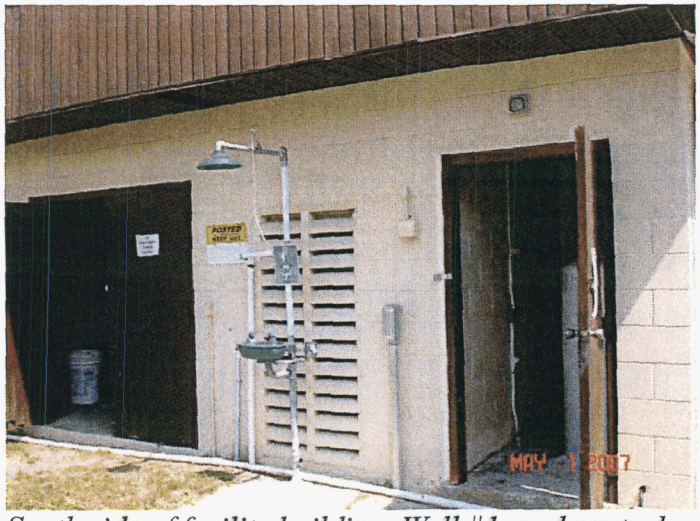
2.1 Existing Physical Site

Cypress Lakes is a residential development located at 10000 US Highway 98 N, Lakeland, Florida. The Cypress Lakes development is a phased development project with integrated water and wastewater system utilities. The Cypress Lakes water treatment facility is located within the Cypress Lakes development, (see **Figure 1**), and has two wells, pumps/controls, chlorination, pressure equalization tanks, and distribution piping/valves.

Pump and Chlorine building, and pressure equalization/storage tanks at Water Facility.



Sodium Hypochlorite tanks.



South side of facility building, Well #1, and control room on the left, and sodium hypochlorite room on the right.

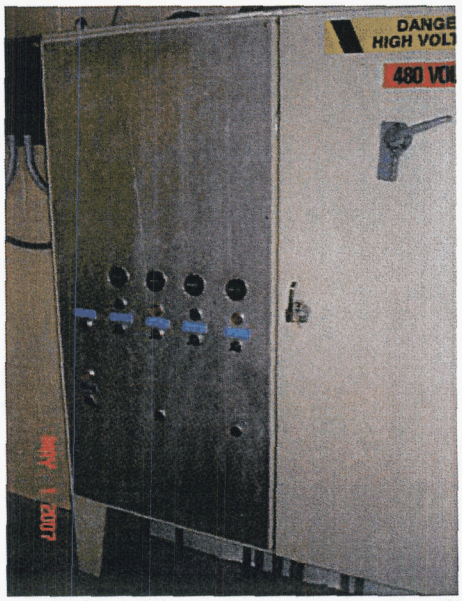
The water treatment facility provides potable water to1,439 customer accounts on a yearly basis. The Cypress Lakes development distribution system is composed of 4, 6, and 8-inch PVC mains, with individual services of high density polyethylene pipe (HDPE). Figures 2 through 5 illustrate the existing distribution system.

2.2 Existing Water Treatment Facility

The Cypress Lakes water treatment facility is located within the development, on a parcel of land dedicated for that purpose. The parcel has two wells, (Well # 1 is located inside a small concrete block structure, and Well #2 is located approximately 200 feet southwest of Well #1 in an open area of the water treatment facility property. The electrical control panels for both wells are located within the pump room housing in the same area of the concrete structure as Well No. 1. The water treatment facility is enclosed by a chain-link fence with padlocked gates.

Well#2, approximately 200' southwest of Well #1

Well #1 located inside of building



Well #1 / #2 control panel in Facility Building.

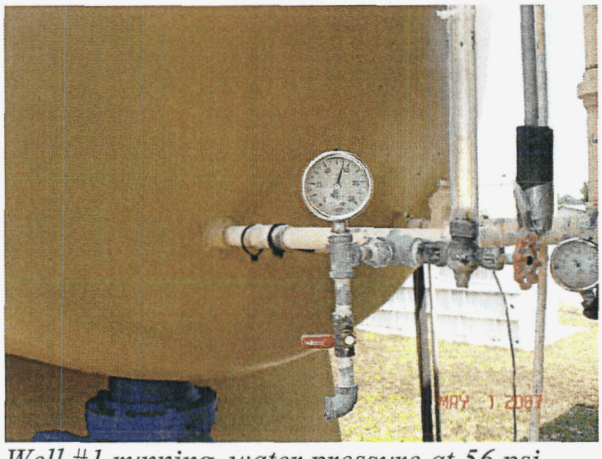
Emergency generator transfer switch.

Both water wells are approximately 540 feet deep, driven by two High Thrust US Electrical Motors, (Well #1 is 60 horsepower, and Well #2 is 50 horsepower), and manifold just outside of the concrete block structure. The water is temporarily stored in two hydropneumatic tanks located just west of Well #1. Both tanks are exposed to the elements. At the time of the initial site visit, the operating pressure of the distribution system was observed at approximately 56 pounds per square inch, (psi), with Well #1 running, and approximately 49 psi, with Well #1 off. During a second site visit on May 22, 2007, the operating pressure of the distribution system was fluctuating between 52 and 62 psi.

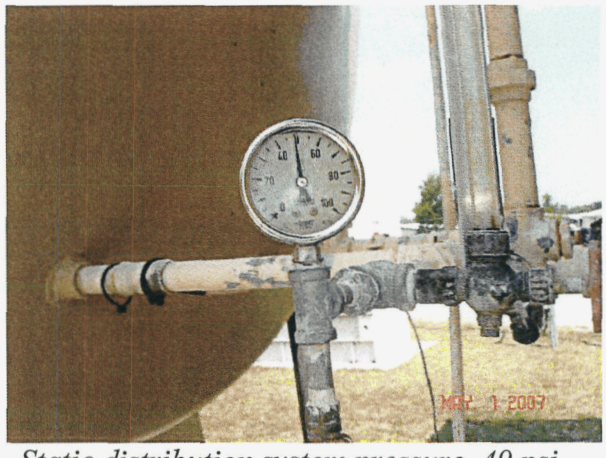
Water is pumped into the two 10,000 gallon hydropneumatic tanks. The tanks are used for pressure equalization and storage. The pressure range of the distribution system is regulated by a pressure sensor controlling the pumps. At the time of each site visit, the water level in each of the tanks was being maintained at approximately the 50% level. The pressurized air in the tanks mitigates the number of pump cycles.

Hydropneumatic tanks and manifold piping from Well #1 and Well #2.

Hydropneumatic tanks. Looking east toward Facility Building.



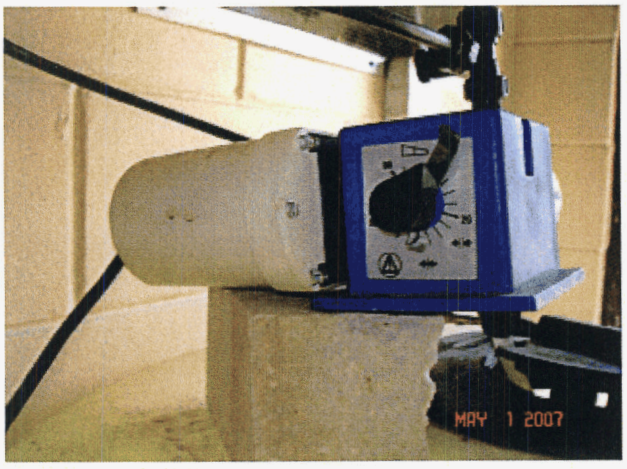
Well #1 running, water pressure at 56 psi .



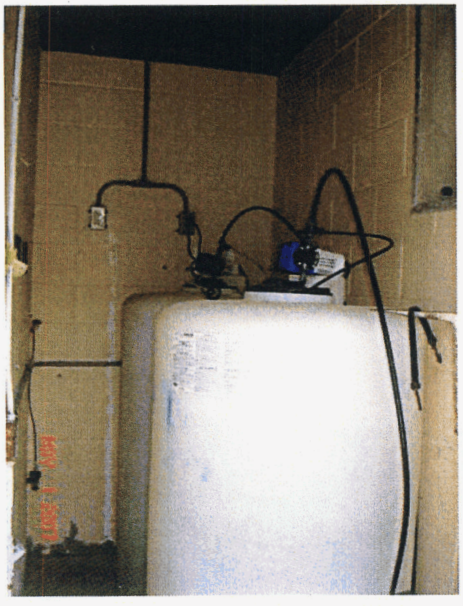
Static distribution system pressure, 49 psi, (no pumps running.)

Disinfection is accomplished by two variable feed dosing pumps supplying liquid sodium hypochlorite to the entry pipes of the pressure equalization/storage tanks. Two tanks of Sodium Hypochlorite are located within a separate room in the water treatment facility building. The sodium hypochlorite tanks are refilled approximately every 10 to 14 days depending on demand.

A follow up investigation of the yard piping was conducted on June 5, 2007 by Florida Rural Water Association utilizing Ground Penetration Radar (GPR). TBE assisted with manual probing of the area to evaluate the routing of the piping from the production wells to the tanks and out to the distribution system. It appears that the two production wells are individually piped and chlorinated prior to manifolding upstream of the hydropneumatic tanks. Well #2 is currently piped into a bypass line on the north side of the two hydropneumatic tanks. Flow goes through both tanks and then manifolds back together into the distribution line.



One of two sodium hypochlorite injection pumps



Two sodium hypochlorite tanks.

Sodium Hypochlorite supply lines on ground, split and connecting to Tank #1 and #2 distribution piping.

2.3 Existing Distribution System

The distribution system is composed of PVC water main, ductile iron fittings, fire hydrants, valves and appurtenances, and a variety of 2-inch blow-off assemblies. Residential services are polyethylene pipe with appropriate corporation and curb-stops, and residential meters.

Due to the development of residential lots adjacent to, and around an extensive golf course, there are numerous non-looping legs of the distribution system piping that rely on either residential usage or operational flushing/blow-off activities to maintain chlorine residuals and acceptable water quality.

Simple gate valve and 2-inch galvanized pipe blow-off.

Above ground Kupferle, 2-inch blow-off.

Typical American Darling fire hydrant.

In-ground Eclipse Blow-off assembly

2.4 Existing Operational Maintenance

Cypress Lakes Utilities, Inc. maintains one full time Water/Wastewater Operator on site. Routine maintenance activities are performed by this person with additional personnel available on an as-needed basis.

2.5 Customer Service

Cypress Lakes Utilities, Inc. receives and responds to customer inquiries and complaints as part of their operational procedures. According to a Public Service Commission report, complaints and issues have been responded to within 24 hours on average. The report states that the majority of the complaints were billing and meter related, but there were also complaints for water odor, low pressure, low chlorine, no water, and black residue in toilets. There were also complaints about the frequency of operational flushing of the water system.

2.6 System Expansion

Cypress Lakes is currently under construction of a new 120-lot subdivision (Phase 12). Cypress Lakes Utilities, Inc. has indicated that the existing capacity of the water treatment facility is sufficient to provide water to this new phase of homes. There is no planned expansion to the water treatment facility.

3.0 ANALYSIS AND RECOMMENDATIONS

3.1 Water Treatment Facility

The current operation of the water treatment facility appears to be in compliance with the requirements of the Polk County Health Department (PCHD) and the Florida Department of Environmental Protection (FDEP). The water quality and production reports were examined by the Public Service Commission and were found to meet all regulatory requirements.

To improve the overall quality of the water being delivered and operational efficiency, the following is recommended:

1. On-site piping should be modified so the water from both production wells is manifolded together with a single chlorine injection point. The chlorine injection supply line should be buried a minimum of 3 feet deep, from the Chlorine Storage Room, west, to the injection point.
2. During the on-site visit, Well #2 was not being used due to suspected high sulfides content of the water. It is recommended that Well #2 should be used in such a way that a consistent blend of water from Well # 1 and Well # 2 is supplied to the distributions system at all times.

3.2 Distribution System

Based on historical information, (system maps and information provided by on-site personnel), the main distribution system is composed of PVC piping with ductile iron valves, fittings, and fire hydrant appurtenances. Blow-off assemblies are of three observed types: above-ground Kupferle, in-ground Eclipse Blow-off Hydrants, and simple gate valve with 2-inch galvanized pipe riser. Residential services appear to be polyethylene lines with appropriate corporation and curb stop fittings.

There are 17 water distribution lines within the Cypress Lakes development that terminate with 2-inch blow-off assemblies. These lines serve 228 residential lots.

TBE recommends the following:

1. Standardize the blow-off assemblies. Select an appropriate blow-off assembly that will accommodate the range of "programmable automatic blow-off devices" that allow programmed flushing activities during low flow system conditions. Florida Rural Water Association has provided Cypress Lakes Utilities, Inc. with instructions on building an Automatic Flushing Valve that would be an example of an appropriate automatic blow-off device.

2. Partially closed main line valves or a closed valve in a "looped" distribution line section could cause low flow, low pressure, and chlorine residual problems. It is recommended

that Cypress Lakes Utilities, Inc. check all distribution line valves for "full open" position. (An updated Distribution Map, with approximate locations of line valves may be needed.) It is not uncommon for 2-inch gate valves to be broken in the shut or partially-shut position.

3. Perform a hydraulic model to monitor chlorine residuals, if necessary.

4. Test system for biofilm growth (coliform testing), if necessary.

While a chlorine booster station would increase chlorine residual, it was not evaluated in detail because of the number of other more cost effective solutions that could be explored. The capital costs of a chlorine booster station will likely be saved with the implementation of the other proposed improvements to the system and its operation.

3.3 Operational Maintenance

Operational maintenance is geared to meeting regulatory requirements and to provide an acceptable level of customer satisfaction.

Based on historical information, (information provided by monthly maintenance logs and conversations with on-site personnel), TBE recommends the following operational maintenance procedures:

1. Develop a spreadsheet to correlate low chlorine residual grab samples with location in the distribution system, water temperature, and volume of water pumped. A trend analysis can easily be performed on this data with all three parameters shown on a compound line graph. This data may provide an accurate method of predicting problems. Refine the spreadsheet to include the seasonal fluctuations of the residential population impact on low chlorine residual grab samples. The daily temperature should also be included to assist in correlating any system temperature effects on chlorine residual.

    - Use this information to develop a Standard Operating Procedure (SOP) to indicate when increased flushing of the distribution system may be required to meet regulatory requirements and to provide high quality water to the customers. The major factors affecting water quality seem to be low flow and possibly higher water temperatures during summer months. Although the water temperature may be elevated during the hottest months, this temperature is most likely stable during this period. This would leave water volume as the only real variable at any point. If water temperature does not seem to be a contributing factor, collection of this data could be stopped.

    - Use the information to identify specific locations within the distribution system that may experience low chlorine residuals even at the highest residential population demands. If there are areas that show low chlorine residuals during

this time, the option may be to increase flushing operations in this area or to install a chlorine booster station at this point.

2. Refine the original spreadsheet information to identify specific locations within the distribution system that may experience water quality complaints (odor, taste, black residue in toilets, and clogged filters). This information may be used to identify specific locations within the distribution system that are experiencing low velocity flow characteristics. Such areas may require periodic high velocity flushing through existing fire hydrants to clear sediment and debris from the system.

3. Establish a system map where water quality and low pressure can be easily evaluated. A map with colored pins may be used to differentiate the various water quality or pressure complaints.

4. Test chlorine residual at suspected problem areas and compile data.

5. Identify areas to loop system to increase flow characteristics

3.4 Customer Service

Customer service is essential to the operation of the utility. From historical records, there are several areas that continue to be issues with the residents of the development. One of the most prevalent complaints is that there is "too much water wasted during flushing activities". This issue is difficult to change because the utility must use flushing activities periodically to maintain the water quality.

TBE recommends that the utility consider the following:

1. Meet with the Cypress Lakes Development Home Owners Association to discuss the possibility of initiating a lawn watering program. This program would have up-front installation costs and would have on-going operational costs. Part of the costs of this program might be offset by a reduction in the current operational maintenance activities to assure water quality, and the cost of the water used during the current flushing procedures.

The benefits of this program to the utility would be that there would be an additional revenue stream from the use of water for irrigation purposes and a reduction of maintenance activities related to flushing activities.

The benefits to the residents would be that they would use the water to maintain their lawns, and that there would be less wastage of water during operational flushing activities.

4.0 COST ESTIMATE

4.1 Water Treatment Facility

The proposed improvements to the water treatment facility include manifolding the raw water piping to allow for more consistent dosing of chorine.

Budgetary Estimate of Cost	$15,000

4.2 Distribution System

The proposed improvements to the Distribution System include standardizing on blow-off assemblies and incorporation into the system. Until problem areas are determined, an estimate of 10 blow off assemblies are included.

Budgetary Estimate of Cost	10 units @ $1,500 each installed ($15,000)

4.3 Operational System

The proposed improvements to the Operational System include compiling data in a spreadsheet and creating an accurate distribution system map for documenting potential low chlorine and/or poor quality water areas. Another operational task is to operate all existing valves to confirm they are "fully open". Broken valves should be replaced.

Budgetary Estimate of Cost	10 hours per month @ "manhour" cost

5.0 IMPLEMENTATION STRATEGY

The following recommendations are prioritized for implementation based on the most expedient and cost-effective methods to improve water quality and optimize operational efficiency. The strategy recommended is to implement a preventative maintenance program and then assess the results of the program. This approach often resolves water quality issues without the need for more expensive water treatment systems.

Implementation Task #1:

Piping improvements should be made to the existing yard piping so the two wells are manifolded together with a single chlorine dosage point. Bypass piping should be incorporated into the piping improvements. Pressures and flows into and out of the two hydropneumatic tanks should also be further evaluated to ensure consistent pressures and flows can be maintained.

- Consistent chlorine dosing at the start of the distribution system should minimize fluctuating chlorine residual test results in the distribution system.

Implementation Task #2:

TBE recommends developing a distribution system map to correlate low chlorine residual grab samples with their respective locations within the distribution system.

- The development of the distribution system map may quickly identify water quality issues occurring within specific locations in the distribution system and allow operational maintenance activities to be applied on a prioritized basis. A table or spreadsheet may accompany the map to help document the location of problem areas.

Implementation Task #3:

Verify that all water distribution valves are fully open. This may correct low pressure, low chlorine residuals, odor, taste, black residue in toilets, and clogged filter complaints, with subsequent flushing activities.

- Examination of the distribution map with problem areas shown may identify specific areas to be field verified for proper water valve position. If any valves are found to be in a closed or partially closed condition, they should be noted in the spreadsheet by entering the date and specific location of the valve. The valve should be fully opened and subsequent flushing of the upstream/downstream distribution system should be accomplished. Standard field testing of chlorine residuals should be taken. Periodic chlorine residual sampling will need to be scheduled to assure residuals are being maintained.

- Monitor any location where a valve has been found and corrected to a fully open position for other historical water quality issues such as: low pressure, odor, taste, black residue in toilets, and clogged filter complaints. If these complaints continue, a high velocity flushing program may need to be implemented, and results monitored and recorded. Persistent odor, taste, black residue in toilets, and clogged filters may require additional cleaning methods to augment high velocity flushing procedures.

- Identify all water valves on the Distribution System map and develop a SOP for a periodic valve exercising program.

Implementation Task #4:

Schedule physical upgrades to the Water Distribution System.

- If results of Immediate Action Implementation Tasks 1, 2, and 3 are not effective in reducing or eliminating water quality complaints in the areas of the distribution system that terminate in 2-inch blow-off assemblies, schedule the installation of standardized blow-off assemblies that will accommodate programmable automatic blow-off devices.

NORTH

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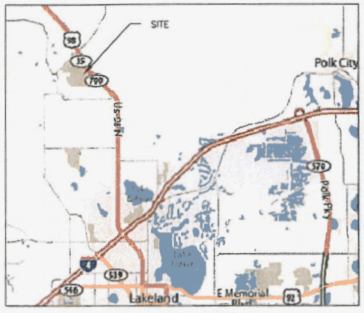
GRAPHIC SCALE
(IN FEET)



VICINITY MAP
NOT TO SCALE

NO.	DESCRIPTION	BY	DATE

UTILITIES, INC. OF FLORIDA

CYPRESS LAKES

TBE GROUP

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Environmental • Planning

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License No. 3843

DAVID A. O'CONNOR, PE DATE
LIC. NO.: 56803

DESIGNED
DRAWN
Q.C.
APPROVED

FIGURE 1
OVERALL SITE MAP

PROJECT NO: 00025-003-00
DATE: SEPTEMBER 2007
SHEET NO:

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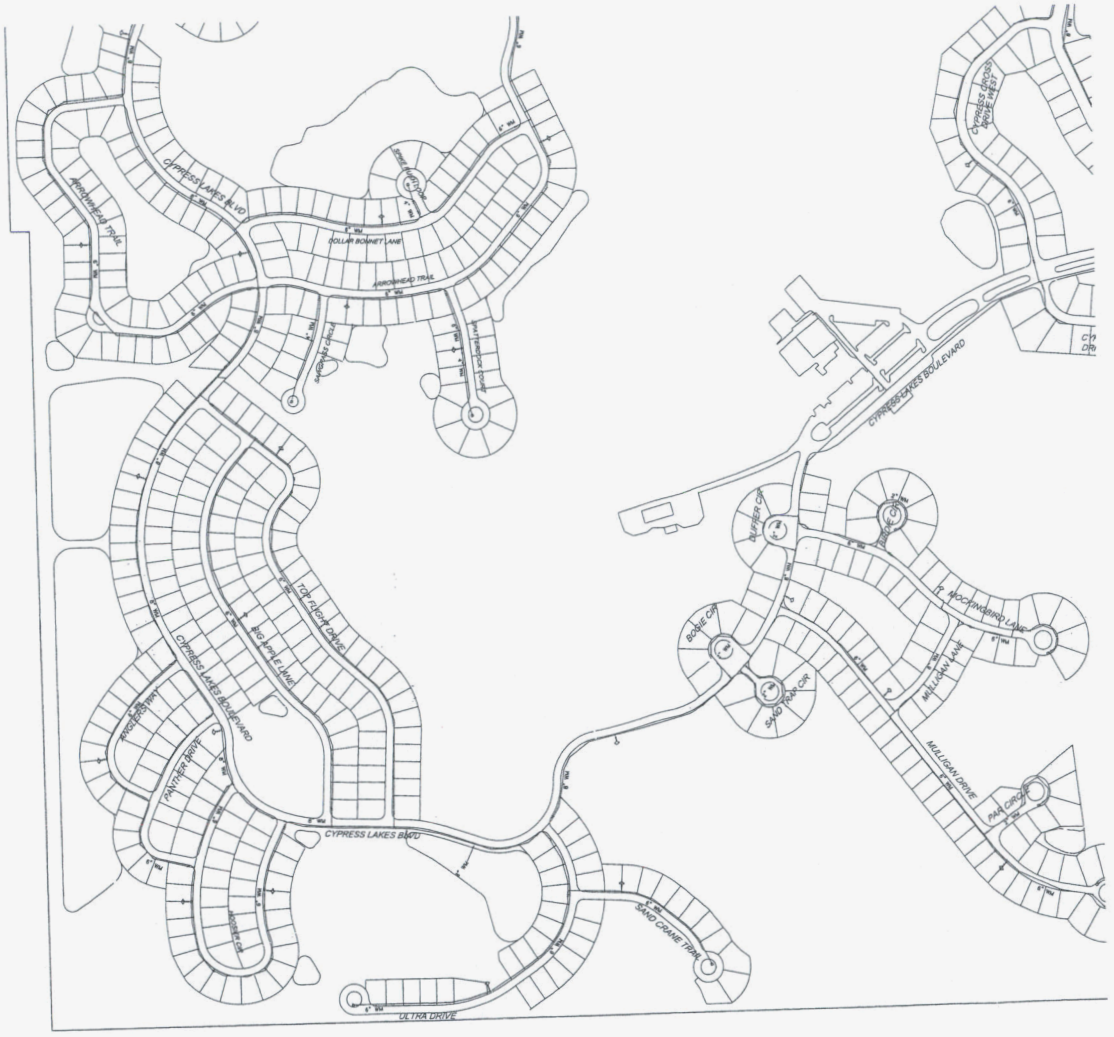

NORTH

-100 0 50 100 200 400
GRAPHIC SCALE
(IN FEET)

NO.	DESCRIPTION	BY	DATE

UTILITIES, INC. OF FLORIDA

CYPRESS LAKES

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DAVID A. O'CONNOR, PE DATE
LIC. NO.: 56803

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DRAWN
Q.C.
APPROVED

FIGURE 2
WATER SYSTEM

PROJECT NO: 00025-003-00
DATE: SEPTEMBER 2007
SHEET NO:

FILE: J:\00025\00025003.00\ACAD\dwg\Cypress Lakes Water.dwg LAST SAVED: Tue, 08/07/07-9:00a PLOTTED: Tue, 10/09/07-2:46p BY: DAO

NO.	DESCRIPTION	BY	DATE

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Q.C.
APPROVED

FIGURE 4
WATER SYSTEM

PROJECT NO: 00025-003-00
DATE: SEPTEMBER 2007
SHEET NO:

FILE: J:\00025\00025003.00\ACAD\dwg\Cypress Lakes Water.dwg LAST SAVED: Tue, 09/07/07-9:06a PLOTTED: Tue, 10/09/07-2:48p BY: DAO

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LIC. NO.: 56803

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FIGURE 5
WATER SYSTEM

PROJECT NO: 00025-003-00
DATE: AUGUST 2007
SHEET NO: 5

FILE: J:\00025\00025003.00\ACAD\dwg\Cypress Lakes Water.dwg LAST SAVED: Tue, 08/07/07-9:00a PLOTTED: Tue, 10/09/07-2:48p BY: DAO